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**Assembling the taken-for-granted:
carbon offsets and voluntary
standards**

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Declaration

I declare that, except where otherwise indicated, this thesis is entirely my own work, and that no part of it has been submitted for any other degree or professional qualification.

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June 5th 2013.

Abstract

Carbon is a metric at the centre of contemporary debates. It is invoked to explain responses to climate change and justify political decisions over the economy and environment. Its ubiquity might suggest that the definition of carbon is broadly agreed upon, but along with greenhouse gas (GHG) measurements, articulating carbon as a commodity has incorporated debates over sustainable development (SD). The use of market-based mechanisms to manage carbon quantities results in articulations of the concept that reinforce consumption as a means to achieve public policy aims, but these are also contested. This research examines the concept of carbon to explore what might be taken-for-granted or overlooked when carbon is invoked.

The research takes an ethnographic approach to carbon by examining offsetting – paying for reductions in GHG emissions at one location to make up for a continuation or increase of emissions at another. The novelty, complexity and lack of trust in carbon offsetting have resulted in numerous voluntary standards to improve consumer confidence in this commodity. The standard organisations’ position in codifying, measuring and accrediting carbon makes them valuable sites at which to describe the materialities of the concept. I use data collected from the administrative offices of two voluntary carbon offset standards in 2010-11 to explore what is included and excluded within carbon as it was enacted at these sites.

Carbon is described in this research as an assemblage and a multiplicity – it is articulated in varying ways by actors within offset markets. Through the work of standards organisations, the “orthodoxies” of offsetting are identified as taken-for-granted features of carbon. In contrast, the position of SD is identified as variable across different articulations of carbon. Using a post-Actor Network Theory approach innovatively combined with Suchman’s typology of legitimacy, this diversity in carbon is not normatively evaluated; instead the focus is on how assemblages of carbon differentiate the legitimacy of SD as a feature of offsetting. Some take SD for granted as an inherent aspect of offsetting, for others it is a desirable feature, but not necessary. Alternatively it could be offered as an add-on possibility without suggesting SD implied better offsetting, and for others offsetting was best enacted without assembling SD concerns. Exploring carbon as an assemblage demonstrates the continuous and flexible constructions of carbon as a commodity and concept.

When examined in detail, the marketing strategies and technical rules of different standards produce varying articulations of carbon. Furthermore, this research explores how the work of voluntary carbon offset standards excludes the scrutiny of sites of consumption of offsets. This exclusion, as with the integration of SD, is notable for the differences in how it is articulated by standard staff – challenged by some, taken-for-granted by others but with diverse rationales for each position. These features are informative in relation to the roles ascribed to voluntary standards across other commodities as well as in relation to carbon. Attending to the multiplicity that exists in the daily practices of offset markets suggests possibilities for those looking to stabilise or reform the concept of carbon as well as understanding the activities of voluntary standards.

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For the rest of this document the insight is occasionally borrowed, any mistakes are my own.

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List of Acronyms

AFOLU	Agriculture, Forestry and Other Land Use
ANT	Actor Network Theory
CARB	California Air Resources Board
CCB	Climate, Community and Biodiversity (Standard)
CDM	Clean Development Mechanism
CDM EB	Clean Development Mechanism Executive Body
CER	Certified Emissions Reduction
COP	(United Nations) Conference of the Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
ERT	(United Nations) Expert Review Teams
EU ETS	European Union Emissions Trading Scheme
FAR	Forward Action Report
FSC	Forestry Stewardship Council
GHG	Greenhouse Gases
GS	The Gold Standard
ICROA	International Carbon Reduction and Offset Alliance
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
MRV	Measurement, Reporting and Verification
NGO	Non-Governmental Organisation
OO	Objective Observer
PoA	Project of Activities
REDD	Reduced Emissions from Deforestation and Degradation
RGGI	Regional Greenhouse Gas Initiative

RM	(Gold Standard) Regional Manager
SD	Sustainable Development
STS	Science and Technology Studies
tCO ₂ e	Tonne of Carbon Dioxide Equivalent
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard (Voluntary Carbon Standard until early 2011)
VER	Voluntary (or Verified) Emissions Reduction

Chapter 1: Introduction

1.1 Introduction

“Warming of the climate system is unequivocal” the Intergovernmental Panel on Climate Change (IPCC) confirmed in 2007 (IPCC 2007, p.30), and “most of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic GHG [greenhouse gas] concentrations” (IPCC 2007, p.39 emphasis in original). In the IPCC language of probabilities of occurrences, “very likely” means a more than 90% certainty “using expert judgment and statistical analysis of a body of evidence” (2007, p.27).

Notoriously, not everyone agrees with the IPCC statements, but this has not stopped vast numbers of individual, community, regional, national and international actions to reduce the human impact on the global climate. The general consensus is that none of these current attempts, and not even all of them put together, are enough to stabilise the rate of change that is being observed. However, even if they have not solved the problem, in the process these activities have changed the world in perceptible ways. These actions to respond to climate change are in large part ordered through the concept of carbon: “carbon is fast becoming a common denominator for thinking about the organization of social life in relation to the environment” (Bridge 2011, p.821). To help in understanding some of these changes, this thesis examines one small part of one response to climate change: voluntary offset standards in the production and international trading of a commodity that some have come to know as carbon.

This introduction will first explain what carbon and offsetting mean in the context of responses to climate change, and give a broad overview of the divergent opinions on what carbon markets (are supposed to) do and how well they are doing it. This description serves two purposes. It begins the process of making offsetting strange for those already familiar with carbon markets, as well as familiarising those who may be without prior in-depth knowledge of the topic. This will provide the starting point for a

closer examination of voluntary standards as they relate to offsetting, assemblages, sustainable development and, ultimately, open discussions on what is being included or excluded in the term carbon.

1.2 What are carbon offsets?

In fact, when discussed in relation to climate change, carbon is not carbon at all. What is usually being talked about is any one of six gases (the greenhouse gases, or GHG) which were decided at the 1997 UN negotiations of the Kyoto Protocol to be the most important to reduce in order to avoid large-scale anthropogenic impacts on the global ecosystem¹. To make it easier to measure and monitor – although it was by no means an easy feat (see MacKenzie 2009, pp.445–7) – each gas was designated a figure of their equivalent polluting potential so that one unit could be used when discussing all emissions. The unit chosen was one metric ton of carbon dioxide equivalent (tCO₂e), which has become known as carbon.

Before this political confirmation of a metric of something directly related to climate change, a separate set of developments in economic theory and political debates had resulted in the concept of offsetting. In the broadest terms, offsetting is the idea that you can make less of something in one location to counterbalance making more of it somewhere else.² As it has come to be practiced in carbon markets, it generally means *paying* someone to pollute a *precise* amount less (measured in tCO₂e) *than they otherwise would have done* to make up for the payer continuing to produce that same *precise* amount of pollution. Two activities which are seen respectively to pollute and not-pollute by the same quantity of GHG can be equated as offset, which means there is no aggregate change in the total amount of pollution produced, but in theory a reduction on what would have happened if the economic interaction had not occurred. Offsetting thus refers to the quantified presence *and* absence, hypothetical *and* actual, of any one of the six nominated GHG.

Fundamental to the idea of carbon offsetting is an acceptance of the commensurability

¹ Carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons (Kyoto Protocol 1998, p.19).

² Or vice versa, as in the case of biodiversity offsetting where one can reduce/destroy an ecosystem but pay someone to protect an equivalent one somewhere else.

and fungibility (that one thing can be traded to replace another with no loss of value or meaning) of pollution and non-pollution (Coelho 2011) occurring at different sites. It also requires a willingness to prioritise the aggregate – in this case, global emissions – over local concerns and impacts (Boyd 2010). It demands trust in the calculative capacities of a variety of actors, and faith in the idea of quantifying hypothetical future scenarios. It is vital to the concept of offsetting that while there is no gas released on the part of a carbon offset seller, there was a hypothetical and measurable amount of gas that would have been produced, had the economic exchange not happened. Proving this is known as additionality by those who work in carbon markets. Payments are made per tonne of CO₂ equivalent, so precision in quantification is highly economically salient.

The practice of GHG emissions offsetting has existed as a commercial reality since 1989, when a US energy company paid for the preservation of forests in Guatemala that were selected to reflect precisely the amount of emissions (the preferred term in the market, rather than pollution) that the company had produced (Paterson 2009). This type of offsetting became known as voluntary when last minute negotiations of the Kyoto Protocol added in a surprise (Werksman 1998) set of rules that made offsetting part of the UN's compliance approach to tackling climate change: carbon markets (Cutajar 2004).

1.3 What are carbon markets?

Rather than choose between the historical narratives of carbon markets (see Brohé et al. (2009) for a standard account; Lane (2012) for a superbly deconstructed alternative), I skip straight to what was the largest and best known archetype, the Kyoto Protocol emissions trading system (ETS), to give a general understanding of what carbon markets have become.

When the Kyoto Protocol came into effect in 2005, it created legally binding targets³ (a cap) on the GHG emissions of specific, highly polluting industries in the developed countries that chose to ratify the Protocol. It was agreed – although only just (Andresen and Agrawala 2002; Betsill and Hoffmann 2011) – that these targets were to be met

³ To make an aggregate of around 5% below 1990 levels in the period 2008-12. Each ratifying country had their own specific target.

through a cap-and-trade scheme. Each national government gave (or allocated, in market terminology) carbon credits to companies within the relevant industrial sectors, designating how much GHG they could emit but giving them the choice of using their allocation themselves or selling it to others. This trade aspect of a cap-and-trade design is supposed to ensure that reductions are made in a cost effective (i.e. cheapest for the company who owns the allowances) way. The price of the credits determines a cost benefit analysis for each company on whether it is more efficient to pay whatever the cost of reducing (or maintaining) their emissions below their designated allowance and make a profit by selling their extra credits, continue emitting at their allowed level, or to emit above their designated cap and buy credits from elsewhere to cover the extra emissions. It is important to emphasise that the price of these credits is determined by their availability; that is, how high or low the cap is. Without a politically installed limit, no companies have any need to trade any carbon credits.

None of this has to involve offsetting. Carbon markets can mean polluters trading allowances amongst themselves under price incentives determined by the total number of credits allocated. However, the Protocol also allowed for companies to buy a limited number of credits (known as Certified Emissions Reductions, or CER) from outside the geographical cap of the treaty under what was named the Clean Development Mechanism (CDM). This was the surprise move that put offsetting into the picture. The idea is reported to have come about during the negotiations to appease developing country governments (particularly Brazil) who were unhappy that this inter-polluter trade would not channel any funds to countries outside the cap (Cutajar 2004). US negotiators saw the potential to develop a market mechanism. This met an American desire to install flexibility into the trading system to make it more appealing to domestic legislators who did not want binding international caps potentially impinging on US growth – especially as the rules were not being applied to China (Cutajar 2004, pp.62–3). The Kyoto Protocol thus added a set of activities that were aimed at reducing GHG emissions *and* “to assist Parties not included in Annex I [i.e. developing countries] in achieving sustainable development” (UNFCCC 1998, sec.2). This clause instigated a dual purpose for the CDM, and made sustainable development (SD) appear on the international agenda of carbon markets in codified (although undefined) terms.

In the end, the inclusion of the possibility to buy offsets as well as trade emissions was not enough to persuade the US Senate that Kyoto should be ratified by the United States. Nevertheless, it did result in a compliance offset industry that had come to be worth US\$140 billion by mid-2011 (UNFCCC 2011a), with the hypothetical reduction of over a billion tCO₂e by September 2012 (UNFCCC 2012a). For those not obliged under Kyoto, voluntary offsetting has continued as an option, although at a tiny fraction of the scale – less than 0.1% of offsets transacted in 2011 were done so voluntarily (Peters-Stanley & Hamilton 2012, p.7). Where expectations within the market until 2009-10 had generally been that the global compliance market and its offsetting offshoot would continue, the failure of UN negotiations at Durban in 2011 meant that a fragmented set of national and regionally managed markets are emerging after 2012. Some governments have seemed keen to replicate a compliance market approach – including offsetting – to tackling climate change.⁴ However, none reach anything near the scale of the UN rules that were the norm when this research began in January 2010.

The promises, obligations and equivalences (and the sums of money involved) have created a new commodity and spawned an industry which identifies itself as the carbon offset market. It has newsletters, websites, conferences, expos and facebook groups. It is populated by people organising projects that reduce or avoid emissions in return for money from those who continue polluting, bankers, traders, brokers, auditors, independent accreditors, consultants, scientists and engineers. Between 2005 and 2012, carbon offset markets were enacted and became entrenched in the present even if they were contested by some as impracticable or undesirable in the future. In sum, what counts as the carbon markets has fluctuated in politically created spaces, with implications for the economic outcomes and professional identities of those involved, and shifting understandings in some of the sets of practices and meanings that have developed over a relatively brief time. Offsetting has become a recognisable – and, at least for those who agree with and are designing new carbon markets, acceptable – alter-ego to the more straightforward ideas of GHG emissions production/reduction. Offsetting activities make up part of the definition of carbon as it is bought and sold, produced or avoided.

⁴ At the time of writing, the EU, California, Australia, New Zealand, South Korea, NE United States, Quebec, Switzerland, China (at national and city levels) had carbon markets in operation or in final legislative stages.

1.4 What are offset projects?

Although the first, and for many people, the most easily imaginable offset projects probably involve planting or protecting forests, this is not an accurate representation of offset projects. In compliance markets, there are rules around what activities can be undertaken to count as an emissions reduction. The development aspirations underpinning the CDM meant that CER had to be produced in developing countries, with the majority of credits (60%) by 2012 coming from China. A UN list defined what could count as an offsetting activity under the CDM – although this list was expanded as new projects with new ideas applied. The most common project types in the CDM were renewable energy, although more credits had been issued to projects that improved the efficiency of industrial processes by 2012 (UNEP 2012). The only activity defined as not eligible for discussion as offsetting at Kyoto was nuclear energy. A number of other potential ideas were also excluded⁵ and some others were accepted and later rejected amidst controversy.⁶ Other compliance market regulators have applied different rules, for example the EU after 2012 only accepted new projects from the least developed countries (European Parliament 2008), whereas the California market encourages offsets from projects in the US as well as some from overseas. As well as specifying the activity, compliance offsets under any regulatory system have procedures for their verification by auditors and documentary reviews by appointed bodies to monitor what offset projects do, how they do it and how they count the emissions reductions.

For voluntary offsetting there is no such specific definition or oversight. In theory, anything that I can persuade someone is less emissions than I would have otherwise created (in a measurable amount) could be done by me as an offset project and then sold as an offset. As will be discussed in detail in Chapter 6, whether or not SD is seen to be necessary or even relevant to offsetting varies over time, spaces and rules within offsetting, but measurable and measured GHG emissions reductions are a must. Although there is a high demand for projects in developing countries, over the last five years around a third of all voluntary offsets have come from projects in North America

⁵ Carbon capture and storage, avoided deforestation.

⁶ An industrial process known as HFC-22, where incomes from offsetting were creating the economic incentive to construct factories that would pollute because it was so profitable to then reduce their pollution levels and claim offsets (Carbon Market Watch 2011).

(Peters-Stanley & Hamilton 2012, p.31). In terms of project types, renewable energy is a popular choice, along with a boom in afforestation/reforestation credits since 2007. To note some of the less easily imaginable (although common) project types as a tiny sample of their variety, credits could also come from capturing methane from coal mining or industrial pig farming. Replacing household cooking equipment with less polluting types of cookstoves and improving urban public transport are also existing voluntary offset project types (Peters-Stanley and Hamilton 2012).

1.5 Do carbon markets and offsets work?

Whether or not carbon offsetting works depends on what we think the markets and offsets are for, and what measure of success is applied. Some criticise the carbon markets on issues of equity or social justice, with accusations that they are non-democratic (Jamieson 2005; Böhm and Dabhi 2009), an unethical commoditization of the environment (Sandel 2012) or encouraging financial speculation and “sub-prime carbon” (Friends of the Earth 2009). For offsetting more specifically, there are claims that it is morally inappropriate to pay someone else to do good so that the payer can continue to do bad (Böhm & Dabhi 2009, p.16), neo-colonial because pollution happens in the global North while reductions are most often sited in the South (Ma’anit 2006), counter-effective and perverse because it encourages the continuation of pollution by allowing offsetting as a loophole to avoid behaviour change (Lohmann and Sexton 2010). Other criticisms are brought up on matters of technical implementation – although the critics may support carbon markets in principle – to argue that they are impractically complex (Pearce 2008), unnecessarily bureaucratic (Marcu and Dornau 2005), and insufficiently regulated (Parliamentary Office of Science and Technology 2010) with particular problems around the over-allocation of allowances (Shankleman 2011), fraudulent trading (Mason 2011), inappropriate in terms of the types of activities that are eligible (Carbon Market Watch 2011) and unreliable due to malpractice from auditors (Krukowska and Lomax 2009). In particular in relation to the CDM, evaluations have repeatedly concluded that the impact on sustainable development (supposedly central to its purpose) has been negligible (Olsen 2007; Drupp 2011).

For positive evaluations, we can summarise the claims of market supporters: carbon markets allow a more efficient allocation of funds to produce a desired outcome, which

is most usually identified as reducing global GHG emissions – not, as some of their critics would have it, for fixing North/South relations, supporting democracies or making people virtuous. Offsetting is promoted as a way to transfer funds from those who pollute (and can afford to) to those who pollute (but cannot afford not to). It is an opportunity for investment in a lower carbon future based in the flow of technologies and practices to developing countries to assist them in finding more sustainable paths to growth (Ellerman et al. 2010). More specifically, carbon markets have increased the financial value of environmental activities (Hamilton et al. 2010), and put climate change on the political and business agenda (Paterson 2012). For some, carbon markets offer a way to satisfy “humanity's singular impulse to trade” (Ellerman et al. 2010, p.2; Smith 1776), in ways that benefit the environment, in which case markets work, even if the political negotiations to manage them have been failing (Garside 2013). The UN identifies offsetting as having the potential to and having succeeded in providing local as well as global social, environmental and economic benefits (UNFCCC 2012b). This last point is of particular relevance to the CDM, because its regulatory mandate was specifically to provide both GHG emissions reductions *and* sustainable development in the countries where projects are located. For each type of measure there are differences between authors over what should count as the threshold for success. The choice of measure also demarcates differing aims and ideological baselines about the purpose of carbon markets and the practice of offsetting.

Fewer commentaries than might be expected highlight the proportionate reduction in GHG emissions (rather than the absolute quantity) that have been enabled by carbon markets as an answer to this question, although GHG emissions reductions are usually at the top of the list of aims for carbon markets. Indeed, estimations are complex to make and often disputed, but they are important to include to avoid debates on the pros and cons of carbon markets being subsumed entirely into debates about markets in general. They are also almost the only measure that the vast majority of observers agree is relevant, whether or not other goals (SD, equality, profitability, etc.) are also viewed as appropriate evaluations of offsetting. The EU ETS Phase One, which is recognised as being more stringent than the Kyoto targets (although probably less strict than the EU's second attempt, Phase Two, 2008-12), was estimated to have reduced GHG emissions by participating countries by between 2-5% (Heap 2011), although Sandbag, an anti-

CDM but pro-market campaign group estimate the reductions to be as little as 0.3% (Morris and Worthington 2010). To put this into perspective, the UK's Committee on Climate Change said there was a need for reductions of “at least 80%” on 1990 emissions levels by 2050 (Committee on Climate Change 2008). So whether or not carbon markets work on financial, ethical, awareness raising or other grounds, up to this point they appear to have done relatively little to reduce GHG emissions. Market critics take this as yet more proof of fundamental flaws in this approach to managing climate change, their supporters as evidence that they are still in experimental phases and see it as learning processes or weaknesses in their implementation, rather than faults in the concept of a market for carbon and offsets (Lane 2012).

1.6 What are voluntary offset standards?

One set of solutions to the wide-ranging critiques and difficulties outlined above has been the development of a large number of voluntary standards for voluntary and compliance offsets (see Annex 3 for table). As with voluntary standards more generally, voluntary offset standards are argued to facilitate the market by increasing confidence in the commodity and/or its producers (Kindleberger 1983). Their supporters argue that standards improve accountability, transparency and credibility (Watanatada & Mak 2011) in the activities involved in producing offsets, and consequently in the concept of offsetting more broadly. In the case of carbon offsetting, the creation and proliferation of voluntary standards has been seen as a direct response to loopholes in the rules of carbon markets and criticisms of carbon offsets (Lovell et al. 2009). They thus work inside the market, reforming or bolstering some facets of market practice. Understanding their work as one of reform (c.f. Luxemburg 1900) suggests that standards might maintain the stability of the system as a whole (carbon offsetting, or carbon markets, or capitalism, depending on how far we want to telescope out) while altering the practices, information and meanings created about specific parts (locations, times, stages) of this system.

In the earliest days of offsetting few standards existed, and those that did (e.g. Plan Vivo) were not widely used. From the early/mid 2000s, different certification bodies and standards were developed by NGOs (The Gold Standard), auditors (VER+), carbon traders and economists (CCX), national governments (K-VER) and the carbon industry

trade association (VCS) (see Annex 3 for details of standards). As one offset provider was quoted in saying, the situation in the voluntary carbon market went “from the sublime to the ridiculous” (Lovell et al. 2009, p.2363). By April 2009 there were 17 voluntary standards and 96% of voluntary credits transacted adhered to (at least) one of them (Hamilton et al. 2010). These voluntary offset standards differ in their scopes and activities. Most limit the range of project types they can be applied to (e.g. only forestry for CarbonFix or Climate, Community and Biodiversity (CCB) Standard), or the region in which they can be used (only Brazil for Brasil Mata Viva, only developing countries for Plan Vivo), or what they cover in their certification (only GHG emissions reductions by VCS and ACR standards, only sustainability aspects for CCB or Social Carbon). The majority were developed to apply to voluntary offsets but as new compliance markets emerge (for example, in California and Australia) various voluntary standards are being incorporated into them as well (Peters-Stanley & Hamilton 2012). Voluntary offset standards are thus in competition with each other to capture market share in voluntary and compliance markets, and are differentiated by the types of projects they certify and the obligations they demand.

1.7 A research starting point

This introduction gives a brief overview of the politically and technically complex, contested and fast-changing arenas of carbon markets and offsetting as one small part of actions to combat climate change. As with many contemporary environmental activities, these markets are ordered through the concept of carbon. What carbon is in this context, how it can be used, traded, referred to and managed has become taken-for-granted through repeated use. This thesis looks to pick out and explore one particular aspect of carbon markets and set of definitions for carbon through looking at the daily work of voluntary offset standards. They are insiders to carbon markets, designed to facilitate market functioning, but at the same time the existence of voluntary standards suggest concerns about the markets, how they work or perhaps what they do. By looking at offsetting through the activity of voluntary standards, this research framework responds to Dorothy E. Smith's call for research – particularly with regard to organisations – by “examining and explicating how abstractions are put together... to [understand] the social as actually happening and hence as investigatable” (Smith 1992, pp.91–2). What do these standards organisations actually do? How are they *assembled*? What can we

understand about carbon markets and the creation and commodification of offsetting (and, importantly, carbon more generally) from them?

To focus these questions further, the specific aspect of SD in the debates around offsetting is a central subject of this thesis. As described, the CDM was developed with SD as one of its two main aims. Even with the end of obligations under Kyoto in 2012, the EU ETS, in 2013 the largest carbon market in operation, had narrowed its rules to only include new projects from the least developed countries – an clear sign of interest in development as part of offsetting. On the other hand, the positive evaluations of carbon markets described above most usually focus on the GHG emissions reductions not SD impacts. Evaluations of offsetting practices frequently doubt the SD benefits of offset projects. Rather than evaluate physical, social and environmental practices using examples from individual offset sites as others have done (Lederer 2012; Boyd and Goodman 2011; Newell and Bumpus 2012; Gupta et al. 2008) or through evaluating project documentation at an aggregate level (UNFCCC 2011a; 2012a; Drupp 2011), my approach is to consider how SD is included or excluded in the assemblage of offsetting. What does the relationship between offsetting and SD look like? How does it differ between different organisations and practices involved in the offset market? As a definition, SD is also subject to much debate and contestation, so what does SD look like at these locations within offsetting? The rest of this thesis looks to address these questions, providing an ethnographic description of carbon offsetting at one particular point in time, from the offices of two offset standards (Plan Vivo and The Gold Standard).⁷ MacKenzie puts the value of such a study thus:

The existing and planned experiments in changing capitalism's bottom line are heterogeneous, widely diffused worldwide, and involve many aspects... Carbon markets need to become part of a process of 'social learning' (qv Williams, Stewart, & Slack, 2005), in which institutions to mitigate climate change are created, evaluated and reshaped... multiple witnessing and social learning needs to concern not just the overall features of carbon markets, but the crucial 'nuts and bolts' of their construction.

(2009, pp.453–4).

This research forms part of an examination of the construction of a commodity known

⁷ Throughout this thesis, where capitalised The Standard refers to The Gold Standard, whereas standards (non-capitalised) refers to standards more generally, with distinctions made in the text when this is offset standards, voluntary standards, social and environmental standards etc.

as offsetting, as one sub-category of carbon through the nuts and bolts of institutions labelled voluntary standards.

1.8 Thesis Structure

This Introduction has given a summary of some of the key features of offsets and carbon markets to frame the context of this research of carbon. Chapter 2 will lay out the substance and boundaries of the academic discussion that this work aims to contribute to, identifying a gap in the current literature that approaches SD and carbon markets from a sociological perspective, and a crosscutting set of literature on voluntary social and environmental standards. The second half of the chapter is devoted to a discussion of the theoretical framework that I apply, namely Actor Network Theory (ANT), noting important critiques of the approach. I identify the ways in which ANT will be interpreted and adapted for this research, with the inclusion of types of legitimacy. The research aim and research questions are clarified and justified through the process of literature synthesis and review to show how this project will approach the subject of carbon. Chapter 3 outlines the research design and methodology, discussing ontological and epistemological principles and the practical matters of doing ethnographic research.

Chapters 4-7 present the empirical data of the thesis, with each chapter corresponding to a research question. Chapter 4 is a description of two standards organisations to provide more information on these particular cases and detail on the process of standardising offsets. The theoretical framework of ANT is used to identify the achievement of an organisation through assemblages. How standards interact with and rely on other organisations and the importance of SD to each organisation is explained. In Chapter 5 offsetting will be described as an assemblage. The chapter focuses on what can be extrapolated as taken-for-granted about offsetting from within the day-to-day workings of a voluntary standard. This assists in presenting a more detailed exploration of offsetting, showing where and how some activities, technologies and concepts have become intrinsic to these varieties of carbon. Chapter 6 focuses specifically on the position of SD in relation to offsetting. The purpose of the chapter is to explore in detail how SD was articulated and operationalised at the two voluntary offset standards, and contrast multiple ideas of SD and offsetting as they were found to co-exist in the offset

market in 2010-11. The final empirical chapter moves on to frame the work of standards in the context of the lifecycle of an offset from production to consumption, noting what is outside the domain of a voluntary offset standard. In particular, I consider what justifications the standards examined in this research provided to explain why they were involved and incorporated concerns for SD at some stages in the production, trading and consumption of offsets, but not at others.

Chapter 8 summarises the empirical findings, drawing together the research questions that have been posed to consider their wider implications for and about offsetting, voluntary standards and carbon. How carbon as a commodity has been and continues to be enacted will be discussed. The implications of the activities of voluntary standards in this construction, in particular in relation to SD, will be examined. This sheds some light on the potential activities and capacities of voluntary standards more generally. The chapter offers specific policy implications resulting from this research, relating to the role of voluntary standards in offsetting and future relationships between offsetting and SD. Directions for future research and a reflection on the research experience are covered in the Conclusion.

Chapter 2: Literature Review

2.1 Introduction

In addressing the concept of carbon from within the activities of voluntary carbon offset standards this research encompasses influences from a number of fields, most notably Science and Technology Studies (STS), geography and sociology. In order to manage the diversity of the relevant literature, this literature review is divided into four sections. The first section focuses on the empirical field of carbon markets, the second on research about standards. The third and fourth sections focus on the theoretical propositions of Actor Network Theory (ANT) and how it can be developed within a post-ANT interpretation to include the concept of legitimacy in order to best address this case. Within each section parallels and contrasts are drawn with other work from STS to identify and justify the scope of the present project.

The first section of this chapter concerns literature that look at carbon markets from a socio-technical perspective and demonstrates how such an approach forms part of the larger research agenda laid out by Bridge (2011) to investigate carbon. It also confirms the parallels between the new carbon economy literature described in detail and the sociology of markets literature, to show how the current project contributes to this wider body of research. Where voluntary standards have been addressed in the new carbon economy literature this is identified, and a contrast is drawn between new carbon economy approaches to carbon markets and other research that has sought to evaluate voluntary carbon offset standards. To complete this section, the debates over sustainable development (SD) are briefly described to explain the relevance of the concept in evaluating voluntary standards and the activities of offset markets.

The second part of the review synthesises research on voluntary social and environmental standards to show why standards are an actor of interest. Using STS

concepts of trust, quantification, expertise and “technological zones” (Barry 2006) to interrogate the empirical work on voluntary standards highlights where the two fields correspond in their interests. This section will clarify the nature of debates manifest in the literature on voluntary standards, and explain why the current project does not seek to respond to the question of the legitimacy of particular standards or voluntary standards in general.

The final two sections of the review lay out the theoretical framework of this research, describing and defending ANT and post-ANT strategies as useful in answering the questions posed in this project. The theoretical adaptation, incorporating Suchman's (1995) typology of legitimacy into a post-ANT approach, is explained and justified as enabling an exploration of the subtleties of how ideas, practices, actors, gases and people are linked together and kept apart in and by the practices of offsetting. Finally, a comparison is made between the aims of the present project and other operationalisations of legitimacy used to study standards and market actors in other research. This integrates empirical and theoretical comparisons in order to clarify the remit of the current project. The conclusion draws together the themes discussed into four research questions that orient the reader for the following four chapters.

2.2 Research for the carbon age

Newell & Paterson (2010) describe a “carbon economy” as the basis for “climate capitalism.” Mitchell (2009) sees the developments of the twentieth century through the framing of “carbon democracy.” For Mitchell, carbon is a synonym for fossil fuels, for Newell & Paterson it means more precisely the quantification and commodification of GHG emissions (and reductions). Both pieces of work use carbon as a way to unpack what might be meant by democracy or capitalism in their socio-technical, daily assemblages. In doing so, both also offer some insight into what carbon currently is, in its social (as well as chemical) definition. However, in using carbon to explore the enactments of democracy and economy, they do not test the limits of meaning and assumptions that are drawn into carbon. Boyd (2010) investigates the concept of carbon more closely, approaching different aspects of emerging climate governance “not simply as a global project but as an emerging global assemblage of people, practices, organisations, laws, technologies and territories that is taking shape at multiple sites

around the world” (p.523). As with the suggestion from MacKenzie (2009) to look at the “nuts and bolts” of carbon markets, this invites explorations of the particular, daily activities that make up carbon and responses to climate change through happenings and practices (Hand et al. 2005).

Bridge (2011) draws together these and further insights into overview of both “old and new” carbon (i.e. as a fossil fuel and participant in climate change debates). He identifies carbon as “a dominant optic... through which space and social practice are being rewritten” (p.821) and sets out a research agenda to interrogate the “carbon age” (p.829). Centring on carbon recognises and challenges the connections between the different carbons that are enacted (drilled as a liquid, captured as a gas, avoided as a moral civic duty). The present project complements such an approach by taking a specific location of carbon and subjecting its constituents to scrutiny. As noted by Bridge, at the forefront of research on carbon has been in the literature on the “new carbon economy” (2011, p.822) looking at carbon markets, although he criticises this work for not seeking to identify the relationships between carbon as it is articulated and enacted at different points for different purposes (c.f. Barry 2012, p.332). It is in this field that the present research is located, and my response to Bridge's criticisms is to seek out the variations of carbon in ways that can directly contribute to wider debates over the meanings and uses of carbon as an element, market device and discourse.

2.2.1 New carbon economy

The empirical focus of this research contributes to a small but developing body of new carbon economy literature that reflects upon the “the complicated social life of carbon markets” (Stephan & Paterson 2012, p.563). New carbon economy literature emphasises the complex intermingling occurring in the practices, processes and activities of carbon markets. Their development and subsequent re-configurations of carbon markets since the late 1990s have provided opportunities to study debates over definitions, assemblages and meanings that are still under construction and repair. Common in the work is the influence of critical geography (e.g. Castree 2002; Bakker 2003; Larner 2003), STS (e.g. MacKenzie et al. 2007; Callon et al. 2008), and ANT (e.g. Callon 1998; Latour 1992) in positing that carbon markets – and by definition, both carbon and markets – are constructions made up of combinations of social, political, natural and

technical elements.

In this literature, carbon markets are taken as sites worthy of detailed exploration, without assuming they should exist or are effective at what they were intended or are claimed to do. The approach has the flexibility to allow for a range of perspectives on their use and value, from the stridently critical (Lohmann 2005) to the wary but potentially supportive (MacKenzie 2009; Liverman 2010; Lovell & Liverman 2010; Lederer 2012). What draws this literature together – and sets it apart – is that its writers recognise and seek out the creation of relationships filtered, installed, stored or captured in the technical decisions, details, and the taken-for-granted of carbon markets. En masse, the work summarised here aims to trace the trajectories of decisions and non-decisions in their material forms, watching out for how they alter the positions of different actors (states, individuals, companies, trees, gases) relative to each other. For some this is described in terms of post-structural governmentality (Paterson & Stripple 2012; Lovell & Liverman 2009; Lovell & MacKenzie 2011), for others through structural Marxist concepts of value (Lansing 2011), whereas others choose “a more epistemological middle ground” (Bumpus 2011, p.614) that incorporates something of both. Within any of these approaches, there is a significant contrast to the majority of academic writing on carbon markets which tends to segregate politics to the policy process and technical details to matters of (nominally apolitical) evaluation (Paterson & Stripple 2012).

The following sections identify three of the themes highlighted in new carbon economy literature to indicate how each has been addressed previously and how they will be incorporated into the current project. Each theme is also noted to be a concern within sociology of markets and STS literature more widely, assisting to frame the new carbon economy literature and this research within a broader academic domain.

2.2.2 Multiple locations

An important tenet of the new carbon economy literature is to understand the materiality of carbon as it is enacted in particular locations or by specific groups, making the novelty of the research site selected for this project a valuable asset. The purpose is to

understand where differences or conflicts emerge and situations are re-ordered by the enactment of carbon. Carbon has been mapped at developing country offset project sites (Bumpus 2009; Lansing 2011; Boyd & Goodman 2011), followed into the offices of offset intermediaries (Lovell et al. 2009; Lovell & Liverman 2010), accountancy firms (Lovell & MacKenzie 2011), trailed through the New Zealand parliament (Bullock 2012), across the “discursive landscape” of international institutions, governments and lobbyists (Bäckstrand & Lövbrand 2006) and into the historic, cultural and physical backyards of the American mid-west (Phadke 2011). Rather than connecting these locations through new economic sociology analysis of embedded social groupings (c.f. Granovetter 1983; White 1981; Podolny 2001) or institutional structures (c.f. Fligstein 2002), these sites are seen to be linked through processes of economisation (Callon et al. 2007; Çalışkan & Callon 2009; 2010). These sites are described as producing intertwined social, technical and economic meanings in unison, rather than seeing social or political features as a pre-existing structure within which economic agents can be located.

Ascuí & Lovell (2011) point out that carbon accounting occurs in different physical locations within carbon markets. The insight they bring is that this apparently homogeneous activity is undertaken with different tools, needs and intentions in heterogeneous sites. The differentiation between the sorts and purposes of calculation is useful for clarity, separating out the strands of activities and meanings that become bundled up into carbon. Ascuí and Lovell argue that these aims and activities are not currently synchronised or harmonious, and they provide examples of where these framings “collide” in their diverse undertakings of what would appear to be the same activity. They show how the financial accounting of carbon for a company is a significantly different calculation from scientists who look for aggregate rises and falls of gases, for example. Their work emphasises the need to observe and understand the processes of calculating and making carbon at different sites and in the hands of different groups, suggesting that the outputs, while all labelled carbon, may not all be the same in terms of who and what they implicate, affect or ignore. The present research divulges more details of one of these frames, that of voluntary standards who orchestrate and participate in one type of carbon counting, and determine some of the rules about who and what gets counted into and out of offsetting.

2.2.3 Multiple histories

Another hallmark of the new carbon economy literature has been to pay special attention to the stories that are told about the history and ancestry of carbon market activities, scrutinising and taking apart assumed logics of evolution or progression. This is something also seen in sociological approaches to other markets (e.g. Preda 2005b; 2009; Mirowski & Nik-Khah 2007; Mitchell 2007). Lane (2012) traces the construction of an argument of efficiency for a market based mechanism to deal with global GHG emissions rather than alternative policy tools (e.g. taxes). He starts from a Latourian position that the “law of the social world” – in the context of carbon markets, the idea of markets as efficient – is something that has been produced and should be explained, not simply accepted (2012, p.584). Lane's argument is that the difference and hierarchy between command-and-control and market-based mechanisms was a distinction that had to be constructed and constantly attended to by economists and policy makers, rather than something that manifested itself fully formed out of economic data or political ideologies. He identifies who and what participated in the construction of narratives that placed managing GHG emissions into the same frame as earlier policies (sulphur dioxide emissions) and emphasises the work that was required to make these examples seem the same enough to serve in debates and decision-making. Lane's work presents a more complex, contested and unstable account of how carbon markets came to be related to, and taken as examples of, efficiency. With relevance to the focus of this research, his exploration of efficiency in carbon markets invites the question – as noted in the Introduction – of 'efficient at doing what?' The answer assumed in the history that he takes apart and reconstructs focuses on GHG emissions reductions. The present research opens out this question to consider other varieties of carbon and offsetting through observations of the work of voluntary standards and the discourses of others active in carbon markets.

Other examples thickening the description of carbon markets draw in not-for-profit activities and ideals of SD as well as GHG emissions reductions, in ways that are empirically relevant to this project. Bumpus and Liverman (2008) highlight the role of NGOs in starting many of the first offset companies and developing the idea of voluntary offsetting. They argue that there was an aid and development emphasis in earlier generations of voluntary offset project activities and buyer motivations. This

version of events is found in the detailed description of the development of an offset forestry project in Mexico in the late 1990s by (Brown & Corbera 2003). Private project developers worked in partnership with local and international NGOs, government (host and funders) and Mexican villagers in “experiments” (c.f. Callon 2009) in community development. Their activities were adapted and re-labelled to become a carbon offsetting project. This narrative of a focus on SD and community development was something that was seen to differentiate the voluntary offset market from the CDM into the mid-late 2000s (Lovell & Liverman 2010). However, in other work the same authors describe how intermediaries within the voluntary market at times prefer to identify themselves as an innovative commercial niche for the broader carbon regime (Lovell & Liverman 2009) rather than tell a history that might separate them from the efficient (in terms of GHG reductions) and overwhelmingly profit-driven activities of the compliance market. The shifting emphasis in these stories indicates the potentially multiple goals of offsetting, and is an example of the different methods of constructing credibility that participants can produce (c.f. Shapin 1995a).

The present research identifies the benefit of opening up histories and accounts, noting taken-for-granted “facticity” and attempting to sketch its construction. The suggestion that the voluntary market *is* “more holistically about sustainable development and not just carbon” compared to the CDM, as was argued by Lovell and Liverman (2009, p.269) is of direct relevance. Their argument contrasts voluntary/“holistic sustainable development” with CDM/“neoliberal rationality” activities to distinguish between the two markets, which has been suggested as a false dichotomy by Newell & Bumpus (2012). Instead they argue that SD has become a fetishised part of carbon offsetting in the same way as GHG emissions reductions (2012, p.63). The present research adds to this discussion with new empirical data covering 2010-11, with the implications drawn out in Chapter 8.

2.2.4 Commensurability, measurement and quantification

Thematic attention is paid to the importance of investigating the processes of quantifying, measuring and commensurating in the new carbon economy literature. This ties the field into broader sociological traditions that locate metrology and precision (Schaffer 1999; Mallard 1998; O'Connell 1993), categorisation and classification

(Bowker & Star 1999; Thévenot 2009), commensuration (Espeland & Stevens 1998), finitism and the work that must be done to decide “what counts” (Miller 1998; Hatherly et al. 2005; Espeland & Stevens 2008; Porter 1995), along with auditing and its related rituals of reliability, validity and expertise (Power 1996) as ideas and practices that need to be scrutinised for their social and political, as well as technical, intentions and implications (see section 2.3.5).

In the new carbon economy literature, Lovell & MacKenzie (2011) focused on the work of accountants as relevant but somewhat reluctant “managers of carbon” (p.705). Through their requirements of commensurability, accountants are identified as participating in the intentional and unintentional “rendering technical” (Li 2007) of some of the political decision-making within carbon markets. Lansing (2011) traces these techniques onto the sites of offset projects to argue how cost-benefit analyses produce neoliberal outcomes, an approach that takes market devices rather than people as a central focus (c.f. Preda 2006; MacKenzie 2008; Callon et al. 2007). In Lansing's account, the shift in calculative framings negatively alters the value of land and traditional practices of cultivation. Boyd & Salzman (2011) offer a contrasting view. They suggest that the calculations of buyers – in particular governments – use carbon standards as a way to diversify the trading currencies available. In this account, carbon calculations do not play out in the rational-choice model supposed by neoliberal economic theory. Instead, governments-as-consumers intentionally make offsets incommensurable by their choices to purchase credits with SD credentials. This intriguing suggestion of intentional incommensurability created by standards locates this research at a relevant site. Paying and drawing attention not only to who or what gets measured, but also who/what does not incorporates these themes throughout the current project. However, rather than setting up a debate over the commensurability of different types of carbon, this research will use a post-ANT approach (see below) to suggest that variation does not have to be viewed as a source of conflict, but can be understood as integrated and constituent through co-existent enactments of carbon.

2.2.5 Voluntary carbon offset standards

The activities of voluntary standards within offsetting have been mentioned within the new carbon economy approach, but have not been a central topic for research. Where

standards have been mentioned in this literature, understandings of their role, purpose and impacts have been significantly different. For Lederer (2012), voluntary offset standards (and indeed, the entire voluntary market) are only in the “shadows” (p.9) of state-level, compliance market decisions. In other work, there has been a focus on the groups involved in enacting carbon markets, mirroring a similar interest in sociology of markets literature (e.g. Preda 2005a; 2005b; 2007a; MacKenzie & Hardie 2007). The category of non-nation state actors (NNSA) and their roles in climate governance are invoked as part of, but also potentially in contrast to and influential over the actions of nation-states (Okereke et al. 2009; Schroeder & Lovell 2012). While voluntary standards fit into the category of NNSA, the research mentioned does not focus on them, instead engaging with NGOs, companies and sub-state level public activities.

In contrast, Bulkeley & Newell (2010) suggest that voluntary offset standards are valuable for attention as “innovative forms of private governance” within carbon markets. Bernstein et al. (2010) also selected voluntary standards as a significant group for discussion within international carbon market negotiations. In their opinion, voluntary standards participate in the regulation and stabilisation of offset markets, as well as agenda setting for climate governance more broadly by leading on (and locking-in) technical details and moral or ethical values. Voluntary standards may be part of raising the standard of offsetting to include more reliability, accountability and SD benefits within voluntary offsetting in particular (MacKenzie 2009; Lovell et al. 2009; Bernstein et al. 2010; Boyd & Salzman 2011), whether as long-arms of the state, or independently.

A contrasting conceptualization within the new carbon economy literature identifies voluntary standards as part of “the 'tyranny' of certification for socio-environmental services” (Boyd & Goodman 2011, p.843). Paterson (2009), mentioning The Gold Standard in particular, contends that voluntary standards form part of the “overarching projects of ‘global neoliberal governance’ (or Empire, if you prefer)... strategies by powerful global forces to overcome, co-opt, or destroy opposition to its power” (p.250). Paterson charges voluntary offset standards with incorporating the critiques of those who are against the whole concept of a carbon market in ways that put market critics “in the awkward position of shaping the form of something we may prefer didn't exist”

(p.249). Despite the views offered, however, none of the research mentioned was designed to investigate the activities of voluntary standards. Furthermore, the contrasting arguments on the impact and roles of standards outlined above are a microcosmic, carbon-specific version of a set of literature that exists on voluntary social and environmental standards outwith carbon offset markets (see section 2.3).

2.2.6 Evaluations of voluntary carbon offset standards

The next section moves away from the new carbon economy work to give an overview of the available literature on voluntary carbon offset standards. This is important to recognise where The Gold Standard has already been discussed, and in particular to note how it is used by the majority of research as a short-hand for a form of SD-related offsetting. The research mentioned either to compare voluntary standards or to use standards to evaluate the UN's Clean Development Mechanism (CDM). This type of research is aimed at determining which set of rules is articulating offsetting best, rather than – in the style of new carbon economy literature – to open out explorations of what best might mean, and how such definitions might be constructed and enacted.

One recurrent practice is to compare and evaluate different standard rules against specific criteria. Galt (2010) preferred The Gold Standard to other voluntary offset standards on grounds of gender-sensitivity. Kollmuss et al. (2008) ranked The Gold Standard as “the standard with the most stringent quality criteria,” stating it was an improvement on the CDM in terms of involving local stakeholders and monitoring local project impacts (2008, p.57). Much research focuses on documenting and evaluating the CDM, as a set of rules that applied to a vastly greater market than voluntary offset standards (see Olsen 2007 for overview). Some of these evaluations make use of The Gold Standard, proposing it as a proxy for measuring SD benefits. Sterk et al. (2009) analysed the SD requirements of fifteen countries under the CDM using The Gold Standard rules as the measure for evaluation. Gold Standard rules and certified projects have also been used as a dummy variable to compare CDM project SD impacts, including in UNFCCC publications (e.g. UNFCCC 2012a). Academics suggest that Gold Standard accredited projects “slightly outperform comparable [CDM] projects, although not unequivocally” (Nussbaumer 2009; Drupp 2011). The UN reports that Gold Standard and non-Gold Standard CDM projects make the same number of claims

to SD benefits on average – although only Gold Standard projects provide any monitoring or evidence for these claims (UNFCCC 2012a, p.22). These macro studies are forced to rely only on the a priori promises made by project developers under the CDM, not on any evaluations (independent or otherwise) of project outcomes when they compare data between Gold Standard proxies and CDM projects (Drupp 2011). Muller (2007; 2008) takes voluntary labels (including The Gold Standard) as a proposition for improving the SD benefits accruing from CDM activities, finding them to be a plausible but weaker solution than imposing a tax on offset project profits and using the money to fund development activities. Several case study approaches to evaluating CDM outcomes in terms of SD critique the methodology of comparing Standard rules with CDM projects, pointing out that the lack of monitoring required on CDM projects in terms of SD is a significant obstacle to valid research findings (Gupta et al. 2008).

Levin et al. (2009)⁸ also focus on the work of The Gold Standard in the compliance CDM market. Their approach contrasts to other evaluations of offset standards in that they discuss how the rules of both legislated and voluntary standards may shape and set the boundaries of what offsetting means. In their analysis these boundaries are flexible, and The Gold Standard is not an independent variable but an influential causal mechanism that can change the activities of the wider market. They define The Standard's aim as “to increase the legitimacy and support of the intergovernmental or public policy agreement, entrenching rather than taking away from state-centred processes” (p.780), in particular to assist in achieving SD. They suggest that The Standard looks to be “symbiotic” with inter-governmental actions to develop carbon offsetting (p.779), overcoming and improving weaknesses in inter-governmental agreements without seeking to undermine state-led activities. This claim is an alternative reading of the interrelations between voluntary carbon offset standards, governments and NGOs compared to the characterisations of Paterson (2009) or Lederer (2012). Paterson (2009) saw voluntary social and environmental standards as parasitic on the actions of NGOs and others market critics. Lederer (2012) gave standards little autonomy in their interactions with states, and associated state-led activity with a capacity to produce outcomes. In contrast, the Non-State Driven

⁸ The Gold Standard is also discussed in Auld et al. (2009) but Levin et al. (2009) provides a more elaborated development of the same idea by the same group of scholars.

Mechanism (NSDM) scholars suggest standards have the capacity to “succeed where states could not” (Bernstein 2004, p.162).

Unlike the comparative studies of standards, a judgement on whether or not a particular standard produces a good or better sort of offset is not the objective in the current project. Rather than adjudicate between sets of rules, in this work I want to pay more attention to the active, daily construction of doing offsetting, and therefore, within this small case, of doing carbon. As with Levin et al. (2009), this research emphasises an understanding of offset standards and carbon markets as a constructed and continuous set of interacting processes with boundaries that may not be fixed. Unlike the perspective of the NSDM school, however, the aims and benefits of The Gold Standard form part of the object of study rather than being assumed. The NSDM literature will be discussed again in more detail below.

2.2.7 Sustainable development

All of the evaluative studies mentioned in the previous section agree that the flexibility and disputed nature of SD makes their research objectives more complex (Kollmuss 2008; Gupta et al. 2008; Muller 2008). Nevertheless, all make use of it because of its appearance in the Kyoto Protocol and CDM rules, and surmise that overall, SD can be a good and plausible objective for offsetting. Across this literature, The Gold Standard is broadly and generically aligned with (positive) ideas of SD in offsetting, except by Muller who critiques The Standard, saying the “short-term and local focus” in its rules (2007, p.3204) makes it an inappropriate measure of SD. However, as has already been mentioned in the Introduction to this thesis (and will be examined in more detail in Chapter 6), the assertion that SD is relevant to offsetting is not shared by all of those observing or participating in carbon markets. The ways in which the concept of SD is defined, used or ignored within offsetting practices and in particular by the selected voluntary standards is one of the topics this research seeks to explore. This section gives a brief overview of how SD has been debated in academic contexts before it is discussed in relation to voluntary social and environmental standards in the following section.

In the literature on SD, it is typically presented as including social, economic and

environmental features both in the present and for “future generations” (Brundtland Commission 1987), although the relative weighting and definitions for each category can be “remarkably” different (Miller 2005, p.428), with hundreds of different interpretations (Banerjee 2003). Implicit in the promotion of SD – and certainly when used in the promotion of carbon markets and voluntary standards (Watanatada & Mak 2011) – is a belief that capitalist modes of development can be environmentally and socially sustainable, even if this may mean a significantly different model of both capitalism and democracy than the current status quo (Sneddon et al. 2006). SD has been described as coming in strong and weak versions, depending on how much weight environmental and social matters are given vis-a-vis economic development (Owens 1997). While some argue that SD is part of an “empowering tale” (Sneddon et al. 2006, p.260) for modelling and progressing to an environmentally sensitive and fairer sharing of the dividends of future growth, others maintain it is inevitably “colonial thought... [with] resultant disempowering effects” (Banerjee 2003, p.146). Critics such as Banerjee argue the concept entails little genuine consideration for Nature/the environment, or those who are kept poor by capitalist systems of distribution. Given the variety of SD described in the literature it will be of no surprise to find varying definitions within offsetting. However, rather than entering into a critique of SD, the present project looks to describe how it is incorporated within offsetting as ways to identify the assemblage of carbon.

The next part of this literature review extends out from the empirical field of carbon markets to demonstrate how this project intersects with research on standards. Concern for the detail of case studies and understanding of the material implications of commensuration and quantification are shown to be shared points of interest with the new carbon economy literature. Cases where SD has been explored within the context of standards are discussed, and broader conceptual themes central to STS are explained to demonstrate how they are incorporated and how they have been delimited in this research.

2.3 Interrogating voluntary standards

Although voluntary standards have not been a central focus for research within the new carbon economy literature, they have been identified elsewhere as important locations

for research. The first part of this section will explain the definition of voluntary social and environmental standards and demonstrate that the current case concerns such standards. Then an argument is constructed for why standards are an advantageous site of research for the concerns of this project – namely, exploring the assemblage of carbon within carbon offset markets. This is followed by a deeper interrogation of the literature on voluntary standards using concepts from STS. The relevance of trust, quantification, expertise and “technological zones” (Barry 2006) is explained, and where these concepts have been incorporated into the literature on standards this is noted, as well as cases where parallel discussions have taken place. The synthesis of the two bodies of work will be used to establish and delimit the focus of this research. A further discussion of STS and voluntary standards literature focused on the concept of legitimacy is found at the end of this chapter (section 2.5.4). This allows for a clarification of the difference between engagements of the concept in other work – to describe specific actors – and how legitimacy will be operationalised in this research, as a theoretical development of ANT, to describe the links in assemblages.

2.3.1 Voluntary social and environmental standards

Voluntary standards have been identified as key features of contemporary politics, influential in their activities across various markets and policy areas as part of the turn from government to governance since the 1990s (Busch 2011; Bernstein 2002; Barry 2001; Higgins & Hallström 2007). As Timmermans & Epstein (2010) summarise it: “somewhere between glorified globalisation and dark dehumanisation, each standard achieves some small or large transformation of an existing social order” (p.83). The academic discussion has been intense over the impact of voluntary social⁹ and environmental standards in particular, of which there were over 400 in operation by 2011 (Watanatada & Mak 2011, p.9). As noted above, most such standards operationalise a version of SD to describe their aims. The standards discussed in this research fall into this category as there is no regulatory obligation on consumers or producers to make use of voluntary offset standards, and the standards that have been selected (The Gold Standard and Plan Vivo) both make explicit claims about the social and environmental conditions (and explicit reference to SD) under which offsets should

⁹ Social is being used in this research to refer to fair, just, ethical and sustainable certification systems where the attention of the standard is on the social (including economic and political) benefits to producers.

be produced.

Lovell et al. (2009) suggested that the non-tangible nature and the lack of material benefits deriving from offsets make them different from most cases where social and environmental standards have been studied, although they conclude that the literature on ethical consumption and standards is still relevant for application to the offset case. I do not see the lack of tangibility or material benefits for consumers as problematic in terms of drawing on voluntary standards literature when discussing carbon offset standards. As indicated from Timmermans & Epstein's (2010) quote, what is interesting about the involvement of a voluntary social and environmental standard is that it alters the perceived attributes of a commodity, whether or not the object in question also has features that are tangible. What might set the offset case apart from other voluntary standards is the relative newness of the identification of certain actions/materials as a commodity in the form of an offset. It is the commodity aspect of the social identity (Appadurai 1986) – the wobbling between meaningful thing-ness as an offset and being only a random collection of multiple objects, in Heidegger's terms (Latour 2004b, pp.233-5) – that is perhaps less confirmed than with many other cases. Nevertheless, carbon has been commodified with the establishment of carbon markets.

2.3.2 Standards as locations of assemblage

From differing perspectives, the literature on commensuration and standards identify standard-making as an important site of sociological analysis to justify them as a location for research (Bowker & Star 1999; Barry 2001; 2006; Whyte & Thompson 2010; Webster & Eriksson 2008; Thévenot 2009). However, this “market device” has not been closely examined in the sociology of markets literature (c.f. Çalışkan & Callon 2010, p.8-9) or the new carbon economy field. A claim made for standards is that they have ontological as well as epistemological influence. Webster & Eriksson (2008) argued that standard-making in stem cell research meant not only deciding an epistemological framework through the selection of measures and proxies, but also took on an important but not always intentional role as an ordering device to determine what was or could be included in stem cell research possibilities. Producing a standard in their case was an act of “epistemological and... ontological collectivism” (Webster & Eriksson 2008, p.100). In their example, the result was a unitary (if unstable) set of

definitions of what would be inside and outside stem cell research. Barry (2006) suggests a similar potential from voluntary standards as “zones of qualification” that “govern the quality of objects or practices which may exist within a particular domain” (p.241). Of specific relevance here, Auld et al. (2007) make these claims in relation to The Gold Standard. In the early days of the carbon markets, they asserted that “to a greater extent than other cases [of voluntary social and environmental standards in forest wood products, fisheries and coffee]... the good itself under production [offsets] is very closely linked to the NSMD [The Gold Standard] for its creation and intelligibility” (p.22). Other research on voluntary environmental and social standards (Goodman 2004; Ponte 2012) also strongly suggests that they are a location of framing and assembling for the commodity in question, even if they are not the only source of authority within a market.

However, such claims should come with evidence of the impact of standards, demonstrating the veracity of the arguments. Webster & Eriksson (2008) offer some for their case, but other work has suggested that standards do not always live up to such standardising, dominating aspirations (Hanseth et al. 2006). Barry (2001) suggests that standards and the engagement of new actors may create new arenas of politics, or they may simply repeat existing codings of activities (Barry 1999; 2001, c.f. Callon 2004). Cashore et al. (2007) do not substantiate their claims for the influence of The Gold Standard. The present project operates under the assumption that standards provide at least one opportunity to examine an assemblage of a commodity. Whether the standard's enactments of offsets are the most influential on market practices is not of central concern: as with the work of Mol (2002; 2013) or Barry (2001), the assemblages they offer can be one of many and still be valid subjects for research. As a result, the present project does not attempt to measure the influence of standards in defining offsetting within the market or try to substantiate Auld et al.'s (2009) claims that The Gold Standard has been formative in the creation of carbon offsets. On the other hand, given the use of voluntary standards (and in particular The Gold Standard) as “information infrastructure” (Bowker & Star 1999) to compare different types carbon offsetting described above, a detailed description of what The Gold Standard offers can provide the basis for a critical evaluation of this literature. For the present purpose, the standards are useful because they offer locations from which to pursue at least some of the

enactments of carbon as it is being articulated in the form of offsetting.

2.3.3 Standards and STS

In order to conduct this examination of carbon within the remit of an STS project, it is important to note that the voluntary, consumer oriented nature of such standards and the explicitly normative SD goals of their work make them relevant but special cases within STS. Reflections on expertise (valued knowledge on a particular topic) (Collins & Evans 2002; Turner 2001; 2012; Wynne 1996) and authority (the power to take decisions) (Shapin 1995c; 2004), both of which in turn require legitimacy (socially determined appropriateness) (Preda 2005a; Jasanoff 2005) and the use of quantification and auditing (Porter 1996; Power 1996; 1999) are pertinent to exploring the features of voluntary standards, and the cases presented in this research.

The following sections start with explanations of concepts as developed within STS, which are then demonstrated as relevant in discussions of voluntary standards. How each concept will be adopted or where specific debates will be avoided in the present research is explained. Firstly, investigations of the “moral life of standards” (Busch 2000) and the topics of quantification and auditing are shown to be of central relevance to understanding the ways that carbon is assembled through offsetting. Attempting to define whether or not voluntary standards in general (or these ones in particular) should be considered as appropriate or legitimate is noted to be a matter of fierce debate. Mapping the conflict in terms of definitions of expertise clarifies the grounds of the debate, but also the difficulties in operationalising Turner's (2001) normative definition of expertise. Describing this and other work on expertise and standards supports the choice taken in this research not to enter directly into these discussions. As an alternative, the second section on expertise provides examples of valid, intriguing descriptions of co-existent but incompatible framings of experts and standards (Wynne 2003; Mitchell 2002; Dunn 2008). It is argued that these are comparable to the aim of the present work to look at multiplicity in the assemblage(s) of carbon without relating it to the appropriateness of the designation of expertise for an actor. The third section on expertise identifies how examining the aims of standards can be a useful avenue for exploring articulations of their subject of expertise (in this case; carbon). Finally, diverse approaches that highlight the limits of activities of standards (Fridell 2009) and

the boundaries of expertise (Turner 2005) are brought together by considering them in terms of the ends of “technological zones” (Barry 2006), offering a useful topological location for scrutiny in the present study.

2.3.4 Trust and the moral life of standards

One of the founding tenets of STS has been to expose and examine the social and moral nature of scientific and technical work, and the current project is no exception. Shapin and Schaffer emphasised the quality of trust in the creation of knowledge (and claims to expertise) built into the foundations of Enlightenment conceptions of science (1985). Further STS work has demonstrated the existence of other norms – such as Victorian conceptions of moral virtue and patriarchy – embedded in the transmission of science (Schaffer 1999; Haraway 1997) and other research has extended similar claims to standards (Bowker & Star 1999; Thévenot 2009; Timmermans & Epstein 2010).

It is worth noting that in applying the concerns of the moral stance of science and technical endeavour in relation to voluntary social and environmental standards, their case is somewhat particular. By definition, voluntary social and environmental standards make explicit moral claims and have enunciated normative projects. This sets them apart from many other standards and much of the sociological literature discussing standards and science which seeks to point out the moral positioning of activities that claim to be only technical, “common sense” (Power 1996, p.295) or neutral (Porter 1995, p.24-32; c.f. Timmermans & Epstein 2010). Some have argued that voluntary social and environmental standards succeed in offering at least a “symbolic” (Fridell 2006, p.21) challenge to the norms of maximising choice and efficiency above social justice or equity (Jaffee & Howard 2010; Barrett-Brown 1993, quoted in Fridell 2006, p.11). But whether or not they are viewed to succeed, they intentionally set out to educate people about the consequences of their activities through “the insertion of moralized meaning” (Goodman 2004, p.901) into consumption decisions, not through claiming neutrality towards ethical values.

Nevertheless, the strongly critical gaze of some research on voluntary standards (Dolan 2010, Guthman 2007, Dunn 2008) characterise voluntary social and environmental standards as not fully disclosing their moral(ising) nature. Voluntary social and

environmental standards can have a “moral life” (Busch 2000) beyond their identified targets which can shape the progression of political debates and the relationships between those (human and non-human) that are recognised as relevant (Barry 2006, p.249). This makes them worthy of the same scrutiny as standards that make no such moral claims. In this research, attention is paid to when moral or normative claims are made explicit. In keeping with a symmetrical STS approach, this research also discusses where moral claims were not made, and investigates where norms were transferred or transformed through technical devices and behaviours.

2.3.5 Trust, authority and quantification

Section 2.2.4 above described how themes of commensuration, measurement and quantification are identified as significant in carbon markets. In relation to this project, the site of a standard is a key location of quantification and a conduit for auditing within carbon offsetting. An STS approach to these topics draws attention to the purpose and impact of such actions, with reference to the nature and role of trust, and how power or authority can be shifted or eroded. Recognising the impact of these technical practices has been a contribution of the STS literature, and one that can be applied in this research to the case of voluntary carbon offset standards.

Porter (1995) and Power (1999) sketched out how “the enforcement of scepticism and distrust” (Shapin 1995, p.400) shape economic spheres. Porter (1995), examining across both scientific and economic activities, pointed to the quantification of a whole range of activities as ways of attempting to replace the need for trust and social contexts to knowledge: “quantification is a technology of distance... [a] reliance on numbers and quantitative manipulation minimizes the need for intimate knowledge and personal trust” (1995, p.ix). Porter argued that shifting ways of trusting into quantified spheres does not reduce subjectivity or the potential for pernicious activities, it merely alters where and by whom they can be conducted. His central concern was not that scientific activity would falter due to a lack of trust (c.f. Shapin 2004), but that quantification, by changing how we understand what and whom to trust, alters the relationships between individuals and groups. In this he agrees with Shapin that quantification alters hierarchies of authority and credibility (Shapin 1995c; 2004). In a similar vein, Power's (1999) work focused this concern for the shifting (or potentially ebbing) of trust and

authority onto auditing in particular. His addition is that the practices of quantification that are enacted through auditing change the activities taking place towards ones that may “have been created for the purpose of being audited and little else” (p.295). Thus not only are relationships between groups altered, but the activities that they undertake are also subject to change as a consequence of processes of oversight and inspection. These new situations rely upon discussions of quality as a measurable, auditable and ostensibly objective characteristic, but the practices of auditing and quantification cannot in themselves produce a definition of what should be considered as quality (Higgins & Hallstrom 2007, p.697; Power 1999, p.300).

The influence of the work of Power, Porter and the relevance of trust and authority can be clearly seen in the literature on voluntary standards. Voluntary social and environmental standards are, in themselves, cases of quantificatory devices that create situations of “vigilance” (Shapin 1995c), but still indispensably reliant on trust (Busch 2011). Consumer trust in producer activities is replaced with audits, data and seals of approval from other (nevertheless, necessarily trusted) sources: a designation of authority. However, research on voluntary standards also indicates subtleties and contrasts to the propositions on the nature and consequences of auditing and quantification. Loconto (2010) presents a case where different standards organisations upheld different definitions and performances of sustainability in the Tanzanian tea industry. Discussing the implementation of the Fairtrade label, her research supported Power's suggestion that standards and their requisite auditing can create bureaucratic activity to be audited rather than further benefits (1999). However, although the standards organisations shared the same aim of ensuring sustainable tea production, her analysis suggested some standards were being enacted to describe activities that were already undertaken, but were being re-labelled within the discourses of sustainability and ethical production. This suggested a counter-example to Porter's (1995) claims of shifting control and authority: in this case, the standard allowed large producers to maintain their dominance of global value chains. In her case, trust in companies was replaced by legitimacy being granted to labelling schemes, but there was no change to the activities that are being undertaken or the ultimate authority of the firms.

Whether the practices of standards actively erode trust – as argued by Shapin (2004) – is

beyond the remit of this project. Nevertheless, by examining standards this thesis looks in some detail at the processes and manifestations of quantification and auditing in the formation of carbon as an offset. This allows for the possibility of considering where the practice of quantification perhaps “displaces, rather than solves, modernity's problem with trust” (Hatherly et al. 2005, p.4). Loconto's (2010) contribution to discussions of standards and auditing suggest an important role for research that compares the detail of rules and implementation of standards which, nominally, standardise the same thing to the same end goal. In her research, she found this was not necessarily the case. Chapters 4 and 6 attend to how different standards (and other actors in markets) may create different assemblages of SD through differences in their rules and procedures, auditing and quantification.

2.3.6 Experts and expertise

Beyond the identification of specific activities such as auditing or quantification, a further STS contribution has been to recognise the importance of how expertise is attributed as something worthy of sociological scrutiny. In relation to voluntary standards (a group that assert their expertise on the matter of how to do whatever it is they accredit) whether or not they are legitimate or appropriate experts is a source of major contention within the literature on standards. Who counts as an expert and who should decide who counts as an expert have been shown to be complex and contested issues by STS scholars, with some scholars seeking to create normative theories (Turner 2001; Collins & Evans 2002) to answer these questions. Others have responded with descriptive cases to challenge the possibility that there could be one appropriate answer, and to suggest alternative approaches to examining experts which draw attention to the co-creation of their field of expertise (e.g. Mitchell 2002; Wynne 1996; Winickoff et al. 2005; Jasanoff 2005; see Jasanoff 2003, p.393-4). The following four sections use discussions of expertise as a springboard to complete the discussion of STS and voluntary standards literature. The first section outlines the debate over voluntary standards. Normative theories of expertise from STS are helpful to identify the nature of the ongoing academic disputes and to explain why this project will not pose the question of whether the standards under study – or voluntary standards in general – are legitimate experts. The second section considers alternative uses of expertise from STS to demonstrate how and why research can engage with experts without seeking to

evaluate them or to focus primarily on the construction of their expertise. The third section looks at how the aims of experts (and standards) are described in academic literature, as this pertains to the types of assemblages of carbon can be formed in the case of voluntary carbon offset standards. The fourth section combines suggestions from expertise studies (Turner 2012) with ideas of voluntary standards (Fridell 2009; Barry 2006) to identify particular boundaries as intriguing areas of study in order to find out more about the commodity of carbon. The matter of attributing expertise brings up the question of who is a legitimate expert in cases where some of those who claim expertise might be viewed by others to be inappropriate. In these discussions, the concern is for the legitimacy of specific organisation or the institution of standards. This is different from how legitimacy is introduced in the present study to look at the assemblage of carbon. The operationalisation of legitimacy in this research will be described as part of the theoretical framework in the final section of this chapter with a further comment on how this distinguishes this research from other work in STS and the voluntary standards literature.

The identification of expertise as a social decision is widely recognised within STS (Turner 2001; Shapin 1995c; Jasanoff 2005; Collins & Evans 2002; Wynne 1996), but the implications drawn by different writers are distinct. Turner (2001; 2012) focuses on the institutional structures of expertise selection. He argues that in a democracy, scientific experts should be designated through channels that emphasise the general public as the party who determine whether a group is legitimate in their authority (2001, p.129). For Shapin, institutional structures cannot create the required trust for experts, indeed he argues that attempts to build trust through institutions may be counterproductive by increasing a sense of being under surveillance, and thus degrading the individual moral imperative (1995c). Whether or not the individuals engaged in voluntary environmental and social standards are of upstanding moral character has not been widely examined.¹⁰ As argued by Porter (1995), quantificatory devices (such as standards) are specifically designed to avoid the need for such assessments. However, whether the institutional structure of voluntary standards represent a democratically legitimate and appropriate form of designating expertise has been the subject of

¹⁰ Although see Fridell (2009) for some discussion of the relevance of ethical aims of individuals and groups at points of production and sale.

vehement contestations.

Turner argues that legitimate experts are those who have their position “validated by public achievements” - defined as Type I (2001, p.140). Other types of experts are those who have the following of a small group (cult leaders: Type II), those who have convinced individuals who are in a position to judge directly the outcomes of their actions (massage therapists: Type III), those who address the public in order to defend a position of authority (he suggests economists: Type IV), and those who address only institutions of the state, not the public directly (bureaucrats: Type V) (Turner 2001, p.129-132). These others should not have the same status in a democracy as Type I experts.¹¹

Turner's framework is useful for interpreting debates over voluntary social and environmental standards. For some theorists, voluntary social and environmental standards are welcomed as Non-State Market Driven (NSMD) mechanisms (Cashore et al. 2004) that “provide political opportunities for change” (King & Pearce 2010, p.254), and “encourag[e] innovation” (p.256). For others, they form part of a Tripartite Standards Regime (TSR) (Loconto & Busch 2010), a “Hydra-like form” (Busch 2011, p.68) of neoliberal governance that cedes democratic control of decision-making in “Orwellian” and “sinister” ways (p.71). The cleavages described mirror and expand on the comments made above in relation to voluntary standards for carbon offsets. The positions can expressed as a difference in opinion over the legitimacy of voluntary standards in Turner's (2001) terms of how they shift the locus of collective decision-making. However, the literature on voluntary standards indicates difficulties that arise in trying to operationalise Turner's normative attempt to identify appropriate experts.

For those who perceive the “dark dehumanisation” of voluntary standards, the significant issue is that matters of social justice, the environment and public accountability become “shackled... to the changing whims of the consumer market”

¹¹ Others have disputed this audience-based definition of expertise and offer an alternative normative theory: for the special case of science, levels of political influence should be based on an individual or group's unique access to knowledge not the feelings of the general public who, by definition, are not knowledgeable about specific scientific debates (Collins & Evans 2002; 2003). Jasanoff (2003) criticises Collins & Evans' position by pointing to the fundamental argument that “the presumption in democratic societies is that all decisions should be as far as possible public; it is the exceptions that require justification” (p.397).

(Goodman 2004, p.909). Voluntary social and environmental standards, it is argued, encourage a situation where consumption becomes the dominant means of personal expression. This “obscure[s] possible paths of action outside of the market” – what Guthman termed “the politics of no alternative” (Guthman 2007, p.473). Voluntary social and environmental standards are argued to locate the power to decide on social and environmental matters “at the site of each cash register” (Guthman 2007, p.472) and most commonly in the global North, when the sites of much of the production of these standardised goods and services are in the global South (c.f. Dolan 2010). They exclude those who cannot afford the price premium that socially or environmentally 'better' commodities attain, and also leave out those potentially desirous of, but unable to meet, the minimum quality requirements in materials or extra effort and money required to certify their activities as producers (Busch 2011, p.58; Schaeffer 1993).

In striking contrast, the liberal environmentalist (Bernstein 2002) literature casts voluntary environmental and social standards (in their terms: NSDM) as positive as they “embed social and environmental norms in the global marketplace” (Bernstein & Cashore 2007, p.348), with the potential to “ratchet up” global environmental and social standards (Cashore et al. 2007). They rely on the premise that the ends (sustainable development) and the means (consumption) that are found within the domain of voluntary social and environmental standards are broadly acceptable. The NSDM literature does not entirely ignore the question of whether standards should have authority, but they view choices in consumption as an adequate forum for decision-making because standards are assumed to act “sympiotically” (Levin et al. 2009) alongside the activities of governments, NGOs, “community stakeholders” (Bernstein & Cashore 2007, p.348) and “civil society” (p.353). It is thus acceptable and desirable that such standards look to become “recognised as authoritative in the sector or policy domain in question” (Auld et al. 2009, p.7).

Turner's concerns about the role of experts within democratic systems are reflected in the descriptions of Guthman (2007), Dolan (2010) and Bernstein (2002), but with contrasting conclusions. The conflict demonstrates the practical complexity of determining how an audience of the public might be acceptably – by Turner's (2001) standards – constituted. Guthman and Dolan assert that standards place the pivotal role

of audience on those who participate as producers or consumers, leaving others (the majority) out – voluntary standards are thus Type II experts. Alternatively, Bernstein views voluntary standards as manifestations of civil society input, proclaiming their democratic potential precisely because they can reflect the designation of expertise from a wider public. In this reading, voluntary standards have the potential to be Type I experts, although this must be produced through “vectors of credibility” where standards work with other groups (NGOs etc.) both internal and external to their domain (Shapin 1995a, p.269) in order to produce public acceptance of their claims to expertise. Depending on the author, voluntary standards are identified as manifestations of publicly approved (although channelled) expert opinions through their design, or as products in a marketplace without public oversight of their adoption. Designations of expertise – the authority to intervene – are demonstrated through the debates over voluntary standards “to be always contingent, historically situated and grounded in practice” (Jasanoff 2003, p.392 c.f. Shapin 1995a).

Normative theories of expertise are helpful in highlighting the need to identify who is making decisions over the public good, and what or who enables them to hold this position. When legislative decisions produce market-based mechanisms, the research from voluntary standards illustrate that it is a contentious matter. It would be possible to enter the fray with the data from this research to identify the audience(s) within this case and evaluate their legitimacy. This would direct the conclusions towards a normative discussion, concerning whether or not voluntary standards offer support for or opposition to democratic structures of government. However, the focus for this research is the activities of standards to form the assemblage of carbon. For the current project a detailed knowledge of the work of the voluntary standards in question is necessary, and so the question “what does a voluntary carbon offset standard do?” is vital to answer (Chapter 4). However, the normative debate over whether the answer given is what a standard *should* be doing – whether their expert status is appropriate – will not be evaluated as part of this research. This allows a different application of the concept of legitimacy that maintains the focus more closely on the assemblage of carbon.

2.3.7 Alternative engagements of expertise studies

This section shifts the focus to offer examples of research that looks closely at the

construction and consequences of expertise (including standards) with approaches that explore the commodities and debates in which such groups take part. A shared characteristic of such literature is to look at the multiple viewpoints of those designated as experts (and some non-experts) in order to offer insight on the objects or practices over which they claim expertise. This is a different aim from essentialising the nature of expertise in order to generalise or evaluate whether any group should be considered an expert (Jasanoff 2003, p.392). Of note for the present project, this approach to expertise complements the post-ANT tenets of multiplicity and the potential for co-existing incoherences in practices and assemblages (see section 2.4). It demonstrates how understandings of carbon can be offered without adjudicating on the rights of any group (or standard) to claim an expert status in determining carbon, or focussing centrally on their attempts to achieve an expert status.

A key insight from STS work (what Collins & Evans (2002) refer to as the “second wave” of expertise studies) is that groups looking to claim expertise “construct – they do not simply find – the knowledge base on which they rest their... judgements” (Jasanoff 2005, p.221). Experts must create their fields of expertise – generate “public meaning” (Wynne 2003) – in the process of making their claims. Expertise thus becomes “hybrid, not an exterior intelligence applied to the world, but another artifactual body” (Mitchell 2002, p. 52). This approach does not view the work of experts in relation to a static, pre-determined reality and given set of audiences, but the simultaneous construction (or, in the vocabulary used in this project, assemblage) of an object over which expertise and authority can be claimed. In Wynne's (2003, p.406-408) examples, this meant opening out judicial debates over whether specific actions by companies should be understood as individual actions (dumping an oil platform; reprocessing nuclear fuels), or test cases for further, as yet unspecifiable but damaging behaviour (using the ocean as a rubbish dump; encouraging nuclear fuel/weapons markets). Barry (2012) identifies this switch as viewing a knowledge controversy as a “political situation.” In these examples, the authors do not determine whether the expertise of the actors involved was legitimate or focus on describing how they achieved any legitimacy in order to justify their relevance to an analysis of scientific controversies. It is enough to demonstrate that each group interacted in the formation of the assemblage – from a position of justified expertise or not – to merit the inclusion of

their articulation of a situation. This is the same approach I take with voluntary carbon offset standards.

Such a focus on the creation of expert assemblages can include criticisms of the legitimacy of certain experts (e.g. Mitchell 2002; Wynne 1996; Li 2007) but the research does not set out to adjudicate conclusively between the varying definitions of the problem (from different experts) and possible solutions. Collins & Evans (2002) criticise such an approach to expertise for relativising the contribution of science, extending authority too far when they argue we should be looking to define the barriers to entry over discussions that can be distilled to the purely technical. However, investigating the co-existence of “radically 'other' ways of understanding the world” (Jasanoff 2003, p.392) through describing what is assembled by experts can aid to explain situations, even if it also affirms that they will be far more complicated to prescribe for than Collins & Evans (2002; 2003) would like. As in the present research – although with different methodological approaches – the search for the multiple, perhaps disparate but coexistent versions of a problem has proved fertile ground for STS scholars. This is a distinct aim from attempting to resolve a unitary definition of a controversy and determine the legitimacy of any expert, but one that also produces valuable insight.

Even where the STS construct of expertise is not directly engaged by voluntary standard literature, some work in this field shows a parallel capacity to move on from debates over whether standards are legitimate to explore how the introduction of a standard (the construction of an expert) creates new and at times conflicting framings for commodities and situations. In relation to voluntary environmental and social standards, it has been argued that they transform coffee, fish and vegetables from consumables into political statements, environmental actions, medical interventions and class signifiers (Goodman 2004; Ponte 2012; Shapin 2006; Bryant & Goodman 2004). In Dunn's (2008) example,¹² European standards referred to a baseline of practices that were not found in Poland, and, she claims, were therefore not appropriate measures to determine the safety or quality of Polish meat. The introduction of the standards required changes in the

¹² Her example is of a mandatory standard, but her attention to the extent to which farms and abattoirs continued to produce meat on the black market gives it relevance as a situation in which there was an expression of choice, even if not an authorised allocation of it.

techniques for keeping and slaughtering animals, and had negative consequences for small-scale meat producers. Furthermore, she argues that the standards established the fattier cuts of meat favoured in Poland as not only different, but inferior to the leaner cuts preferred in other European countries, even when the standard was not universally upheld (2008, p.182). The rules contained more than judgements on the safest way to produce meat; they were also an indicator of what should be considered desirable as meat. Her work demonstrates how a discussion of the changing nature of a commodity is possible through focusing on standards with an ANT approach, regardless of whether or not the standard (or standards in general) are viewed as legitimate experts.

2.3.8 The aims of experts and standards

In achieving a designation of expert (or voluntary standard), a group or individual make claims to their status regarding knowledge of an issue. The NSDM school (Cashore & Bernstein 2007; Levin et al. 2009) specify the scenario for this process of expertise-claiming in the case of voluntary standards. They suggest that NSDM look to achieve the status of being “taken-for-granted” (Levin et al. 2009, p.571), and seen as “necessary or inevitable” (p.581) by the wider market or political constituency. Their suggestion goes further than arguing that standards look to be recognised as having a relevant view on a topic: they posit that voluntary standards aim to become the interpretation of the correct course of action (or assemblage of a commodity) in their domain, in ways similar to attempts by other groups to become the sole authorities over scientific or technical debates (e.g. Wynne 1996). Levin et al. (2009) specify this possibility for The Gold Standard as becoming “indispensable” as the baseline in the voluntary offset market, mimicking the CDM's role in UN compliance markets, and “successfully transforms the CDM... [to be] fully absorbed by the public authority or the CDM Executive Board” (p.791) in compliance markets. This position postulates that standards aim to be “cognitively legitimate” (Suchman 1995), and able to present the only appropriate definition of the commodity for their market.

Their view contrasts with other descriptions of standard motivations in the literature on voluntary standards. There is a discrepancy between those who assume standards aim to take over a market (c.f. Jaffee & Howard 2010; Fridell 2006; Auld et al. 2009; Dolan 2010) with those who describe a key function of voluntary standards as the exclusion of

other parts of a market (Guthman 2007, p.461-3; Prudham 2009). This latter position emphasises the role of voluntary social and environmental standards as differentiating between what is available in markets rather than the intention of imposing a new, comprehensive definition of a commodity (Schaeffer 1993). This debate is important within the present research as it pertains to the assemblage of carbon. Whether or not standards seek to become the singular definition of a commodity determines how they assemble the commodity in question – whether room is left for alternative assemblages to co-exist within their construction of their activities and aims. In this respect, examining the representation of expertise and authority by a standard plays a part in understanding how carbon is being assembled in the location of offset markets: whether it is being articulated as a unified and unitary commodity or whether spaces are simultaneously created for multiple alternative versions of carbon and offsetting within standard assemblages.

2.3.9 The boundaries of standard expertise

The study of boundaries has long proved a fruitful location for research in STS (e.g. Epstein 1996; Jasanoff 1987; Woolgar & Pawluch 1985). This final section relates STS work on the boundaries of expertise and voluntary standards literature considers the limits of standard expertise, or what Barry (2001, p.51-54) captured as “the ends of technological zones.” Such work looks at how what is excluded from the work of scientists or standards by those participating in these activities, in order to provide intriguing reflections on the groups and commodities in question. The descriptions of what is beyond a voluntary standard offer a particular direction for attention in this study, and the conceptual suggestions from the STS literature present hypotheses for how the “ends” of a standard activity might be manifested in ways that guide the research questions posed in this research.

Analysing the Columbia space shuttle crash, Turner (2005) pays particular attention to the limits of expert knowledge and the intriguing implications of thinking about the boundaries around what an expert might know. He argues for the conceptual existence but practical impossibility of “meta-expertise,” that is, to know everything around one's field of expert knowledge well enough to accurately judge the boundaries of one's own knowledge and the implications of knowledge from others (p.109). His point is that

experts cannot know the boundaries of their own knowledge (because to identify a boundary precisely requires an understanding of what lies on both sides), and that any account created through the collaboration of experts thus necessarily “relies on trust in the expert claims of others” (p.114). This leads to decisions that, because they are taken by a collectivity of experts, become the responsibility of no individual.

In thinking about voluntary standards, Turner's suggestion contrasts to the comments by Fridell (2009) on the limits to standard interventions at the sites of consumption. Fridell notes how the procedures of the Fairtrade label apply to production sites but not points of sale, a feature they share with many other voluntary social and environmental standards (Watanatada & Mak 2011). Fridell (2009) emphasises the importance of noting exactly where within the chains and circuits of production and consumption (Appadurai 1986) social and environmental claims are being organised or audited by voluntary standards. Where Turner was drawing on an example where the accountability of experts at NASA was expected to cover all eventualities, although with the crash in fact no one individual was deemed to be responsible, voluntary standards demonstrate a situation where experts place potentially narrow limits on their claims to expertise and, as a consequence, their responsibility. Fridell's point is that consumers of ethical goods, as with the public after the Columbia disaster, may have assumed a relationship between experts and all eventualities for final outcomes that the experts themselves were not claiming, and, as argued by Turner, indeed cannot logically claim.

Others have positioned the work of voluntary standards differently vis-a-vis consumers. Jaffee and Howard (2010) identify two voluntary standards (organic and Fairtrade) strongly and positively with social activism. In their version of events, these standards fought in the US to “protect” passive and helpless consumers against the state-supported co-option and weakening of “the soul of organics and fairtrade” by multinationals (p.397). In contrast, Busch (2000; 2011) identified standards more generally as a form of Foucauldian disciplining. In this reading, consumers are encompassed by the actions of standards but not to their benefit. Instead a standard “disciplines, reorganises, and transforms not only the thing that is standardised but all those persons and things that come into contact with it” (2000, p.281). The present case looks at how the standards interact with and perceive their relations to their consumers, but in a way that combines

the concerns of Turner to explore the limits to expertise.

In Turner's (2005) case the assumption is that experts were making decisions outwith their knowledge. In Fridell's (2009) example, it is implied that instead, standards-as-experts were limiting their accountability but not because there was necessarily a gap between their claims to knowledge and the matter under debate (if standards can assess union activities in potentially fragile democracies where products are made, he argues, surely they can do the same in more established ones where the products are sold). A further possibility to consider in relation to the boundaries of standard expertise comes from Barry (2001; 2006). He observes the potential for multiple accounts and incongruity around the boundaries of what he refers to as “technological zones.”

From the middle, a technological zone may often seem well defined and continuous... But at the ends of the zone there will be different perspectives, and uncertainties and anxieties about what may be possible or desirable, and different accounts of where the ends exist and whether or not they are solid or permeable, contestable or non-negotiable.

(2001, p.52-3).

Barry posits that “the offices of international institutions or radical NGOs are unlikely to provide a good vantage point from which to observe the formation and expansion of technological zones” (2006, p.244). In this project, I choose the offices of a standards organisation to look for the uncertainties, permeability and multiplicities he refers to at the edges. With his topological approach, he would agree that such zones of standardising, comparing and connecting are not centred and ended topographically, and the complex boundary work may be visible as much at the heart of a standard as in the hinterlands.

An exploration of when and how experts claim not to know (not just, as in the case of Wynne (1996) or Turner (2005) when and how they are demonstrated not to know) presents an intriguing possibility for this project. Exploring the uncertainties at ends of such zones makes a contribution to “revealing how knowledge actually flows, how it actually aggregates, and how aggregation fails” (Turner 2007, p.46). Chapter 4 will explain the role that two voluntary standards take in carbon offset markets, demonstrating where they place the limits to their authority in the market. Chapter 7

describes the production of these boundaries of accountability and expertise, in particular related to the limits highlighted by Fridell (2009) along the chain from production to consumption through discursive and material devices. In this manner, this research adds to the discussions in voluntary standards literature about the authority and practices of voluntary standards. However, of more central relevance in this project is considering what these boundary constructions reveal about the assemblage of carbon as it is formed through offset markets. The following section explains how a framework of ANT in a post-ANT interpretation lends itself to this aim.

2.4 Theoretical frameworks

The final components of this literature review outline the theoretical approach of this research in more detail. Important features of ANT are explained in particular as it has been developed and denominated more recently as post-ANT (Gad & Jensen 2010). Throughout the text I use a mixture of ANT and post-ANT to describe the work as some features are common to both, whereas some emphases have come to the fore with post-ANT incarnations. As will be explained there is not a sharp cut-off between the two, hence justifying an amalgamated description. On many occasions I use the terms ANT-inspired or ANT approaches to include scholars that could be classified as ANT/post-ANT, but who may not always use these labels themselves (e.g. Latour, see Mol 2010a, p.253-4). In the following sections I describe the concepts of actors and assemblages, how ANT work deals with scale, and consider whether ANT allows for politically aware analyses. The issues of outsiders to networks, multiplicities within assemblages and the potential for differentiation between links will then be explored to show where this work can be identified as post-ANT in its approach. Where the theoretical framework adopted from ANT/post-ANT is challenged by my data and how the approach is adapted and extended in this thesis are described to show how the concept of legitimacy is operationalised in this research. This is followed by a final discussion to draw together the literature on voluntary standards and broader STS approaches, in order to demonstrate how the theoretical approach and empirical questions that are posed in this research contribute to but differ from broader concerns of standards, legitimacy and expertise.

2.4.1 Actor-Network Theory and post-ANT

ANT developed from the sub-field of sociology interested in examining scientific and technological processes. Activities are understood as the enactment of networks which successfully connect all those involved (humans, but also objects, animals, ideas, practices). Enrolment into a network is the summation of action by all of the parties, so that, as in Latour's classic example, it is the bacteria as well as Mr. Pasteur who are operative agents within the development of pasteurisation. Their microbial cooperation was required for the success of a scientist, alongside and no less important than his social networks, institutional positions, laboratory apparatus and experimental data (Latour 1987). This description of the world posits non-humans as well as humans as the subjects of sociological study and the agents of change and stability.

From the early days contemplating scallops (Callon 1986) and seatbelts (Latour 1992) within STS, ANT has come to influence an ever-wider body of literature across the social sciences. The attention is on the effort and serendipity in making and maintaining connections between actors/ants, connections that can break down, alter, contradict and fall short. In so doing, ANT conceptually challenges the automatic attribution of outcomes to abstracted groups or concepts such as class or patriarchy (Castree 2002, p.121), rationality or efficiency (Latour 2005 Appendix). It requires a sympathy to viewing the world as in a constant state of (potential) flux, rather than as something pre-constructed and therefore in some respects complete (Law 2008, p.633). Post-ANT literature (Gad & Jensen 2010) emphasises even more strongly the transient, changeable and performed nature of networks (and thus, the world as we experience it).

Despite the T for theory in its acronym, the approach focuses on descriptive accounts rather than claiming to be an explanatory theory (Law 2009). ANT highlights the links between rather than a hierarchy of actors/ants, attempting to remain “agnostic” between the actors that are studied no matter their size, capacity for sentient thought or constitution (Callon 1986). As an approach, it intentionally seeks to mix together actors that are (stereo)typically found discretely, or at least with clear hierarchies in different accounts from different academic disciplines. This “inseparable mixture, the impossible multiplicity” (Mitchell 2002, p.52) which Bumpus tries to encompass in the term

“socio-natural-technical complexes” (Bumpus 2011, p.630) is aimed at drawing attention to the interactions between and interdependency of actors. To elaborate with one topical example, the smells, carcinogens, urban planning decisions, methane and non-formal economy at a location in Argentina are present and active in the description of carbon markets offered by Bumpus & Newell (2012). These multiple actors constrain and interrupt the work of auditors and global capital flows with their willingness, resistance or obliviousness to their position in a carbon offset project. They are an effect of and come to affect international carbon project developers, and the development of rules and procedures of the CDM. At the same time, international rules of offsetting impact on the daily interactions of actors within and around an Argentinean rubbish dump.

2.4.2 ANT and scale

Bumpus and Newell (2012) insert a delineation of a local and global site of action, although they are analysed as unequivocally intertwined and co-producing, and not “primarily or exclusively as a spatial category” (p.64). This brings up an important consideration for ANT approaches: scale. There has been discussion within ANT scholarship over the use of potentially scalar or spatially deterministic terminology and perspectives (c.f. Marston et al. 2005; Strathern 1995; Castree 2002) for two reasons. The first is the implication that invoking the terms local and global also introduces a hierarchy, where global phenomena take on a more ordered, powerful identity that then can be said to act *upon* local settings. Similarly, a discourse that implies notions of centres and peripheries also introduces a hierarchy of location (Marston et al. 2005, p.422; Castree 2002, p.119). The second concern with scale is a more radical critique: that by incorporating global as a unit of analysis, analysts are introducing a distinction between micro and macro-phenomena which some argue does not exist (Latour 1993; Marston et al. 2005).

Writers informed by ANT have challenged the use of scale as an analytical tool on both of these counts. Some approaches maintain a framework of scale, but without automatically incorporating a hierarchy between global and local, national, or any other levels of analysis (e.g. Ong 2008). Firstly, this encourages scrutiny of what is named as global to examine more precisely where and how something may be occurring, and bring into question why it may be being framed as a global phenomena (Marston et al.,

2005, p.420). In the case described by Ong, global responses to viruses could be re-ordered by national level framings of bird flu as a matter of “calculation” (how many Indonesians are dying of this compared to other illnesses?) and ethical judgments (will Indonesians get access to patented vaccines?) rather than within the WHO and international pharmaceutical company framings as a matter of (so-called global) security and with the potential for capital accumulation for non-Indonesians (2008, p.126). Bumpus and Newell (2012) take a similar approach. For them there exists “the need to understand how local contexts are influenced and become part of global processes” (p. 63), placing scale at the centre of their analysis of carbon markets. However, they maintain a sensitivity to the debates over the hierarchies implied in scales by ensuring to highlight where local and global interactions are two-way. As they saw it, where local happenings at Argentinean dumps came to affect global negotiations of UN rules (p.61-62). Nevertheless, in these renditions global remains a formulation that can be referred to as beyond and outside local performances, so that global issues are “abstractable, mobile and dynamic...” (Ong & Collier 2005, p.4).

Others have taken a different approach, often brought together under the terminology of “flattening” and “flat ontology,” a notion central to ANT (Marston et al 2005; Escobar 2007; Murdoch 1998). They argue that the constructs of scale are not useful frameworks for analysis because even if there is no hierarchy implied, there is still the imposition of an analytical division between macro and micro phenomena. Instead they posit that those supposedly global or central forces are only ever enacted in local settings (Marston et al. 2005; Strathern 1995; Castree 2002; Latour 1993, p.117), and *made* (by or through someone/thing) to interconnect. Castree describes this approach as to “dispense with this dualistic, *topographical* vocabulary and pursue the relational, *topological* vocabulary offered by network thinking” (Castree 2002, p.120). This is not to deny the possibility of actors “acting at a distance” (Latour 1987), or of long chains of assemblages that connect over many geographical sites (Latour 1993) – relevant in particular in the case of standards (Higgins & Lerner 2010). In this framing, standards are viewed as articulations of “governing-at-a-distance” (Higgins & Hallström 2007; Barry 2001). However, this does not necessarily require viewing them as pertaining to a separable, global sphere. Instead, standards can be analysed as acting within specific (but not necessarily geographically bounded) locations, with the relationships to other

localities or actors through networks or assemblages that might stretch out beyond their immediate surroundings, in time or space (Castree 2002; Murdoch 1998; Marston et al. 2005; Collinge 2006; Escobar 2007; Larner & Le Heron 2002). The aim is to avoid assuming activities are occurring because of global phenomena, and instead understand the materialities of what is being ascribed as global in their located, socio-technical enactments. In short, global becomes something to be explained rather than a term that is granted the capacity to explain (Strathern 1995).

The present work does not adopt a scalar framework to describe or explain standards and carbon. This offers an alternative view of carbon markets within the new carbon economy literature thanks to an existing complement of geographical, space-attentive discussions (see Bridge 2011 for a review). Engaging with a flat ontology removes the assumption that so-called global processes *cause* actions or necessarily contain organised, homogenous assemblages and values (Mitchell 2002, p.3). The rules of voluntary carbon offset standards are implemented across hundreds of offset project sites, but in this thesis these organisations are carefully *not* named global actors, with the assumptions of hierarchy and disconnection that this may entail (Higgins & Larner 2010, p.5-6). In this research, scale will be engaged from an ANT perspective to bring into question what and where local is as a category used by The Gold Standard. Here, the responses to climate change are explored in the details of enactments without being framed as being an order of magnitude (local) less than the (global) problem they are supposed to address (Lansing 2011, c.f. Boyd 2010). Instead, the workings of a standard organisation are located on maps, through descriptions into offices and online virtual spaces to comprise a non-hierarchical network, in keeping with the central tenants of ANT. This will allow an examination of the topological connections that are being articulated, rather than topographical extensions and limits being assumed.

2.4.3 Dissolving actor-assemblages

ANT literature intends to emphasise the constantly performed nature of a network: it is argued that an assemblage does not come to exist automatically and therefore remain, instead it is a form of constant re-makings and doings (Law 2008), wobbly and bricolaged (Miller 1998; Latour 2004a). However, to some, ANT research that makes

use of terms such as irreversibility, closure and networks give descriptions an inaccurately static and orderly disposition (Law 2008; Lee & Brown 1994, p.783). The use of the theory in this thesis is probably more likely to be charged with the opposite fault of overly precarious and capricious actor-assemblage assignments. At different stages in this research, concepts (SD), organisations (standards) and commodities (offsetting) are described for their assembled parts to understand them as combinations of texts, people, statistics, measures and beliefs, as well as being re-assembled to be actors who are granted coherence and agency within carbon markets.

This sliding between accepting the assembled form (an organisation that can be studied) and scrutinising it for its contents (an agglomeration of people, things, activities) is an important if confusing tenet of an ANT approach, where any actor can be opened up and examined for its assemblings (Law 2008). Such descriptions do not seek to explain why actorhood (credibility, authority, legitimacy) is achieved, and they make actors into slippery and “dissolving” (Smith 2001) objects of study. It would certainly be easier to determine the unit of study (organisational, individual, market) and offer it as a fixed vantage point within the research from which other (bigger or smaller) actor-assemblages could be taken apart or put together. On the other hand, emphasising the simultaneous capacity for things to be whole and made up of constituent parts, sometimes seeming more like an actor, at other times more like an assemblage, reflects an attempt to maintain the “ordinarily reliable kind of faithfulness” (Smith 1992, p.94) of a description of daily experience. It also helps to explore what it means up close to do offsets, and “to discover what can’t be grasped from within that experience, namely the social relations that are implicit in its organisation” (Smith 2001, p.161). With an ANT perspective, it is not only the social relations but all sorts of other relationships that come to form the making of carbon offsets. Keeping a loose grasp between assembling and disassembling reminds and disconcerts the reader into noticing where details, meanings, people and decisions are being included/excluded and potentially made invisible within what become the black boxes of actors. Such an approach, a hallmark especially of post-ANT work, assists in opening out the description of voluntary offset standards into reflections on wider assumptions and debates about what is being included and excluded when we talk about carbon.

2.4.4 Post-ANT

There has been increasing attention to the ontological and epistemological wobbles in the more recent “after ANT” (Law & Hassard 1999) or “post-ANT” (Gad & Jensen 2010) literature. Rather than a strong break from previous ANT work, this evolution is described by its proponents as modifications – and indeed inevitable translations as ANT is moved between research sites (Gad & Jensen 2010, p.57) – that bring about a change in tone and focus, rather than a fundamental shift away from the tenets of classic ANT approaches. Two novel features are notable: first, less of the Machiavellian or managerial discourses of winners and losers, strength and battle, where networks described attempts by actors to control those around them (Mol 2010a, p.256). Instead, post-ANT work shares a greater attendance to a vocabulary of assemblages and complexity (Law & Mol 2002), emphasising uncertainty and instability as constants in all assemblages, and suggesting examples of networks that might serve (Mol & De Laet 2000), educate (Verran 1999), hang together (Mol 2002) or undermine (Hanseth et al. 2006).

A second idea associated with the post-ANT literature, but more specifically with the work of Mol (Mol & Law 2004; De Laet & Mol 2000; Mol 2002; Mol 2013) is that networks can be both ontologically plural and fractal (Gad & Jensen 2010; Sjögren & Helgesson 2007). In Mol's research, what was apparently the same phenomenon was identified as being used, understood, formed and described differently at different sites, whilst maintaining a unitary identity as a bush pump (De Laet & Mol 2000), hypoglycaemia (Mol & Law 2004), or diet (Mol 2013). The aim is not to dissipate these multiples in order to find the essence of the true network, but instead to describe what was being done as interrelated but differentiated existences of the same thing. There were “more than one, but less than many” (Mol 2002, quoted in Gad & Jensen 2010, p.72) versions of the same disease/machine in the various enactments. These many-s related to and relied upon each other to substantiate themselves and be enacted into a oneness (a network).

This theoretical innovation overcomes not only an imposition of immutability on assemblages (Law & Singleton 2005), but also provides a method of describing and

exploring complexity, instability and incoherence within the same actor/assemblage. Rather than assuming that the intellectual path must lead to a resolution to determine which version of an assemblage has won and defines the form of an actor, the possibility that there are ontologically many (of the same assemblage) and that in their multiplicity they can also interdependent as a whole (one definition, one organisation) will be drawn upon in the present research. This interpretation of ANT brings it closer to the descriptions of practices invoked by Shove (Hand et al. 2005; Chappells & Shove 1999; Shove & Pantzar 2005; Hand & Shove 2007). Her work focuses on the processes by which unique individual activities and objects can occur distinctively in different times and spaces, but are maintained as recognisable conditions of the same (whether sports, objects or actions) surmised between sites. In this research, offsetting, standards and carbon, as they move between being described as actors and assemblages, are proposed as a potentially similar practices/fractal assemblages.

2.4.5 Keeping the political within the socio-technical

Despite its central attention to power (McLean & Hassard 2004; Latour 1986) ANT has been criticised for lacking an engagement with the political (Star 1991; Haraway 1997). Some have understood the ANT (and post-ANT (Saldanha 2003)) positions as a weak defence for remaining uncritical and indifferent to the outcomes of networks – what non-ANT scholars might refer to as structures of power or habitus (Castree 2002; Bonneuil et al. 2008; Fine 2003). The suggestion that ANT theorists are not able (or willing) to deal with politics is not unfounded. Latour declared that what others were calling power and society were not the causes of social outcomes, but names for the consequences: “power is... what has to be explained by the action of the others who obey... society is not what holds us together, it is what is held together” (1986, pp.266–76). Callon, much more recently, described economics and markets in ways that seem to be intentionally impervious to social and political contestations of economised approaches. Callon et al. (2002) identify markets as a hybrid of “economy, politics, ethics, law and, finally, even science. In these hybrid forums it is impossible to separate or dissociate the different components of the issues” (p.195). However, in their analysis the authors proceed to tune out the relevance and implications for any of these topics except in economic terms, leaving it to the footnotes and references to do the work of considering how, why, or what impact the heterogeneous make-up of this hybrid might

have. Emotions and families are incorporated in their analysis, but only as they may influence the choices of “consumers” (not people) of identified products and services (2002, p.204) or function to facilitate economic transactions (p.213) with little regard for what may go economically unexpressed but not unexperienced in these moments. Critics have been forthcoming in identifying this shortfall (Mirowski & Nik-Khah 2007; Fine 2003; Miller 2002).

On the other hand, ANT was adopted in the late 1990s by some geographers precisely because it was seen to incorporate power relations across human/nature, micro/macro dualisms (Murdoch 1997) and explicitly welcomed for “its ability to raise issues of distributive justice” (Busch & Juska 1997, p.695). In such translations of ANT the political outcomes of networks are of central importance. This is seen in discussions of changes to global food production chains (Whatmore & Thorne 1997; Busch & Juska 1997; Loconto & Simbua 2010), the project of European political unity (Barry 2001), or impacts on developing country communities (Li 2007; Strathern 1995; Mitchell 2002). As a consequence, a lack of an overtly political project shared by all ANT research (which, it must be remembered, strains to avoid even sharing a theory c.f. Mol 2010a) should not be interpreted as a lack of political engagement from all those using ANT. Where ANT research differs from much Marxist-influenced social theory is the unwillingness to accept social structures as causes of outcomes, but instead as situations to be explained (Castree 2002; Barry 2006). A commitment to an ANT approach means an emphasis on description rather than normative explanations, but it is the researcher, not the theory, that determines which assemblages and actors will be the focus of attention and whether the result will be “strangely agnostic” (Castree 2002, p.135) to the wider locations and outcomes of networks, and attentive to prejudices, inequalities and injustice.

There are two main approaches that have emerged to respond to the indictment of an apolitical stance from ANT users. A number of scholars have combined ANT with Foucauldian governmentality (e.g. Li 2007; Dunn 2008; Ong & Collier 2005; Higgins & Larner 2010; Loconto 2010). This functions as a combination because Foucauldian notions of power also view it as “progressively, really and materially constituted

through a multiplicity of organisms, forces, energies, materials, desires, thoughts etc... as something which only functions in the form of a chain.” (Foucault 1986 [1976], p.233; c.f. Law 2008, p.632) and thus as something that should be studied through attention to these “infinitesimal mechanisms” (p.234). Taking a Foucauldian stance overcomes what is seen as a myopia inherent in ANT approaches, which miss perceiving “the broader regimes of governing” (Higgins & Lerner 2010, p.8). Such projects identify assemblages that form systems of oppression and disciplining (Dunn 2008; Mitchell 2002). This generates responses to the question of 'who gains?' that are familiar from non-ANT work (e.g. Mitchell 2002; Li 2007; Dunn 2008; Escobar 1992; Ferguson 1990). But the routes to come to these answers, via mosquitoes, meat labelling and mapping, can be innovative and engaging, tracing trails and entrails of power and what becomes part of “the political” (Barry 2001; Callon 2004). However, a risk with a Foucauldian analysis is that the resulting analysis produces a static description and deterministic conclusion (such as in Dunn 2008) that overlooks “the idea of (distributed) action” (Callon 2004 p.122). If all relations are preconceived through notions of domination and discipline, the possibility of a situation that “accelerates and intensifies agency in particular directions, and with unpredictable and dynamic effects” (Barry 2006, p.241) can be smothered.

A second strategy from ANT theorists, and particularly those associated with post-ANT (Alcadipani & Hassard 2010, p.423), has been to highlight how their work provides an elucidation of the “ontological politics” of a given situation (Mol & Law 1994; Law 2008; Mol 2013). Although this typically results in a less direct answer the question of 'who gains?', it can emphasise the assembled workings of the world in a way that has been argued as a (sufficient) political stance in itself (Mol 2010a; 2013). Attending to such detail “help[s] in getting a sense of what is going on, what deserves concern or care, anger or love, or simply attention” (Mol 2010a, p.262) as well as recognising agency as dispersed across people and things (Latour 2004b; Mol 2010a). It opens out space for considering the possibilities that it could have been (or still are) otherwise (Mitchell 2002 p.5; Latour 2004a; 2004b). For some, it is not enough to suggest that alternatives would have been possible; the researcher should make clear and argue for their preferred choice (Ong 2008, c.f. Scheper-Hughes 1995). However, noting how an assemblage has been stabilised (or not) demonstrates where, in potentially mundane

objects or situations, decisions which benefit some but not others are closed down, black boxed and entrenched (Star 1991). In relation to post-ANT claims of multiplicity, some make further claims. Law proposes that “if there are multiple realities then these may be played off against one another” (2007, p.637). Thus a post-ANT attention to differing fractals of an assemblage increases the political engagement possible from ANT. Woolgar and Lezaun (2013 p.326) disagree, saying post-ANT does not go any further than the “longstanding core slogan [of STS] – ‘it could be otherwise’” (Woolgar & Lezaun 2013, p.322). Although they make clear their reservations, they suggest this is stance is sufficient as a defence against accusations of political passivity.

I do not make use of the discourse of Foucauldian governmentality for the various assemblages of carbon because the sites of standard implementation are beyond this project, and, as Hanseth et al. (2006) have shown, success in disciplining and domination should not be assumed in the impact of a standard. In this research, using a post-ANT approach means that the questions posed are not what the actors should be doing or who are they controlling, instead I examine what a standard and market does when assembling carbon by paying attention to how combinations of actors do it. This act of narration makes explicit some of the tacit assumptions and contradictions in what it means to be a standard or an offset. Such an approach does not claim that there are not processes of domination and discipline, but as Lane argues from a strongly ANT perspective:

Powers exist, structures exist, contexts exists, but they are not granted a seemingly ex nihilo causal efficacy, and they cannot be used as the silent arbiters of truth or change. Instead, they themselves need to be brought within the ambit of analysis.

(2012, p.588).

The engagement with ANT offers the possibility of identifying the ongoing work and effort that it takes to articulate carbon in the ways it is currently enacted, which produces a projection of the idea that it could have been otherwise.

2.4.6 Determining an assemblage

ANT scholars at the outset suggested “following the actors” as an appropriate course of action in deciding who or what should be considered as part of an ANT directed analysis (Callon 1986). Using ANT makes the process of selecting relevant actors

complicated in that there is a potentially limitless cast. However, the “cacophony of human and non-human actors” (Lane 2012, p.586) available to ANT research is also a benefit rather than necessarily a flaw. All researchers must take decisions about who or what is relevant, and ANT theorists choose to do this in the location of each empirical case rather than a priori. In this case relevant actors were chosen as they were seen to shed light on articulations of carbon, where these were diverse and potentially conflicting as well as where they seemed more stable and were assumed as facts (c.f. Lane 2012 p.587-9).

On the other hand, the propensity of the perspective to pay more attention to those enrolled into an assemblage rather than those who are left out – and ascribing network creation as a measure of success – are also cited as reasons to be suspicious if not outright opposed to ANT informed writing (Star 1991; Haraway 1997). Critics have suggested an ANT approach is “the blind leading the blind” (Bowker & Star 1999, p.49), with a lack of consideration for those excluded or made invisible in the production and descriptions of networks, in particular those outside of formally identified scientific or official processes (Laurier & Philo 1999). Lee & Brown (1994) go so far as to suggest this creates a theoretical as well as moral lacuna, with any metaphor of a network implicitly dependent upon there being a category of the non-participant but necessary Others to fill the vacuum outside of an assemblage. ANT leaves little theoretical space to be outside the networks that are described, even though there are those (such as the transsexuals positioned in the “high tension zone” outwith the two discrete assemblages of male and female proposed by Star (1991)) who could be regarded as residing in this space. ANT researchers tend to note when actors fail/fall/leave/abscond from networks, but where they go to or how they are kept there has not been of such concern (for exceptions see Lee & Brown 1994; Mol & Law 2001; Star 1991). In this research, it has been a matter of interest to understand what was not assembled by standards and into offsets, as well as examining what was. This draws on a tradition of feminist academia that pays attention to “a non-user, an outcast or a castaway” (Star 1991, p.8) as a subject of both intellectual and political importance, as well as the STS Strong programme idea of symmetry in examining both success and failure in equal terms. The beginnings of an exploration of the theoretical space in between networks, and a vocabulary for doing so, is the subject of Chapter 7. Chapter 8 will consider how successful this attempt has been.

2.5 Assemblages of legitimacy

As well as a proclivity for ANT research to discuss only those who are included in a network rather than those outside, the nature of the linking *between* actors within an assemblage has been left as a uniform, although fragile and complex, theoretical condition. In ANT inspired descriptions, linking (or assembling) is described using a number of different words: network (Callon 1986); assemblage (Law 2004); agencement (Callon & Çalışkan 2010); enacted practices (Mol 2002); embodied routines, repetitions and rituals (Verran 1999); constellated relationships (Ong 2008); and modes of ordering (Mol 2010). The actions that might occur to perform or enact these situations are even more diverse, including persuasion (Latour, 1996), coercion (Star 1991), calculation (Çalışkan 2007), infestation (Mitchell 2002), visual representation (Pollock & D'Adderio 2012), travelling (Law & Mol 2001), ambivalence (Singleton & Michael 1993), listening (Hennion 2001) and breaking (De Laet & Mol 2000), to give just some examples. All of these are classified within ANT informed literature as instances of enrolment. However, there have been few attempts to provide a conceptual framework for describing these linkages. Are they all the same? The answer, in my fieldwork, appeared to be no. So what might these assemblages look like, in theoretical rather than material-social terms? This question had not been directly posed in the ANT literature, and thus ANT required a new translation when confronted with my data. The response in this project was theoretical developments that could focus more attention onto thinking about the nature of networks, rather than the conditions of their creation or dissolution, to offer a valuable addition to ANT and post-ANT repertoires.

2.5.1 Previous attempts to define assembling

Within the ANT canon it is emphasised that links last for different amounts of time, and may be more or less precarious: in the earliest days of ANT discussions Latour identified the difference between networks as “which associations are stronger and which are weaker” (1987, p. 140). Callon (1998) described “framing” and “entanglement” as continuous and complex processes, hinting at the possibility of variety, not attempting to analyse the potential for differences. Looking at development interventions in Indonesia, Li (2007) emphasised assemblages in tension and coherence

and pointed out that in her case of Indonesian development projects “fuzziness, adjustment and compromise are critical to holding assemblages together” (p.279). It is this fuzziness that is a matter of theoretical and empirical concern. A theoretical proposition that lies at the heart of this thesis is that a network might not only be a combination of heterogeneous actors, but also of heterogeneous connections and disconnections between these actors.

Murdoch (1998) takes a first step in attending to the links of assemblages, as well as the actors. In describing ANT, he says “the theory merely concerns itself with which links hold and which fall apart” (p.361). He emphasises that networks are “both the variety of the materials used in construction *and the relations established between the combined elements*” (p.361, emphasis added). He continues:

there are those networks where translations are perfectly accomplished: the entities are effectively aligned and the network is stabilised... ‘heavy with norms’ as Callon (1992, p.91) puts it...On the other hand, there are networks where the links between actors and intermediaries are provisional and divergent.

(1998, p.362).

He pinpoints differences between assemblages that come not from the combinations of actors that are assembled, but from differences in the *assembling*. However, with a geographer's focus on space at the centre of his work, he developed a theoretical description of the different types spaces that these alternative types of interconnections produce, rather than investigating further the matter of differences in assemblage.

Others have also commented on (but not investigated) the idea that some enrolments, whilst still identifiable as connections between separable actors, are taken-for-granted: “Some truths and technologies, joined in networks of translation, become enormously stable features of our landscape, shaping action and inhibiting certain kinds of change” (Star, 1991, p. 40 quoted in McLean & Hassard 2004, p.512). This idea has not been directly addressed within post-ANT literature up to this point, allowing Gad & Jensen (2010) to also note that “the categorizations we take most for granted are precisely embedded in our most stable networks” (p.58). Labelling and differentiating these connections brings them into the field of analysis, draws them out of their “submerged” (Suchman 1995) state and presents them as viable for investigation and contestation.

Understanding the application of ANT as a political as well as theoretical project, it would seem important to resurface and trace these taken-for-granted links in particular, and notice how they are different from, but also the same as, any other connections that are made between actors. In line with those who make the claim that ANT is “ontologically political” (Alcadipani & Hassard 2010, p.424) showing the assembling, the work that is done (and could, therefore, be potentially un-done) in such taken-for-granted cases may be especially important.

2.5.2 Adding to the repertoire of ANT

ANT brought in a range of potential actors and post-ANT has brought attention to the multiplicity of these actors in the same network. Here, provoked by the assemblages that I observed in carbon offsetting, I want to consider the possibility of attending to differentiation between the links, fibres, chains or connections that make up a network. The aim here is not to find a theoretical foundation for the suggestion that these more stable networks are made of something different – this would be to attempt to sneak in a structuralist argument that is antithetical to the ANT-imagined world. Assemblages, from an ANT perspective, are always comparable – this is what makes them different from hierarchically scalar, or structuralist separations of macro and micro phenomena (Whatmore & Thorne 1997, p.302). However, a way to describe variations in assemblages offers better purchase on the situations that appeared in my fieldwork.

ANT as an approach has long invited such innovations, alterations and translations – as the number of different synonyms for network listed above testify. Whilst critics claim this flexibility as a flaw (Kneer 2010, quoted in Mol 2010b p.280), the diversity of work defined as ANT is something that its proponents cite as a strength (e.g. Alcadipani & Hassard 2010, p. 420). ANT users seek out new metaphors “not to finally, once and for all, catch reality as it really is... [but to] shift our understanding and to attune to reality differently” (Mol 2010a, p.255). As a consequence new vocabulary and divergent interpretations do not need to be seen as theoretically undermining or conflicting. In her summary of ANT, Mol (2010a) prefers to think of ANT approaches as “an adaptable, open repository. A list of terms. A set of sensitivities... the point is not to purify the repertoire, but to enrich it” (2010a, p.253-7). In this spirit, this research looks to open out a theoretical space – the space of the linkages and assemblages – that has not been

created by previous post-ANT vocabulary and analysis, in order to better describe what was observed of carbon. The aim in the following section is to offer a complementary vocabulary that can focus attention on the variations in relations between actors. With data that suggested assemblages that were being enacted with varying degrees of success and longevity (in time and space), the purpose here is to find ways to focus on and describe this variety. In a strongly contrasting approach to examining social and environmental standards (Cashore et al. 2004) I found a solution: a typology of legitimacy (Suchman 1995). This theoretical development offers novel insights into the functioning of standards within carbon markets, and provides reflections on the assemblage of the commodity of carbon to better understand the possibilities that are being articulated and submerged in market responses to climate change.

2.5.3 Locating Suchman

Suchman's typology is, of course, not the first attempt to dissect legitimacy. Weber's description of three types of legitimacy is foundational in sociology and politics (Spencer 1970). Weber identified legitimacy as the method for gaining political authority, and suggested understanding legitimacy as coming from three different sources: tradition, personal charisma, or the legal system (Weber 1958). Weber's definition highlights the interactional aspect of legitimacy: it can only exist in relational contexts. In his description of legitimate authority this is between those who are deemed to have legitimacy and those submitting to their rule (Peter 2010). Suchman's (1995) analysis of legitimacy is slightly different, removing it from the context of political institutions and applying it instead to understand how organisations interact. Suchman's highly influential definition of legitimacy is: “a generalised perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions” (p.574). Suchman's definition of legitimacy does not require (although it can include) intentionality from the part of the actor/organisation. Unlike Weber's utilisation, which implicated a human consciousness behind the actions of that which was being judged as legitimate, Suchman's interpretation includes no such requirements of actors. This makes his typology amenable to a synthesis with ANT.

Suchman wanted to be able to describe the activities of organisations as they presented

themselves to others – whether clients, governments, partners, the general public or competitors. The relational aspect of the term is still central, as he argued: “legitimacy is possessed objectively, yet created subjectively... [it is] dependent on a collective audience, yet independent of particular observers” (1995, p.574). He posited that legitimacy could be examined in more detail not by thinking through its source, but by identifying differences in its enactment. His approach is thus descriptive and does not rely on reference to ideas of pre-existing hierarchical social structures to explain legitimacy, making it an appropriate match with ANT. In contrast to ANT he is also prescriptive, looking to assist organisations in understanding how to build legitimacy. This feature of his work will not be adopted in the present research, as I seek to explore the enactment of carbon rather than primarily to propose ways in which the organisations studied can become more legitimate.

With relevance to the descriptions from ANT work of different networks, Suchman suggested that while some legitimacy is a sense that someone/thing is “taken-for-granted,” and seen as “necessary and inevitable” (1995, p.582) it is also possible to identify other other types of legitimacy. One would be a situation in which something was desirable but not necessarily automatic (moral legitimacy) and the other a situation where something may be possible, but is undertaken for personal benefit and chosen as one of multiple plausible options (pragmatic legitimacy), rather than because it is viewed as the only right way to do something (cognitive legitimacy). This parsimonious typology provided a framework that could draw attention to what might be taken-for-granted in an assemblage, and a set of simple terms that also distinguished and described alternative situations.

Figure 2.1: Adaptation of Suchman's typology of legitimacy

Type of legitimacy	Description in relation to the attributes of an assemblage
Cognitive	A taken-for-granted attribute, intrinsic to the assemblage.
Moral	An attribute that makes a more desirable version of the assemblage, but it is also possible for it to exist without this attribute.
Pragmatic	An additional attribute that can be included with the assemblage, but not universally seen to be better or worse than other potential features.

When the legitimacy of an assemblage is cognitive, we can no longer imagine the entity existing without these connected parts. The boundaries between actors have become invisible, with attributes seeming intrinsic and taken-for-granted. This is the moment when an assemblage is seen or interacted with as a unitary actor (Law 2008, p.632) – a black box. With moral legitimacy, the assemblage is not so seamless. The addition of certain actors is seen as desirable by a wide audience, but it is also plausible for the situation to be otherwise: for the assemblage to be whole (an actor) without this extra bit of assembling. To clarify, the morality referred to here is not necessarily a normative reflection of the relationship in question, but understood to be something desirable in a broad sense, not only in accordance with an ethical code.

The third form of legitimacy is pragmatic. An attribute can be valid, but not necessarily vital or even superior to other possibilities except for a specific audience with particular demands. For example, assemblages which differ slightly in their composition, but are understood to be various examples of the same commodity with no particular brand leader or archetype being defined as objectively better. Suchman (1995) defines the difference between moral and pragmatic legitimacy as when attributes gain the advantage as being seen to be objective (moral, shared social judgement) rather than subjective (pragmatic, individual judgement) improvements on alternative assemblages. He took pains in later work to point out that these categories of legitimacy are neither

discrete nor ordinal; a situation can exhibit evidence of more than one type of legitimacy, and holding one type does not necessarily mean that an assemblage is any closer to gaining any other type (Deephouse & Suchman 2008, p.68). Furthermore, the creation of one type can be detrimental to creating others: defending something for its moral legitimacy (an attribute as desirable) can bring into question any cognitive legitimacy (an attribute as taken-for-granted) it may have had (Suchman 1995, p.585). This warning, aimed at organisations, is considered in relation to assemblages in the discussion of the findings of this research.

Suchman, as Weber before him, was clear that in offering a typology he did not expect to produce a perfect representation of all situations (1995, p.604; Deephouse & Suchman 1998, p.70). Weber was also clear on the weaknesses as well as the strengths of offering typologies of phenomena, arguing that they could represent only ideal types, but that these could be useful heuristic devices (Coser 1977; Roth 1987). In this research these categories of assemblage legitimacy are offered as a resource for “making such [discursive and theoretical] shifts and playing with them to see what happens” (Mol 2010a, p.255) in ways that reflected the data collected, and could plausibly be relevant in other cases.

2.5.4 ANT, market actors and legitimacy

My operationalisation of Suchman (1995) is to look at assemblages rather than to evaluate organisations. This differentiates the current project from how Suchman intended his typology to be used, and from other work that looks at the legitimacy of voluntary standards and other market actors. This final section describes examples from the literature on the sociology of markets (Preda 2005a; 2005b; 2007b) and voluntary standards (Gulbrandsen 2008; Cashore et al. 2004; Boström & Hallström 2010). Where other incorporations of legitimacy place the legitimacy of organisations or groups at the centre of their analysis, the present work uses legitimacy as an adjunct to an ANT approach to examine the assemblage of carbon. Describing these accounts clarifies the differences in how legitimacy is used here, *and* also confirms the benefit of ANT neutrality towards the object of study and the usefulness of an ANT approach in incorporating both human and non-human actors into a description.

Preda (2005a; 2005b; 2007b) uses legitimacy and status to describe the position of different groups in financial markets. Without drawing on Suchman's typology of legitimacy, he nevertheless identifies components of status and legitimacy that relate to being seen to be minimally socially acceptable (e.g. stock markets separated from gambling), desirable (investing as an action that supports innovation and development) and eventually taken-for-granted when “the investor is reconfigured as having universal validity... [with] the notion that investing is intrinsic to human nature and a basic social right” (2005b, p.141). In describing how stockbrokers produce legitimacy for themselves through “control over membership, access, listing and trading securities, to codes of honour and reputability” (2005a p.452), he comments on the impact this has on the standing of groups closely associated with them within markets. In other work he draws on this trickle-down legitimacy to explain the legitimacy of financial chartists (2007b), despite their conflict with academic financial economics. He suggests that alongside their connection to stockbrokers, chartists have maintained their credibility through the performativity of their work. They provide clients (and themselves) “with an account of ‘the market’ as an orderly, totalizing phenomenon” (2007b, p.61) which is normatively attractive even if it is unsupported by data.

In the case of investors, a large, diverse and dispersed group, Preda demonstrates how the social standing of investors has changed over time in ways to produce legitimacy and status. He argues there has been a shift in understandings of investors, moving from being seen as “a fool, an insider, or a manipulator” to a reputable and central role in contemporary understandings of capitalism (2005a p.158). He emphasises the connection between legitimacy in (and of) markets to perceptions of the character of the individuals participating, in line with the arguments of Shapin (1995a; 1995b). For brokers, he suggests that they were able to manage the production of a characterisation of their behaviours as rational, measured (and measuring) and precise. With investors he argues that a similar result was achieved through discourses and techniques around the act of investing to associate investors with engineers and scientists “bound to discover the universal laws of the market” (2005b, p.141). Preda comments on how the legitimacy of stockbrokers and investors influences a wider public perception of legitimacy for financial markets, but the central aim of his work is to consider the creation of legitimacy for these generalised groups over time.

Preda exemplifies how an ANT approach can draw in a wide range of devices to examine markets, and in his case to describe how legitimacy was created for broad groups of actors. In contrast, Cashore et al. (2004) suggest the answer to how a specific standard gained legitimacy lay in the political opportunity structures found in different regions (see also Bartley 2003). Gulbrandsen (2008) limits his argument to the internal organisational structures, suggesting DiMaggio & Powell's (1983) institutional isomorphism argument to explain why other voluntary standards organisations have replicated Forestry Stewardship Council (FSC) structures. Similarly, Ponte (2012) argued that the internal structure of the Marine Stewardship Council (MSC) as an organisation largely explained its legitimacy and also the potential for future de-legitimation. Others argue that legitimacy should be understood only through examining individuals or organisations behind and within voluntary standards rather than political opportunity structures or their internal organisation (Boström & Hallström 2010). Preda presents cases that combine discussions of organisational structures *and* material devices, beliefs, other organisations and practices to provide a more complete and engaging description of the legitimacy-creating activities of market participants (c.f. Barry 2012, p.332).

When looking at specific cases of voluntary standards, each of the works (Cashore et al. 2004; Gulbrandsten 2008; Bartley 2003; Ponte 2012) becomes party to one side of the debate over whether voluntary standards are legitimate as an institution. It is apparent that when using Suchman's typology, Cashore et al. (2004) presuppose that the standard in question (Forest Stewardship Council or FSC) is commendable both in the detail own work, and more generally as an NSDM. Ponte (2012) is more circumspect, suggesting that the Marine Stewardship Council (MSC) position may not be tenable in the longer term as they are ill equipped to manage the social aspects of SD, but his starting point is still that it is plausible for a voluntary standard to be legitimate. Gulbrandsen (2008) compares the FSC and MSC in terms of their legitimacy as derived from their internal organisational structures, and he too sets up a framework that implies a voluntary standard can be considered legitimate. As explained previously, this assumption is strongly challenged by the literature that perceived surveillance, disciplining and oppression in the actions of standards accomplishing legitimacy and adoption (Dunn

2008; Dolan 2010; Guthman 2007). In contrast to this work on voluntary standard legitimacy, Preda (2005a; 2005b; 2007b) does not predetermine whether any of the groups in question should be plausibly considered as legitimate. This agnosticism is maintained through the use of an ANT approach, as in the current project.

In contrast to this research, however, Preda does not focus on the examination of specific cases, instead looking at groups more generally across markets and across time. To mirror his approach in the current project for voluntary carbon offset standards would mean grouping them together to understand how they have argued their legitimacy en masse, which would lose the benefit of detail in the articulations of carbon that is provided by taking specific cases. Moulding a unified description of standard attempts at legitimacy creation similar to that produced by Preda (2005a) would not allow for a central focus on understanding the multiplicities of carbon, although it would be fruitful addition to the literature describing the creation and enactment of carbon markets and the sociology of markets more generally. In this sense, although the current project uses specific cases, it is also addressing the wider “political situation” of carbon which is recognised beyond the boundaries of debates over voluntary carbon offset standards or carbon markets (c.f. Barry 2012).

In this project, the selected focus is the relationship between different parts of the assemblage of carbon that will be investigated in terms of exhibiting different types of legitimacy. Although this project centres around the concept of legitimacy, including discussions of the creations of legitimacy of the standards (legitimacy of organisations) would risk confusion over the use of legitimacy as a construct to think about differences in assemblages (the articulations of carbon) which is the central goal of this work. This shares more with the approach of Mol (2002; 2013) or Lane (2012) than Preda (2005a) or the work on the legitimacy of individual standards (Cashore et al. 2004), in a way that complements the alternative engagements with expertise studies of Mitchell (2002) or Dunn (2008) already described. In the research similar to this project, there is an emphasis on the objects that were created rather than focussing on the process of expert-making or group legitimisation. Mol (2002) followed doctors and other professionals but in order to look at diseases and devices, not at the construction of their expert identities. Lane (2012) explained the work of a range of academics, government bureaus

and politicians to understand how they assembled the “fact” of market efficiency for carbon, not for how each group was constructing its identity within a pre-existing market.

In summary, the question of whether voluntary carbon offset standards are legitimate has already been answered – with contrasting responses – by others writing on carbon markets (Bernstein et al. 2010; Paterson 2009). The battle lines over the legitimacy of voluntary social and environmental standards in general are clearly drawn (Dolan 2010; Cashore et al. 2004). Instead of entering this debate, this project was inspired by D.E. Smith's (2001) approach to organisations as it complements an ANT framework to ask the different and slightly awkward question: “what is a standard organisation?” because notably, what is missing from the new carbon economy literature is a detailed examination of what voluntary carbon offset standards *do* (on a daily, material basis), and *how* they do it. This research requires an in-depth exploration of the workings of standards, but the ANT approach taken allows a stance that does not make judgements about the legitimacy of the standards under research. The focus on the commodity of carbon in means that understanding the construction of legitimacy for standards is not imperative in order to achieve this goal. Specific cases are taken individually to see what they can demonstrate about carbon, rather than the legitimacy of these particular standards, or voluntary standards in general, being the central research question. This is designed to achieve the overall aim of drawing the analytic eye away from the actors and onto the assemblage that is articulated as carbon.

2.6 Conclusion

This literature review has brought together a wide range of literature to set up a series of topics that intersect in this research, with its focus on offsetting and carbon at the site of voluntary offset standards. The focus of the work can be constructed to maximise its offering to Bridge's (2011) call for a research agenda considering carbon. This project can make use of the new carbon economy approach, with its focus on the socio-technical daily work of carbon markets, to attend to Bridge's aim. In the new carbon economy literature there has not been a sustained engagement with the activities of voluntary offset standards. Other work focused voluntary offset standards was shown to be engaged in comparative evaluations of standards or normative positioning of

standards as positive models of governance, rather than as a site from which to examine the materialities of carbon markets. As a result, this research fills a gap in the new carbon economy literature and offers an insight into the assemblage of carbon in a specific location.

As was identified through examples from other work on standards (Dunn 2008; Ponte 2012; Barry 2001; 2006), an approach focused on standards can offer significant purchase on the articulation of commodities. By selecting voluntary standards, this project intersects with STS work on expertise, quantification and legitimacy as well as research from across the social sciences on voluntary standards. The use of Turner's (2001) conceptualisation of expertise clarified the terrain of the debate over the legitimacy of voluntary standards, but also the limitations of his typology for resolving questions of whether specific organisations should be considered as experts. Other approaches to expertise from within STS demonstrated how experts could be examined without engaging in an evaluation of the legitimacy of their status (Jasanoff 1995; Wynne 2003). This suggests a way to circumvent the entrenched debate over voluntary standards, and the use of a post-ANT approach in the style of Mol (2002; 2013) and Lane (2012) provide models of agnostic engagement with experts. Describing how offsets are enacted through standards, rather than whether or not standards are appropriate to judge offsets, is thus the selected route through this contested domain.

The relevant literature describing both carbon offsetting and voluntary standards presented quantification, measurement and SD as topics of particular interest that could be useful starting points in investigating in the case of voluntary carbon offset standards. Furthermore, the conflicts over the boundaries of both offsetting and standards were crystallised as exploring the ends of “technological zones” (Barry 2006). Research on other voluntary standards (e.g. Fridell 2009) and critical literature on carbon offsetting (Lohmann 2005) indicated that consumption and consumers may present arenas beyond the scope of the zone of qualification produced by a voluntary offset standard. This also offers a way to overcome a frequent criticism of ANT literature in its inattentive position towards those left out of networks. Identifying what was being made irrelevant or external in standard work and understanding how these positions were enacted and maintained offers a research strategy for the current project.

The issues arising from these interrelated debates have been synthesised into a set of four research questions which structure this thesis:

- 1 What is a voluntary offset standard and what work does it do? (Chapter 4)
- 2 What does The Standard's work take-for-granted about carbon offsetting? (Chapter 5)
- 3 How is sustainable development assembled by The Gold Standard? How is it assembled into offsetting? (Chapter 6)
- 4 What is placed beyond the remit (outside the assemblage) of The Gold Standard as a voluntary offset standard? (Chapter 7)

To provide a theoretical framework within which to answer the research questions, ANT offers the construct of assemblages, of actors that meet, join, enact, conflict, intermingle and fall apart. It is a method of description that can be agnostic in identifying participants as human and non-human, whole or assembled, but not necessarily apolitical with regard to a care for outcomes (Latour 2004). Relevant to the description of offsetting and carbon, post-ANT offers a way to understand an assemblage as “more than one but less than many” (Mol 2002 quoted in Gad and Jensen 2010, p.72) where differences between how an assemblage is enacted in different sites can co-exist and still be explained as a unitary object. A synthesis with Suchman's typology of legitimacy was proposed as an adaptation of a post-ANT approach. Legitimacy is operationalised not to look at the credibility or authority of the standards organisations themselves as it has been in other research on markets (Preda 2005a) and standards (Cashore et al. 2004; Gulbrandsen 2008), but to consider the linkages within the assemblages of offsetting. This holds the possibility of attending to the differences in these links in ways that can effectuate a parsimonious but novel description of carbon at the site of voluntary carbon offset standards.

Chapter 3: Research design and methodology

3.1 Introduction

This chapter lays out the rationales behind the methodological choices of this research, and details the processes that I went through in the establishment and undertaking of this research project. Justifications and reflections on the methods chosen and methodological issues arising in this research – in particular, confidentiality and researching contemporary topics – are discussed. The challenges and opportunities inherent in ethnography are considered at the end of this chapter.

3.2 Study design

The aim of this study is to provide an intimate description of 'carbon' as it is enacted as offsetting through the daily activities of voluntary offset standards. In so doing, this research can participate in wider debates about carbon and climate change and the role of voluntary standards, but I do not primarily look to generalise from this case. The intention here is to potentially complicate and question the rationalised definitions of 'carbon' by understanding it *in situ*, providing clarification of the daily processes of one stage of making certain types of offset, its own particular type of carbon.

This study aims to explore the complexities, challenges and processes that a standard produces and works through. The result is an account of the daily work of the administrative offices of voluntary standards, with attention to the interactions between multiple actors (technologies, methodologies, ideologies and people) in the processes and outcomes: “stories of the very process of knowing” (Schneider 2002, p.469). The aim is the presentation of an “ordinarily reliable kind of faithfulness to 'how it works'” (Smith 1992, p.94) in the making and doing of carbon offsetting and standards. With

this interest in mind, I planned this research “to optimise understanding of the case rather than generalisation beyond” (Stake 1998, p.86). This has resulted in ethnographic case study, with one central case and a second, less detailed case, undertaken at the administrative offices of two voluntary carbon offsets that both include SD as part of their mandate.

3.3 Research strategies

Chiming with Blaikie's description of an 'abductive' research strategy (2000, p.100), this research is an attempt at the description of a case using a set of sociological theoretical frames (ANT, and Suchman's vocabulary of legitimacy) that reinterpret everyday accounts in ways that offer and develop theoretical insight. Blaikie describes these insights as “go[ing] beyond everyday knowledge to include conditions of which social actors may be unaware” (2000, p.116). I do not think that the most important consideration of such theories is that they develop knowledge of which participants are (or may be) unaware. This rendering of the work of a social scientist privileges their access to 'truth' and spurns the capacities of participants to reflect upon their own practices. A more valuable explanation is that the social scientist makes the project of “going beyond everyday knowledge” their central aim and their output, identifying and codifying these reflections to be shared with others beyond those who participate in daily life at the site of study.

As explained in Chapter 2, on one specific point this research also looks to test an existing hypothesis, that of the NSDM school on whether or not a specific voluntary standard can be understood as looking to achieve cognitive legitimacy within the market in which it works. The applicability of this case for testing their theory is ensured by the fact that NSDM scholars had selected The Gold Standard in the CDM compliance market as an example in their own work (Auld et al. 2009; Levin et al. 2009), so this research offers an update from the same empirical case.

Selecting a specific site to describe in detail provides only one narrative of the work of carbon markets and of the making of 'carbon.' The specifics of what makes this site a reasonable and interesting choice are described further below. The resulting project is one that can be validly supported from a critical realist or narrative interpretist approach

to ethnographic ontologies (Neyland 2008). In the interpretivist tradition, observing and creating primary data and including it into final texts is a means of “mediating frames of meaning” (Agar 1982, p.783) offering a Geertzian “fiction” (1973) where the narratives selected by the researcher and participants (and then re-constructed by the reader) offer a meaningful, persuasive account of action. Identifying and carefully describing the cases (Chapter 4), including primary data, quotes and detailed descriptions of observations where it has been possible (particularly in Chapters 5 and 7) allow at least some opportunities for the reader to observe and judge the interpretation of data that took place to result in the resulting analysis.

This type of post-structural approach incorporates ontological as well as epistemological groundings for the research:

***Realities** (including objects and subjects) and **representations** of those realities are being enacted or performed simultaneously... Shift the verb from making to doing – to **doing** realities – and we catch what is at stake... Since the real is relationally enacted in practices, if those practices were to change **the real would also be done differently**.*
(Law 2008, p.635 emphasis in original).

In this view, the world is understood as the continuous performance of practices (Hand et al. 2005), which we engage with (as readers, observers and as doers) through the stories through which we understand them. Representing the practices of carbon, showing them to be multiple and contextualised, offers an opportunity to contemplate on how carbon is performed and how it could be (and is) done in multiple ways.

In contemplating the porosity of epistemological decisions for their ontological impacts, how this ethnography is shaped as a text as well as a methodology is important to recognise. I fully acknowledge and wish to highlight the determinant role that the interests and experiences of the researcher must play within the construction of the boundaries and focus of all research (Haraway 1997; Schneider 2002). However, in the course of writing up this research, autobiographical and reflexive sections have been limited to the present chapter and the conclusion of this thesis. I chose this as most appropriate format for the topic given its potential audiences, who may be from academic disciplines and professional backgrounds less used to a strongly personal authorial voice as a valid style of academic writing.

3.3.1 Ethnographic case studies

Geertz, in defending a case study approach to research, commented somewhat derisively that generalisation “does indeed simplify matters. It is less certain that it clarifies them” (quoted in Flyvbjerg 2001, p.133). Stake (1995), on the other hand, manages to summarise the value of both qualitative case study work and large scale quantitative work, recognising the possibility for “the emergence of meaning from the repetition of phenomena... [and] the emergence of meaning in the single instance” (p.76). While case studies may not generate incontrovertible “proofs,” they can be an effective method of learning about the world (Flyvbjerg 2006, p.221). Writing within sociology has long used and respected case study data as inspiration and basis for discussion and theorisation, particularly in STS. Law argues that “abstraction is only possible by working through the concrete... theory is done in the form of case studies” (2008, p.630). A case study approach therefore allows my work to sit comfortably within ANT literature. Furthermore, on the topic of carbon markets as a new, comparatively small but politically potentially influential site, specific value has been placed on understanding the precise technical detail and daily work of actors within the market by researchers that look to bear witness, as described in Chapter 2.

Ethnography, unlike case studies, has not been such a common approach within ANT research, although it does have a “special place in [the] heart” of STS more broadly (Hine 2007, p.658–60). With data from the observation of and participation in daily activities, as well as participant interpretations of events collected through conversations and interviews and representations that are produced in documents and texts, ethnography offers the researcher the possibility of being both an 'insider' and an 'outsider' within the research subject (Neyland 2008, p.17). The balance between being potentially more one than the other varies between projects (Junker 1960, quoted in Neyland 2008, p.80), with some research conducted by those already profoundly engaged with a subject (e.g. G. W. Smith's (1990) work as an HIV positive gay rights campaigner) or others choosing only to observe (as with Harper (1998) at the IMF), and many possible variations between the two. The present research was at neither extreme: I entered carbon markets only as part of this research, but worked as an intern to participate on a daily basis with the work of being a standard at both organisations in the current study.

The length of time spent doing an ethnography links to (although is not the only determinant of) insider/outsider status. Typically, there is the perception that 'the longer the better' in terms of time spent at the ethnographic site, with some projects lasting for many years (Neyland 2008, p.90). On the other hand, others have argued that a couple of weeks is sufficient and valid to gain useful insights (Harper 1998). This research, with observations for 9 months (7 months as full time staff, 2 months as part-time) at The Gold Standard, one day a week for three months at Plan Vivo, and continued contact with individuals from both organisations for a further 18 months, falls somewhere in the mid-range. This time frame was largely decided by funding opportunities, and a recognition once in the field that 'researcher saturation' rather than data saturation had been reached. It was clear to me that more time in the field would have led to more insights, but far more than I could feasibly fit in one PhD project. Therefore after nine months at The Gold Standard I felt that I had enough material for the present purpose.

In this project, the decision to undertake an ethnography was motivated by a range of factors. The lack of previous in-depth study of the activities of voluntary offset standards in terms of what they do (rather than comparisons of what they certify about offsets) demonstrated a clear gap for empirical research within the literature (on carbon markets, and on voluntary standards). As an administrative activity in an industry that is largely business-to-business and with a role that incorporates lots of work that is not immediately visible to outsiders, entering the offices was an appealing route to collecting a type and quantity of information – MacKenzie's "nuts and bolts" – that would not be available through other means. It seemed intriguing to work within the administrative offices of a standard, rather than with their 'on the ground' implementation at project sites as Loconto (2010) had done. The lack of public visibility of much of standard work applies to voluntary standards more generally, even in markets such as tea or chocolate where at least the products are more familiar to most people. It thus seemed plausible that in this case, an ethnographic project could meet at least two of Hess' aims for ethnographies in STS; to display a "deep knowledge" of their field, and contribute as research that seeks to acknowledge and understand the political and cultural within scientific and technological domains (Hess 2001).

3.3.2 Institutional ethnography

Hine picks out two further criteria as particularly important for ethnography: to surprise and to subvert the obvious (Hine 2007, p.661), celebrating research that offers novel findings and encourages readers to re-examine what might be assumed to be ordinary. One way this study meets these aims is by undertaking an ethnography of organisations, not of a social group. As most vividly articulated by D. E. Smith (1978; 1997; 1999; 2001), this starting point can already subvert what is taken-for-granted about where ethnography and sociology can happen. Simultaneously, it challenges the assumptions about what an organisation – such a ubiquitous organising category of modern Western life – is, by looking to observe it:

We talk of these entities [organisations] as objects or beings without finding their existence problematic, but as soon as we approach them, they dissolve into the air... The problem of how what is thus named comes into being out of the located ephemeral of people's everyday doings is bypassed.

(Smith 2001, p.163).

An ethnography of an organisation does not take this bypass. It looks to go “on the small roads, on foot” (Latour 2005, p.23) to examine what it is that is done (by people and texts, according to D. E. Smith, and everything else, Latour would have us add) to make and sustain something that becomes recognised as an organisation. This is the subject of Chapter 4, and part of the project of acknowledging actors (like organisations) are also assemblages (see Chapter 2).

It could have been interesting to interpret 'a voluntary offset standard' as a set of rules or document, rather than an organisation, similar to Harper's ethnography following the movement of documents around the IMF (1998). However, this was less appealing to me. Significantly, it would have been difficult to avoid an imposition of a unilinearity to the life of a set of rules (assumed as: invention by a group of experts, codification and acceptance at a standards organisation/the UN, implementation on project sites, corroboration by auditors) that, as Chapter 5 demonstrates, is not always accurate for carbon offsetting, but that would have been tricky to get away from in a piece of writing that needs to somehow have a start, a middle and an end. Furthermore, particularly in the literature on voluntary standards more generally, there is already much more

literature available looking at standards from outside their organisations than from inside (e.g. Loconto 2010; Cashore et al. 2004), talking to those who implement or choose to buy or promote them (Fridell 2009; Jaffee & Howard 2010; Lovell et al. 2009) rather than those people, texts, organisations and practices who 'are' the standard. The idea of attending to the potentially “problematic existence” of standards as institutions, as well as standards as sets of rules or technologies, made the final design of the project appealing in an subtly subversive way.

3.4 Case selection

The decision to focus on standards in the carbon market led to an investigation of the plethora of standards available. In early 2010, there were 17 standards for voluntary carbon offsets (Hamilton et al. 2010) (see Annex 3 for list of standards relevant by 2012). Due to the lack of social or local biodiversity concerns as a typical feature of carbon (Newell & Paterson 2010; Bridge 2011) but a potential feature of carbon when it was enacted as offsets (Olsen 2007; UNFCCC 1998) I was interested in finding cases where SD was an explicit part of the organisational mandate or concerns as a way to focus my study. The mentioning of The Gold Standard as the leading social and environmental voluntary offset standard in other research (Kollmuss et al. 2008; MacKenzie 2009; Levin et al. 2009) had made it a clear early frontrunner, which was confirmed through the process outlined below.

I used a number of criteria to identify standards that would fit my research interest (see Figure 3.1). First I excluded those who, although they were being named in voluntary market reports, had not certified any projects (e.g. Climate Leaders Offset Guidance and Climate Change Standard). By far the most important measure for this research was whether or not there were attempts to quantify *or* market environmental or social aspects of projects as part of the standard.

The size of the organization was included as a criterion out of consideration for the type of research that I wanted to conduct. Attempting a medium-term ethnography on an organization with a staff of one or two people seemed implausible, which was borne out with the useful results of piloting an ethnographic method at Plan Vivo (see below). The burden and impact on the organization of an extra person, and the scrutiny of the

individual actions of so few 'natives' seemed like it would turn the study from sociology to something closer to psychology. Information from contacts working in the carbon offset market suggested that Plan Vivo and CarbonFix were run by 1-2 people. VCS was slightly larger, with a core administration team of 6 or 7 staff. In contrast, I had heard that The Gold Standard had a larger team and was undergoing expansion in 2009-10.

Figure 3.1: Offset standards as potential research sites¹³

Voluntary offset standard	Identified in academic carbon market literature	Notable focus on SD	Staff of 3 or more	Sufficient number of projects in certification process*	Research plausible without flying	Offset scope beyond forestry
Optimal:						
The Gold Standard	x	x	x	x	x	x
Potential:						
Plan Vivo		x			x	forestry
CarbonFix		x			x	forestry
CCB		x	?	? (3%)	USA	x
Social Carbon		x	?		Brazil	x
VCS	x		x	x	US	x
Undesirable:						
American Carbon Registry			?	9%	USA	x
CCX			?	? (3%)	USA	x
Climate Action Registry			?	x	USA	x
Greenhouse Friendly			?	? (3%)	Australia	x
VER+			?	? (2%)	?	x

*Percentages are the market share of each standard by transaction volume in the voluntary over-the-counter market. No response indicates 1% or less of total transaction volumes.

Source: Data from Hamilton et al. (2009, p.10).

¹³ The standards included reflect the state of the market at the time of designing the project. Annex 3 gives more in-depth descriptions of the standards active by 2012.

Size was also a matter of the number of projects a standard had in its certification process: if they certified fewer projects it was less likely that within my time frame of research I would see all of the stages of certification from the point of view of the standards (see Chapter 4 on certification processes). With hindsight, having fewer projects undergoing certification was only one aspect to this. A standard with a smaller pipeline of projects but working from only one office might have been a better way to manage this desire to see as much as possible of 'everything' involved in the process of making and being a standard. In the end, all of the standards organisations with an interest in SD ramped up their pipelines over the course of this research and would have provided data on all parts of their procedures, but in 2009 it was impossible to guess how far and how fast they would develop.

For environmental reasons I wanted to avoid flying as part of this research so I tried to choose a case that would not lock-in intercontinental travel as part of the research design. This made the Australian, American and Brazilian based standards less attractive. Plan Vivo, based in Edinburgh, The Gold Standard, with the administrative headquarters in Switzerland and CarbonFix, based in Germany were the most attractive cases under this criterion. Although the project was designed to stay focused on the administration of standards within their offices, the possibility of visiting a project was also appealing. I therefore took into account (although it was not a deciding factor) that both Plan Vivo and CarbonFix only certified projects outside of continental Europe, whereas The Gold Standard certified many projects in Turkey.

In the initial planning stages, The Gold Standard had come out as clearly the most appropriate, feasible and literature-relevant case available. The lack of plausible alternative cases that met all of these key criteria, the timescale of the research, and desire to undertake the project as a detailed institutional ethnography (“on foot”) as outlined above, meant that I chose a single dominant case model over a multiple case model for this research. Nevertheless, until access was granted at The Gold Standard, I maintained a shortlist of cases including Plan Vivo, The Gold Standard and CarbonFix, with VCS as an outside possibility. VCS, as the largest standard in terms of market share was an obvious contender in terms of research impact, but the standard regulations

and marketing in 2010 showed less of an interest in co-benefits and broader environmental concerns than the other short-listed standards. Its US base made it more environmentally costly to reach. Plan Vivo and CarbonFix both had downsides in that they were very small organizations, and both specialized in forestry projects. At the time of designing this research, forestry carbon was still seen as a particular niche of carbon offsetting, with a separate set of academic and practitioner literature (Walter & Kahlert 2010; Hamilton et al. 2008; Lopes 2009). I was more interested in offsetting as a sub-set of carbon, rather than adding an extra link in the chain to reach forestry, as a sub-set of offsetting, as a sub-set of carbon. By 2010-11, forestry had become much more mainstream within carbon markets, but at the time of decision-making for this research it seemed wiser to avoid a forestry standard as the main case in this research for my purposes.

3.4.1 Pilot study

Plan Vivo are based in Edinburgh and I had contacts who collaborated with the organisation, so although they did not meet all of my criteria (in particular for its small size and forestry focus), I approached them in Spring 2010 to conduct a pilot project before attempting to access The Gold Standard. The aim was to practice an ethnographic research methodology as I had never used it before, gain experience that would make me more attractive as a potential longer-term intern and credible as a researcher when later approaching The Gold Standard or any other standards, potentially lead to contacts that might help me access The Gold Standard and to collect data that could also be used as part of this research. The experience was helpful in practicing an ethnographic method. It allowed me to develop skills in working out how to translate daily life into research findings and analysis, insight on practical matters (for example, taking notes directly on a computer was more discrete and faster than by hand), and a first exposure to some of the acronyms, assumptions and meanings that reside in carbon markets. The data produced from this experience in Spring-Summer 2010 (described below) turned out to be extremely useful for framing and understanding later experiences at The Gold Standard. The data collected in this pilot became a smaller, counterpoint study within the final research.

I made it clear to Plan Vivo that the internship with them was an exploratory study, to

prepare me for an internship and longer ethnography with another standard, but also that I might want to use the data in my final project. I hoped to find contacts at Gold Standard through Plan Vivo (in the event, this did not happen). I felt that I could justify not using them as my main case in a way that the staff at Plan Vivo would understand and agree with – not wanting to burden a small organization with being scrutinized over a long period of time, and my own research interests being more directed towards in standard interactions with the CDM than specifically the forestry and land use sector – which made the explanation of why they were the pilot, rather than the main case, easier to present to them.

3.4.2 Accessing ethnographic sites

Despite the inevitable worries when planning an ethnographic study, in this case access was a painless process. With both organisations I cold emailed/called them, proposing my labour in exchange for access. At Plan Vivo, I had the contact of a mutual friend who also worked in carbon management who had been able to give me background on the staff and set up of the organisation, what they might be interested in me offering, and that I could then name drop in my first approach via email. At The Gold Standard, I did not have any connections (although I had asked at Plan Vivo and searched on LinkedIn to make sure) that could act as gatekeepers for me.

In determining the balance between observation and participation, I suggested to both standards that they should take me as an unpaid intern. Firstly, I thought it would make my request for access to the organization more likely to be successful, which was indeed the case. I also felt that once inside, I would gain a greater understanding of the organization by participating in it than by watching others at work. In an office environment in particular, most of the time is spent in front of a screen, perhaps communicating with the outside world or absorbing information, but with limited drama for an observer/spectator to watch. Especially with the advent of email, there are fewer conversations that a researcher can listen to, and it is a more complex technological question (and perhaps a greater invasion of an individual's privacy) to ask for full access to their email account. Offering to work for the standards was also a reflection of my personality and lack of experience in ethnographic research. I felt that being an intern would in some sense guarantee me data through being active and have more chance of

keeping me engaged in the research in a way that I was less sure about from observation.

Initial contact was made with Plan Vivo by email, followed by a meeting at their office with the Governance and Operations Director to explain my research interest and the type of data I would want to collect, and propose activities I could do for them in return as an intern. At The Gold Standard, having discovered there was no formal internship scheme, I telephoned the administrative office at the end of May 2010 rather than emailing, because I felt the nature of what I was offering was so unusual that it would be easier to gauge and adapt my proposal in a conversation rather than by email. The initial phone call was extremely positive. I followed it directly with an email including my CV, a brief outline of my research and a summary of what I was proposing (a full-time, unpaid internship for 6-12 months at their Geneva office, to start October 2010).

Out of my control but in my favour, both organizations had frequently received interns in the past, but both happened to not have any at the time of my request. For my part I emphasised my personal profile in ways that I knew would be attractive to their industry: English as a first language, professionally proficient Spanish, high level analytical and writing skills and previous employment in environmental NGOs and political organizations.

In presenting my research interests to the organizations I made sure to emphasize that I was not looking to write a critique of carbon markets or evaluate their standard. I underlined the sociological, academic nature of my interest, the time-lag that would inevitably occur between an internship and any future publication, and the efforts I would make to protect the confidentiality of any commercially sensitive material. Given the media exposés on carbon markets (Pearce 2008; Friends of the Earth 2009; Friedman 2007) I thought the organizations would be more sensitive to having someone investigating them than perhaps a more resilient, developed industry. While I was careful to highlight what it would *not* be (an evaluation or critique of the practices of their standard versus others) I was also conscious of remaining vague about the exact nature of my study. This was in part to allow myself flexibility as I expected that themes and topics would develop and possibly change over time (which they did), but also to avoid giving my colleagues too many prior warnings about what I would be looking for

or listening to, to avoid influencing their behaviour or causing them to self-edit or self-censor. This open agenda on my part sometimes led to bemused confusion from staff once I was there about what I, as a social scientist, would be interested in or knowledgeable about (from HR, to management processes, to SD procedures, to stakeholder perspectives). However, this approach allowed me to be both truthful and discrete in acknowledging how my experiences at both standards shaped my research interests.

I received no direct remuneration for the work that I undertook with the standards. I preferred to rely on my PhD funding for a combination of reasons. I thought I was less likely to get access if I requested payment from the organisations. I also felt that I could have more freedom to observe as well as participate if I was inside the organisations within a role as an unpaid intern rather than a paid employee – although over the course of many months at The Gold Standard, the workload and habituation to office life made the difference minimal at times. In terms of research ethics, I felt that my findings might be viewed as more credible if I had not been a paid staff member at either organisation. As discussed below, there were two external events at The Gold Standard where I received remuneration in kind for my participation outside the office.

3.4.3 Pilot data and reflections from Plan Vivo

I worked one day a week at the Plan Vivo office from May to July 2010, translating reports, marketing materials and standard documentation between English and Spanish. I was able to observe conversations in the office (shared with another organisation, also active in carbon offsetting), a meeting with consultants for a project under development, discussions by telephone with certified projects, staff being interviewed for a Masters student's research project, and some of the training for a new staff member at Plan Vivo. I also interviewed the Governance and Operations Manager in a semi-structured, unrecorded (due to background noise) interview at the end of my internship.

The pilot experience proved extremely valuable both methodologically and empirically. Firstly, it established that it was possible for me to observe activities that I could turn into data and provide interesting reflections upon. Only working one day a week for such a short time meant I felt I had missed out on meetings, conversations and events,

and the length of time felt too short to have a definite grasp of the organisation and all of its activities and assemblages. This confirmed my desire to focus on one case, and work there full-time over a longer period. The small size of the organization (2.5 staff, with the inclusion of the new member) reaffirmed my expectations that a larger organisation would be easier to observe. The time at Plan Vivo gave me an much faster and greater understanding of some of the discussions and contemporary issues of carbon markets than time spent reading market publications had been able to offer, in particular when I got to listen to market participants discuss topics amongst themselves rather than only responding to questions in a more formal interview setting with an outsider. This feeling galvanised my faith in the value of approaching the carbon markets with an ethnographic methodology.

The translation work ensured I was reading documents in great detail, and reflecting on the precise meanings that Plan Vivo were giving in their presentation of the standard. In the act of translating, I was responsible for shifting and assigning meanings and values. The work made me more aware of potential dangers of (over) analysing work that has been written by a non-native speaker, the lives of texts which will be or have been translated and more generally the impact of moving from a mono-lingual to a multi-lingual working and research environment. At The Gold Standard I was also in an environment where the majority of the employees (and Standard stakeholders and users) did not have English as their first language.

I produced a short piece of writing to reflect on the pilot experience, which I sent to Plan Vivo staff for comment and to confirm there was no commercially confidential data included (see section 3.7.2). This was helpful in learning that staff might be surprised by the breadth of material that I might consider data. On seeing the writing, one staff member commented that it was “funny” (in a positive way) to see it was the “office chat” that I had chosen to write about, rather than the technical discussions. Sharing the analysis with staff also allowed me to incorporate their reflections on some of the themes I had raised, producing a further source of data. The initial work with Plan Vivo focused my attention on specific topics that were maintained and refined throughout the research. In particular: how standard staff perceived their role vis-a-vis offset projects (Chapter 4) and the idea of a “carbon orthodoxy” (Chapter 5).

3.5 Summary of data from The Gold Standard

From the beginning of October 2010 until the end of March 2011, I was a full time research intern at The Gold Standard. From April-June 2011 I continued with part-time observations and some participation in projects that I had developed as an intern. I was given a three day induction to the organisation and further training on specific activities. I observed and participated in the daily workings of the Geneva office of the organization. As explained in Chapter 4, the geographical spread of The Standard meant that I was physically part of the head office which housed the administration team and management, with the technical team based in Delhi (except the Technical Director, in Geneva), and regional managers (who have most contact with projects) each in offices in the continents they are responsible for.

I was given the role of minute taker for internal management meetings and Board meetings. Having this official task gave me access to these meetings, ensuring that I was always kept informed and invited to them and that my presence was seen as normal rather than an intrusion. My other tasks as a staff member included editing texts for publication, assisting in the preparation of presentations for a variety of external audiences, reviews of the sustainable development aspects of project desk reviews, internal and market research tasks, development of new policies and documentation that would form a part of the Standard rules and toolkits. I also observed some technical meetings (both the Secretariat technical team, and the external Technical Advisory Committee) (see Chapter 4) and marketing meetings. I collected a large number of documents including internal strategy documents, technical memos, emails both internal and with external agencies and individuals and publicity materials. I also made use of carbon market news reports and analysis which were circulated amongst staff and available online.

Staff at the Gold Standard took the participant side of my role seriously, and expected me to internalise and contribute to the organisational mission and activities. This acceptance as one of the team meant I was allocated to certain tasks, so I had first hand experience as Gold Standard team member on some aspects of their work. My

incorporation was positive in terms of receiving hands-on, pragmatic and detailed explanations of activities or processes. Having experience as a participant of some of the processes and decision-making gave me a greater understanding of the organisation and insight into some of the rationales that are used that I think would not have been possible to gain otherwise. I was given permission to be a researcher during office hours as well. I could attend meetings to observe even where they were not necessary for me as an intern, although this had to be balanced against my workload and schedule of activities that, as staff member, I was also expected to perform.

The Gold Standard staff were keen to make use of me for developing policy work, reviewing sustainable development aspects of project documentation and marketing. I was presented to outsiders on occasion as a “Social Scientist” (sometimes I could hear the capital letters) to qualify my presence. I noticed a high level of self-awareness from some staff members that, as predominantly engineers, they saw the work from a particular “engineers perspective” which they expected me not to share, and sometimes to be able to counter-balance. They also expected my university degree to lead me to be able to make informed comments about developing sustainable development indicators and working with local communities in developing countries. I felt that their understanding of what social scientists are trained to do at university was sometimes inaccurate, but my previous work experience with environmental NGOs and in politics meant that the majority of the time, I felt comfortable and sufficiently qualified to undertake the tasks they gave me. Where this was not the case, I asked for assistance or for alternative tasks.

3.5.1 Special events

3.5.1.1 Induction

I was inducted into the organization along with two other new staff. The induction programme lasted three days, and included the background of carbon markets, carbon offsets, the processes of The Gold Standard, the technologies that are used by the organization, and information about project types and stakeholders with whom The Gold Standard look to engage. The induction demonstrated that all staff members were thought to need an understanding of carbon offsetting in general, the process that projects go through with Gold Standard to become accredited and some of the

monitoring procedures of the organization.

3.5.1.2 Team Meeting

In November 2010 there was a team meeting, a five day event at a conference centre in Switzerland to bring together all Gold Standard staff (minus two who could not attend for personal reasons). This was argued as necessary for the organization as it had grown from a staff of 7 to 26 in a period of a year, with the creation of a marketing team and a new CEO from May 2010. The event was designed to make sure all staff were “on the same page” in terms of understanding the priorities and mission of the organisation. The aims of the meeting were to define the organizational strategy for the Standard; have face-to-face discussions on particular technical issues; allow staff to get to know each other in person; and explore ways of working together more efficiently.

The decision to hold a team meeting was a reflection of the high awareness from staff of internal change (in terms of staff members, but also organisational priorities and activities) at the The Standard during my research, in particular related to the appointment of a new CEO. This sense of change made it easier to access staff ideas about the purpose, legitimacy and potential of the organization within this research. The team meeting allowed me to meet almost all of my co-workers face-to-face, provided sets of focus group style data discussing topics that turned out to be highly relevant to my research and that were conducted without me having to organise them, interrupt the work of The Standard or impose my research agenda onto participants. It was also an early reminder that in almost any organisational case study, staff turnover, market conditions and politics are always changing, so research must find ways to acknowledge and capture dynamic organisational structures or activities.

3.5.1.3 Offset project visit

In January 2011 I participated in a Standard event in Turkey, involving myself, the Turkish Gold Standard Regional Manager (based in Turkey), and the Head of Stakeholder Engagement (also based in the Geneva office). The trip included a one day workshop organised by The Standard with Turkish environmental NGOs, site visits to two offset projects, and other meetings with project developers, NGOs, auditors and people in communities who live near offset projects. For all three staff it was a chance

to see some of the physical manifestations of a carbon offset – visiting hydroelectricity dams in rural Turkey – to gain a better understanding of the specific issues and barriers facing the Turkish market for producing and consuming offsets; to collect marketing materials (quotes, photos) and understand the position of the environmental NGO community in Turkey on renewable energy development.

Despite the fact that this research was not aiming to describe how a carbon market standard or carbon offset projects were accepted or implemented, I felt it was beneficial for my research to visit some project sites and watch some of the processes that I had read about – and even participated in re-designing – in action. Most other staff members (and all of The Standard technical team) had conducted site visits, and their input in discussions would sometimes make reference to these personal experiences. While projects and regions differ greatly, I felt that having visited at least a couple of projects I was better able to understand how processes and methodologies that were being discussed and codified related to activities undertaken at project sites. It was also an opportunity to observe how The Gold Standard and the idea of offsetting was received by a small number (but wide variety) of external actors.

Observation during the visit was necessarily limited by the language barrier as I do not speak Turkish, and both I and the Head of Stakeholder Engagement were heavily reliant on my Turkish Gold Standard colleague for translation in many of the smaller meetings. However, there were no similar events engaging with such a range of audiences in any countries where I could have spoken the local language during my time at The Gold Standard. The language barriers, packed itinerary and short duration of the visit (four days) meant that it was not possible for me to interview individuals specifically in relation to my research. In planning the trip, I had been thinking about trying to include interviews (in particular with project developers undergoing Standard certification, and auditors who apply Standard rules). This would have undoubtedly been fascinating data, but given the decision to focus on standards as organisations from the inside, rather than their interactions (as rules or institutions) with other actors (people, objects and institutions), it also felt like a data set that was not vital for the focus of my research.

The transport and accommodation for the trip were paid for by The Standard. The offer

was made by my line manager because it was recognised that my visit was going to benefit the organisation as I co-facilitated a workshop and interviewed various stakeholders about their interactions with The Standard. It was also a form of thanks for the time and work I was giving them as an intern in Switzerland. Before I accepted, I thought about whether them funding the trip would make any difference to my behaviour and capacity to give time to my research as opposed their priorities while I was there or once I got back, and decided that it would not. This was mostly due to the busy itinerary of the trip: there was not going to be time to interview stakeholders as a sociological researcher with my own priorities rather than as a Gold Standard intern. The language barrier, isolated locations of project sites, and recognition that although implementation was interesting, it was not my research priority, meant that organising or extending an independent visit was not practicable as a priority within the financial and time constraints of this research.

3.5.1.4 Technical Advisory Committee meeting

The Standard held one longer physical meeting of its Technical Advisory Committee (TAC) (experts in technical issues relevant to carbon markets who advise The Standard) each year, to supplement the monthly 2-3 hour meetings that were held using online software. In June 2011, five of the nine members of the committee, plus three Secretariat staff held a two day physical meeting in Barcelona, with other TAC members joining for some of the discussions through Skype. The meeting was to allow in-depth discussions of a number of technical issues on specific methodologies and The Standard scope.

I was present to observe the meeting, but paid for my own transport and accommodation to attend the event as my presence was not directly useful for The Standard. Some of my meals during the visit were paid for by The Standard. During meetings I was a silent observer, but outside of the formal discussions I participated in activities with Staff and TAC members, some of whom I had already interviewed as part of my research.

The nature of the meeting (over days rather than hours, and in person) meant that topics of discussion could be handled at greater length and including more discussions reflecting on how the issues and The Standard fitted into wider features of the carbon

markets or questions of development. It also allowed me to hear Secretariat staff present internal discussions to insider-outsiders (i.e. TAC members). I made sure to also attend de-briefs of this meeting that were carried out with Secretariat staff (in particular, the Secretariat Technical Team) after the event. Hearing the de-briefs was useful as it allowed me to hear how discussions were analysed by Standard staff, and gave me confirmation that I had correctly understood some of the highly complex technical discussions.

3.6 Multi-site and post-site research

The organisational structure of the Gold Standard determined the shape of some of the ethnographic activities I undertook. The impact on social science research of international co-working has been discussed by Parry, calling it “multi-site and post-site” ethnography (1998, p.2151). The traditional idea of ethnography as following people around, watching what they do and to whom and how they speak cannot apply straightforwardly in the digital age. I was based at the Geneva office of the organisation, which had between 6 and 8 staff members (including me) during my time as an intern. The rest of the team were located in eleven different countries across five continents. A large percentage of staff time was spent on Skype, telephone calls and emails to other team members, stakeholders and others external to the organisation. Almost all internal meetings involve online communication programmes to include staff members in other countries. The organisational diary had to take account of time zones and different national holidays (not to mention revolutions and natural disasters) around the world. But face-to-face contact between staff members from different offices also occurred during my research: there was a whole team internal meeting which all but two staff attended in autumn 2010. Staff within some regions (e.g. those based in Europe, those based in North Africa and the Middle East, those in North and Latin America or those within Asia) saw each other on a more regular basis. Staff in different regions also had opportunities for face-to-face contact with stakeholders and project developers with direct meetings or at industry events, although most contact was via email or telephone.

It was mentioned by some staff that it took more effort to remain aware of what was going on in regions with only one or two staff members, or what other parts of the organisation were doing than they would have been if they were located in the same

office and had the possibility of passively finding out about new activities or changes. These issues also applied to my research. It was sometimes harder to understand the dynamics and direction of a discussion when many of the people were not present in the room, and important Gold Standard activities could go less noticed by me because they were located on the other side of the world, even though they were within the same, relatively small organisation. With hindsight, it would have been interesting to spend time with the technical team as well as administration, but this would also have been difficult. Being at their office (in India) would have involved flying, and I observed that amongst themselves they often moved in and out of English as the working language, so my presence and desire to understand (even if not to participate) would have impacted their working practices or I would have missed discussions.

The multi-sited nature of the organisation was also multi-lingual and multi-cultural. Staff members were conscious of this, and made allowances for it. All staff were fluent in English and this was the working language of The Standard, but some discussions could happen in other languages (for example, within the technical team, or between staff at the China office) and Regional Managers in particular would often be conducting business in other languages (e.g. Turkish, Chinese, Spanish). Similarly, staff occasionally identified differences in ways of negotiating and disagreeing that related to cultural expectations of different team members. For example, some staff would present alternative options on a topic to avoid more direct confrontation or explicitly stating that they disagreed. Other colleagues interpreted this behaviour as part of cultural differences in appropriate ways of negotiating. Being aware of these differences became relevant in my data analysis at times in order to understand the trajectories that discussions had taken and how resolutions had been found.

3.6.1 Creation and storage of data

Data in this project consisted mainly of digital documents, texts and reports from the standards and others in carbon markets, and my own fieldnotes. These were usually typed directly as the majority of time I was in front of a computer, even in meetings. In some circumstances, particularly in Turkey, fieldnotes were made by hand and later typed up. Minutes from meetings were stored as separate documents from my fieldnotes, labelled with the date and meeting name, as were the typed transcripts of recorded

interviews. The fieldnotes included almost verbatim minutes of meetings and occasional office conversations as well as reflections and analysis made during the fieldwork. All data was stored using a password protected online storage system that allowed access from multiple sites. A copy of all data was also stored on an external hard drive and regularly updated in case of data loss or corruption.

3.6.2 Combining methods and data

As well as observation and participation of discussions and meetings, this research made use of texts, documentary analysis and interview data. As with all types of mixed method approaches or triangulation, attention needs to be paid to the epistemological and ontological foundations of the study to ensure that methods are combined appropriately (Blaikie 2000, p.267). Triangulation occurred in this project in the form as checking that I had understood the nature of technical discussions by reading standard rules and updates as they were published, for example. In other contexts, texts were actors, with traceably independent roles and contributions to the making and doing of offsetting (Latour 2004; Smith 2001). Chapters 4, 5 and 6 include more detail on this interpretation of the texts of The Standard and other organisations.

Following Mathison (1988) I see combining information sources and data collection methods as a way to generate complexity rather than always providing a bigger evidence base for claiming absolute truth in any one account or claim for wider generalisability or validity. A more complete “embedding” of information from different sources within the context of multiple forms of evidence (Mathison 1988, p.17), what Richardson & Pierre (2005) refer to as “crystallisation” was the aim. As they put it “crystallisation provides us with a deepened, complex and thoroughly partial understanding of the topic” (2005, p.963). This is most noticeable in Chapters 6 and 7, where I look to offer multiple co-existent versions of offsetting and SD, and what might be appropriate as the boundaries of a voluntary standard, rather than try to present a synthesis of the options that would resolve the matter into one clear answer to what it means to be doing SD in offsetting, or standardising for offsetting. This complements the ontological positioning of this research of recognising that as stories inform practice in enacting reality, both the stories and practices can be multiple.

3.6.2 Interviews

I conducted 14 semi-structured interviews (see Annex 2 for questions and a list of interviewees) with staff, and Gold Standard TAC and Board members to coincide with the end of each of my internships. Before the interviews, I had observed online or face-to-face meetings where all of my interviewees had participated, but some of them I never met face-to-face (all Board members apart from the Chair, who I had met at the team meeting in November 2010), and some I met only after interviewing them (TAC members at the TAC meeting in June 2011). The interviews were designed with the idea of “crystallisation” as well as corroboration in mind, offering a space for those involved in the daily practice of both standards to formally and explicitly address the concepts, ideas and framing of my research. I designed the interview questions to encourage and allow individuals to express their personal opinions as well as organisational standpoints, and give interviewees the opportunity to directly respond to some of my research questions, as they are also participant-observers of carbon markets.

Using a semi-structured technique for interviews, I had a prepared list of main questions and some prompts for use with all respondents. However, as the amount of time available and how respondents interpreted some questions differed, I altered the order of questions in some interviews to allow for a more natural flow of discussion. In three interviews, when I asked about where The Standard could or should be responsible for during the lifecycle of a carbon credit but did not prompt specifically on the subject of offset end-buyers and how they calculate their offset needs (see Chapter 7), the interviewees did not bring the subject up themselves. I had not thought to prompt on it before the first interviews because the theme was at that stage only just emerging as a potentially interesting part of this research. As this trend emerged – and the theme was developing in my analysis – I changed the prompt on the question and specifically mentioned end-buyers and offset retirement as an example of where The Standard could get involved and asked interviewees their opinion on it (see Annex 2).

The fact that, with hindsight, this data appears to be absent is a reflection of how themes emerge over time in research. I did not email the question to those respondents who had not discussed the matter in their interviews because, as the data from other interviewees

had shown, it had been a complex question for them to answer. I did not think a short, out-of-the-blue email concerning only this matter would result in data that I could easily compare to responses that came out of verbal discussions which moved through territories that, as one respondent put, it were “pretty deep and philosophical for lunchtime on a Wednesday, that's more of a Friday 2am conversation!” (Interview 5, 2011). As I was not looking to confirm one interpretation of the data I had collected, but rather to demonstrate its diversity, I did not feel it was necessary to increase my sample size.

As discussed above, at Plan Vivo the interview candidate was the Operations and Governance Director, who had worked for the organisation as the sole full time staff member for several years. At The Gold Standard, I interviewed a selection of Gold Standard Board members, Technical Advisory Committee members, the former and current CEO and staff members. The Board had nine members at the time of the interviews, as did the TAC (Technical Advisory Committee), and The Standard over 25 employees. To select interviewees, I chose interviewees who had been active in their Standard participation and had had a longer engagement with the organisation. Amongst the staff, I selected one person from each department except administration (Technical, Regional Managers, Marketing, Stakeholder Engagement, New Regions/Legal), decided by a combination of seniority, length of time they had been with the organisation, insight into particular activities of the organisation (the importance of particular regions, overview of organisational strategy) and availability. I felt that interviewing all staff and advisors/board members was not practicable as they are extremely busy people, and I already had eight months of ethnographic data. In the end, conducting interviews was significant in shaping the final project as it allowed the analysis of the lifecycle of carbon offsets in Chapter 7, a topic that had only become pertinent precisely for its lack of visibility in my ethnographic data. More interviews would undoubtedly have added more and different valuable material, but in my final work I wanted to highlight the ethnographic aspect of my research over a project that could have been entirely interview based.

Five interviews were face-to-face and the rest using Skype (without video), except for one that due to technical problems was a mixture of Skype and telephone. The TAC,

Board and staff all use online software for the majority of their interactions with and within The Gold Standard, so using Skype in their professional capacities was not an unusual experience for them. I chose not to request a videocall for any online interviewee. I think being able to see the respondent on the screen would have made the online interviewing experience more similar to a face-to-face experience, with more or different information through verbal cues and expressions. However, I decided that the potential technical problems that videos more often incurred were more of a risk for breaking the rapport of interviews than the 'thinner' but more reliable audio-only approach. It also felt somewhat intrusive to request it; it was not how the calls at The Gold Standard were organised, so it would have deviated from what felt normal about interacting online at The Gold Standard. This was not only a question of technology, it was also partly due to the techno-geography of the organisation. Standard calls often included at least one developing country site, and the state of mobile technologies meant that sometimes even those in developed countries had problems just with audio. As a result, it was the norm to only use audio at The Standard, and I adopted this approach for the interviews. No interviewee suggested using video before or during the calls.

In quoting interviewees, I have chosen to number the interviews and note the job title (with reference to their work at The Gold Standard/Plan Vivo) of each interviewee (see Annex 2). Interviews are referenced by number, but where I think it is relevant I also note the job title of the individual in the text to give context to their quote. In some places I have made quotes anonymous. This has been done in order to allow data to be included that was too sensitive to use if it were attributed, either on the request of the organisations involved or individual interviewees. While this may reduce the rigour of the data in that it does not allow for the reader to connect all of the statements to speakers, it was deemed a worthwhile compromise between participant confidentiality and research validity (Baxter & Eyles 1997).

3.7 Reflections on the research process

3.7.1 Going Native

Having to make decisions on behalf of the organisation myself, and having the right to

question the decisions of others as someone who must sign off on an agreed organisational position means I had a personal, more comprehensive understanding than I think I would have done by only observing. However, it also meant that it was at times difficult, particularly while I was still an intern, to respond to information as data to analyse rather than work to do. As Bourdieu phrases it, being a “participant-objectifier” creates “a kind of doubling of consciousness that is arduous to sustain” (2003, p.281).

I could see this issue in play while I was still an intern, and negotiated a move to part-time hours for the last two months of the internship as one way to help in disengaging my intellectual self as a staff member and (re)turn to academia. On some issues, it took months to intellectually extricate myself sufficiently to see the sociological value of the experiences and documents that I had only related to at the time as a part of The Gold Standard team. The time it can take for information to transform from experience into data is familiar to ethnographers and qualitative analysis in general (Neyland 2008). This particular problem had not been encountered with my work at Plan Vivo, I think because I was much less engaged with the daily work of taking decisions and dealing with the consequences of making and doing the standard. Although I undertook tasks for Plan Vivo, I did not reach a point of feeling like I worked for Plan Vivo in the same way as I did at The Gold Standard.

Working closely with other staff members and over an extended period of time also led me to build relationships and engage in the work in ways that raise a different aspect of the issue of “going native.” Parry (1998, p.2159) discusses the emotional and intellectual implications for the researcher when extrapolating data from relationships that have come to develop beyond what has been signed for in confidentiality agreements or consent forms. Gaining distance by stopping working at The Standard while analysing and writing up this thesis was I think vital in finding the academic line of argument for the thesis. However, I maintained informal contact with some staff, and this meant that I could continue to ask for or check back on data and stay updated on changes to the organisation and carbon markets more generally that aided during data analysis.

3.7.2 The ethics of consent and confidentiality

Consent to participate in this research involved four groups: the standards as organisations, other staff I worked alongside at either standard as individuals, interviewees, and people I came into contact with as part of my visit to Turkey in 2011.

3.7.2.1 The consent of an organisation

I approached both standards organisations making it clear that I wanted to write a PhD out of my experiences of working for them. However, as has been touched upon in discussions of chat as data, and what a social scientist was thought to be capable of doing or interested in, the nature of a sociological approach to carbon markets seemed often fairly opaque to those I was asking to participate in my research.

In the agreements from my side with Plan Vivo and The Gold Standard as an organisation I offered in writing before the start of the internship, it was confirmed that the organisation had the right to withdraw at any time and to review data before publication but not the right to editorial control. As a consequence, all published material that included quotes from staff in their professional capacities was sent to the General Counsel or Director of Marketing and Communications of The Gold Standard, and the Operations and Governance Director at Plan Vivo before being allowed in the public domain.

In addition to the research consent form that I had sent to The Standard, they required me to sign a Non-Disclosure Agreement (see Annex 5). This included legal and financial penalties if I released any data that the organisation deemed commercially sensitive or damaging. Used to dealing with other commercially oriented organisations rather than PhD researchers, the initially proposed agreement had to be renegotiated to allow me to discuss any of my data with academic supervisors and reduce the fine for any unauthorised release of confidential data to a sum deemed more reasonable to both sides.

Due to the limited amount of time I spent at Plan Vivo, there were fewer occasions where I felt aware that what I was listening to would be inappropriate to put into the public domain, perhaps with some minor changes. However, at The Gold Standard I

observed Board and management meetings over the course of nine months, as well as informal discussions of confidential matters. This freedom to roam was unnerving as well as liberating because it has meant that I had to make my own judgements on topics and proceed with analysis and writing, rather than being able to rely on pre-existing barriers to entry and the safety of knowing that someone else has already decided what was enough. It was a concern in the early stages of analysis that whole lines of argument or topics might be rejected by The Standard as too compromising. The process of preparing the data in different formats for conferences and papers and having this checked by The Standard was a useful process. It allowed for a testing of the waters (both mine, and theirs), giving them an idea of the style and topics of interest that this thesis would include, and me an indication of more or less where they might put the lines of confidentiality.

At certain points during the analysis and write-up, worrying over the degree of confidentiality became a burden, and at times probably led to me being overly cautious as to what I included in my work. However, this caution was also merited, as when final drafts of the thesis were sent to both organisations for checking there were indeed quotes and subjects that they deemed as too sensitive to be published. Friendly but detailed negotiations over wordings and editing ensued, and the final work I hope represents a satisfactory compromise. Some quotes and details I would have liked to have used have been removed due to understandable caution from the standards, but from my point of view there were no sections where the loss of empirical data meant I could no longer support the arguments I had wanted to make. I was careful during the writing of the thesis to make use of publicly available data (methodologies, standard documents, websites and presentations) alongside or rather than quotes from internal meetings or documents to support my arguments where possible to try to facilitate this. Another strategy was to represent internal discussions of technical changes where the changes had been implemented and publicised (see Chapter 5 and 6), meaning that the fact that the topic had been under debate at either standard was already in the public domain. Nevertheless, the standards exercised great caution with the disclosure of quotes from internal discussions.

3.7.2.2 Staff

As well as asking permission from the organisation, I asked all The Gold Standard staff to sign individual agreements to consent to participate in this research (see Annex 1). Asking for individual consent from all co-workers seemed a formality in some regards: as the organisation had accepted me, staff had had little choice but to work alongside me. Any unease they potentially might have felt about me scrutinising their work also had to be weighed up against the help I could offer to complete their tasks. However, asking for individual consent was recommended in university research guidelines, and I felt it also contributed to a demonstration of respect for them as individuals as well as simply Gold Standard employees. Had any of them refused to give consent it would have been difficult to discern what I still had a right to use within the agreement with Gold Standard and what, of their working actions, they could consider theirs to withdraw. How far the individual actions within a work context remain the property of the individual and at what point they become subsumed within the de-populated workings of the organisation (c.f. D. E. Smith 2001) is a legal but also sociological matter. In the event, however, this was not an issue as all staff members gave consent.

I asked for staff consent via email and near the end of my internship. I sent this out as a group email intentionally so that all staff would know that everyone was being asked. Particularly for staff members who worked alone¹⁴ I felt it was important for them to know that all staff had been asked to fill in the same form. I thought this would make it easier for them to broach the topic amongst themselves if they had any concerns or queries but did not feel comfortable to ask me directly. Waiting until near the end of my time was only possible because I already had organisational consent to conduct the research, and they had all known since my arrival that I was conducting research so I was in no way covert. For individual consent, it felt appropriate to wait because by that point most staff members had met me and many had collaborated on projects with me. Their consent was thus informed by their personal and professional opinions of me as a co-worker and individual, as well as an awareness of which activities or discussions I had been present for or participated in.

¹⁴ At the time, three regional managers and two other staff all work individually in different countries, a further staff member had already left the organisation and another was on maternity leave.

The consent form had two parts (see Annex 1), the first confirming that they had understood the general nature of my project as a sociological study of standards in carbon offset markets, the fact that I had agreed to offer confidentiality to the organisation, that they had the opportunity to ask any questions and that they accepted the use of their work or comments in their professional capacity as a Gold Standard staff member in my thesis. I included a separate second section which covered what I regarded as their private information, such as nationality, work experience etc. The agreement was that any such details would be confirmed with the staff member in question before being used, and that information like any private comments made about other staff members, the organisation or issues outwith my research would remain confidential.

During my internship no one expressed any unease to me at my presence as a researcher, although comments that showed that at times, people were aware of being watched in some way. For example, occasionally staff members suggested that I must have found a particular meeting or issue interesting because it was, in their mind, to do with sociology. These comments tended to occur when there were discussions about personal dynamics, internal organisational management issues or SD.

3.7.2.3 Interviews

A separate consent form was designed for interviewees. All of the interviewees were sent an email in advance requesting the interview and including a consent form explaining how the interview data would be used, and informing them that I would like to record the interview (see Annex 1). I also highlighted the fact that any data that could be considered commercially sensitive to The Gold Standard would be automatically protected from publication due to the Non-Disclosure Agreement that I had signed with The Gold Standard. At the beginning of each interview, the interviewee was reminded that the interview was being recorded and given a brief explanation of the purpose of the interview as part of my PhD thesis in Science and Technology Studies. For TAC and Board members, they were also reminded that I had been working at the Secretariat for the previous months – although they were told when I had sat in on their online meetings, because I did not participate and there was no video it was easy for them to forget that I had been listening. Finally, all interviewees were also told that their

responses would not be shared with any other staff members or interviewees in any identifiable manner except in my research. All interviews were recorded (except for the interview at Plan Vivo, and a telephone conversation that made up half of one interview, where I made as comprehensive notes as possible during the conversation to allow for a later transcript). All respondents were sent a full transcript by email to correct or amend within two weeks of the interview.

Before approaching members of the Board and TAC of Gold Standard, I checked with the CEO, Technical Director and my line manager (Head of Stakeholder Engagement) as a matter of courtesy, although I did not identify to any staff members the exact list of all interviewees. I hoped that by making Secretariat staff aware that I would be approaching some stakeholders, they might support my requests by mentioning it to any Board or TAC members they spoke to, or be warned if any of the members approached them to find out more information or confirm my status before responding to me.

3.7.2.4 Turkey

Although it goes against many research codes, I did not ask for formal written consent from participants to use information gathered from conversations during site visits and The Gold Standard workshop in Turkey. In the final thesis there are no direct quotes from these individuals. I specifically asked The Gold Standard Turkish staff member their opinion on asking for signed consent for my research, but they suggested it would be culturally inappropriate and offensive, and that verbal confirmation was more appropriate and adequate if I felt it necessary. This was stated as important in particular because on more than one occasion we were meeting with semi- and illiterate people, but was also said to remain true with those who we met who were literate. Furthermore, as I was there to conduct Gold Standard business rather than primarily as a sociologist researching their own work, it would be confusing. Their suggestion was that unless it was for specific formal interviews only relating to my research (none of which I had time to undertake), it would be seen as rude to ask for signed consent and could easily make people feel suspicious and uncomfortable. Conversations about the matter with other people during the visit (who worked in carbon markets and outsiders) corroborated this. I explained verbally to most people I met that I was a PhD student conducting research in the sociology of carbon markets or sociology and the

environment, and there were no objections. However, many times it also seemed like there was a fairly limited understanding of what the sociology of carbon markets (or carbon markets, or sociology) might be.

Cultural expectations and specific local and national histories change the meanings of documents and actions. Signing, attributing names and quotes to individuals, or asking people for their personal rather than family or company's opinion takes on different meanings in different contexts. It made me feel uncomfortable asking questions and noting answers knowing that I would want them to inform my research without specifically asking for signed consent forms as a way to demonstrate that people had consented. However, that discomfort may have simply been inverted and forced onto the participants if I had asked for written consent. In the end, I have not used any direct quotes or observations from this part of my ethnography, although I feel that the experience was enlightening and in indirect ways informed my research directions and findings.

3.7.3 Ethnography and contemporary research

A methodological difficulty for this research, as with any research that deals with contemporary issues, is that the subject matter does not remain static during the research process. The difference in expectations, actors and activities between the carbon market that I proposed working in, the one that existed as I conducted the fieldwork parts of the research and what was happening during the time I was writing up the project has been enormous; and greater than I ever expected.

To manage the scale of change that my subject was undergoing inside the research process, I had to accept that this research would be a historical document rather than a contemporary description by the time it was submitted. While it was tempting to try and time the data collection and writing to coincide with changes in the carbon markets, the rapid, unpredictable and dramatic changes that occurred during 2009-12, with the financial crisis and successive failures to negotiate a treaty that could supersede Kyoto at an international level meant that this was too difficult to predict and manage. Instead, I took my funding timescales as the most pragmatic determinants of timing, and I designated a cut-off date for primary data collection in the summer of 2011 to allow

myself just over one year to write up the project, but combined this with ongoing observation of carbon markets and contact with The Gold Standard to at least be able to note where issues may have shifted or be likely to change by the time of writing or publication. This was important with reference to my use of data: public statements by The Gold Standard and other organisations made over the course of 2011-12 meant that portions of my data were no longer confidential and became usable as part of my analysis, although the timings of some announcements (for example, The Gold Standard moving into forestry, announced in October 2012) meant that although interesting discussions were potentially no longer confidential, I did not have the time to include them in this thesis.

3.8 Conclusion

This chapter has outlined the ontological, epistemological and methodological foundations of this research. As an abductive, ethnographic case study it does not make claims to generalisability, although it seeks to inform discussions of carbon markets and voluntary social and environmental standards more broadly through the presentation of site-specific, detailed data. As an institutional ethnography there were matters of access, consent, data and confidentiality to be considered, some of which developed over time within the research. Multi-site, multi-lingual and multi-cultural working made for their own socio-technical assemblages to be grappled with, and could have been an entire study of their own. What was considered as data was left open to include observations, participation at specific events, interviews, office chat, reports, texts and presentations, all to be crystallised into a convincing story that could be authentically (validly, reliably) told as a piece of sociological research. The matter of confidentiality is highly significant and complex when dealing with organisations, perhaps particularly those that work in market contexts. Staff at different institutions might have different opinions about the level of operational transparency they are willing to allow when taking on the mantle of being the object in sociological research. Consent of staff within an organisation that has already accepted a researcher, within cultures that might find the idea of written consent strange or even offensive, and as a participant in the organisation as well as an observer of the institution were matters that were concluded, but resolved may not be the correct term. There are further reflections on some of the methodological processes in the Conclusion to this thesis.

Chapter 4: The activities of a standard

4.1 Introduction

This chapter presents a detailed description of the two cases selected in this research: The Gold Standard and Plan Vivo. It outlines their histories, mandates and organisational structures to answer the question: what is a voluntary standard and what work does it do? More space is spent describing The Gold Standard as this is where the majority of the research was based. However, Plan Vivo is described in the final section as a useful counterpoint for reflecting on the work of The Gold Standard.

The rest of this thesis will spend more time talking about standards as if they were more-or-less coherent actors, as does much of the literature on voluntary standards outlined in Chapter 2. This chapter emphasises the human and non-human constituents of the organisations to remind us that any actor is itself a process and an assemblage, a set of ongoing interactions between more-or-less discrete and dissolvable parts. Understanding some of the detail of how the standards are assembled, and the role that sustainable development (SD) plays within their mandate, provides an important background for exploring how SD is incorporated into offsetting (Chapter 6) and how the commodities and discourses of offsetting and carbon are assembled.

4.2 The Gold Standard

The Gold Standard does not fund, produce or sell offset credits. The main activity of Standard staff is to design rules and scrutinise project activities leading to carbon offsets which can use The Gold Standard brand in their marketing. The Standard focuses on one section of the life of a credit: they confirm the activities and impact of an offset project from when the project starts until a project stops producing offsets. They do this

through checking documents that are produced by project staff and auditors who visit projects. Formally, a certificate is issued in the case of VER (voluntary offset), but labelled for CER (a credit bought under obligations from the Kyoto Protocol) as it is understood that the UN issue these credits, then The Gold Standard add a label on top of this.¹⁵

In 2010/11, the majority of staff time was concentrated on reviewing projects and checking and developing their own rules. They also did some limited work as consultants with NGOs, governments and others. For example, staff advised the Australian government on regulations for future carbon markets and worked with the Thai government in developing their national carbon project standards (The Gold Standard Foundation 2010b). Policy advising and lobbying made up a small part of their activities.

Standard staff produced brochures and a website and attended carbon market industry events. Much of this publicity was aimed at project developers to encourage them to apply for accreditation. The Gold Standard team organised events. They held multi-day seminars in Turkey, India and China in 2009/2010 with NGOs, government representatives, auditors, consultants, investors and market intermediaries who sell to consumers. In 2011 there were smaller workshops with environmental NGOs in Turkey; organisations interested in developing projects in Africa for international markets; for the Californian compliance market; and side events at UNFCCC conferences. From 2011, there was an increase in interest from staff in directing their marketing at offset consumers as well – for example, expanding the website and brochures to include more explanations of what offsetting was and why consumers should be interested in Gold Standard credits.

4.2.1 Beginnings and becomings

The first version of The Gold Standard documentation states that WWF was behind the idea of a voluntary standard for CDM and voluntary offsets (The Gold Standard Foundation 2006a; The Gold Standard Foundation 2006b). Later publications say The Standard was “conceived in 2001 and established in 2003 by a group of NGOs led by

¹⁵ In everyday discussions within The Standard these words were used interchangeably.

WWF, Helio International and SouthSouthNorth” (The Gold Standard Foundation 2011a). In both versions, The Standard came about in response to the creation of the Clean Development Mechanism (CDM). These alternative versions of history are both true. They demonstrate the process of weaving the history of an assemblage together to form an actor that can be recognised as The Gold Standard.

WWF and many other NGOs lobbied the UN negotiations of what would become the Kyoto Protocol. The Protocol itself was published in 1998, but much of the rules of carbon markets and in particular carbon offsetting were codified in later UN negotiations, with most of the main issues negotiated and agreed upon by the Marrakesh Accords in 2001. While some of what WWF had lobbied for was incorporated into the CDM rules,¹⁶ the final definition of eligible project types and the compliance rules they had to follow were not what WWF staff had hoped. One of those involved in the lobbying described the choice facing WWF at that point as “whether to go after the weak projects or try to incentivise the strong projects” (Interview 4, 2011). WWF were supportive of a market for carbon credits, just not all of the decisions on what would count as carbon that had been agreed by government negotiators. They were willing to be involved in such a market, and accepted the limits that a market-based response to climate change was going to entail: “The strategy was primarily decided by what would work in the [carbon] market.” (Interview 4, 2011).

By the early 2000s, WWF had already been involved in the initiation of a range of voluntary standards. They were the original home for the Forest Stewardship Council (FSC, started in 1993) and the Marine Stewardship Council (established in 1996) standards. But according to former WWF staff involved in The Gold Standard process, the decision to suggest a standard for carbon markets was not strongly influenced by the existence of these other spin-offs, which were not (yet) widely accepted. However, as with these other standards being developed, The Gold Standard idea was based on a vision of a voluntary standard that could differentiate and improve as well as standardise a product (Schaeffer 1993).

¹⁶ For example, the exclusion of almost all credits produced through forestry or land use practices.

Led by three WWF staff (Interview 8, 2011),¹⁷ the idea of a high quality standard was developed and then presented at a side event to the UNFCCC meeting in Milan in 2003, looking for input and partners interested in taking the idea further. This was before it was certain that the Kyoto Protocol would be ratified by enough countries to start a compliance carbon market.

At Milan [COP December 2003]... there was no [Gold Standard] organization yet, just the standards that had been reasonably developed and there were some brochures and a minute website and a bit of a design.

(Interview 7, 2011).

These features were the some of the first parts in the assemblage that would become a trademark, an employer, and an *actor* in carbon markets. In 2003 the idea of a standard existed as a list of rules that were not fixed, and did not yet apply to anyone, but their codified form allowed them to be presented and discussed. Being a standard would have to involve people, offices, templates, checklists and clients, but these could wait. Discussion and approval by a sort of carbon constituency present in Milan, even without a compliance market in existence to be applied to sufficed, with hindsight, to designate as the establishment of The Gold Standard. Other NGOs, notably Helio International and SouthSouthNorth expressed their official support and participated in the development of an idea that was now becoming a standard.

To continue its progression towards actorhood, The Gold Standard idea needed money. The first non-WWF funding for the project came from the UK based Global Opportunities Fund for an initial four months in 2004. Simultaneously, a Swiss NGO, the Basel Agency for Sustainable Energy (BASE) that had been part of The Gold Standard consultation process in Milan had staff capacity but were looking for new projects. The former Managing Director of BASE explained “I got an email [advertising the Gold Standard post]... And at that time I had someone working for me who I knew needed a new challenge... So one thing led to another...” (Interview 8, 2011).

¹⁷ It is interesting to note, although it was never mentioned to me by staff at The Gold Standard, that one of the originators of The Standard working at WWF (Mike Kenber) went on to co-found the largest voluntary offset standard VCS, and is now the CEO of The Climate Group, amongst other policy and academic roles. Of the other two, one was still on the Board of The Gold Standard and working in offset markets, and the other is no longer alive.

The first official Gold Standard employee started in August 2004, located within BASE. This was still three months before Russia, the deciding vote, ratified the Kyoto Protocol. A combination of grants from governments and financial and in-kind support from NGOs built up over 2004-6. The Foundation as a legal entity was officially recognised on October 1st 2006 (Interview 2, 2011). Being a legal entity, having full-time staff devoted to the project, the support (financial, rhetorical, moral, practical) of NGOs, having a direct source of funding, a website (www.cdmgoldstandard.org, with the choice of domain name still demonstrating the centrality of the CDM to its mandate), a brochure, an office, a ratified Kyoto Protocol, a set of principles and proposed rules – these were all part of the production of The Gold Standard. None alone were sufficient to determine the creation, and even in concert they could not guarantee the continuation of the idea of a high quality standard for something becoming known as carbon. But those involved at the time identify these shifting factions, revolving around the emerging CDM, as relevant in the story of what has become The Gold Standard. Its initiation as an actor is visible through these assemblages.

4.2.2 The granularity of being a standard

The idea of a standard for offsets was thus defined and developed into an institution. This required decisions over what a standard could and should do. In the version of events from staff in 2010/11 “the main idea in the beginning was to get the technical content correct, get the certification process down, make sure we had financial sustainability” (Interview 12, 2011). This quote summarises The Gold Standard approach: a focus on the technical content, the codification of rules, calculations, procedures and tasks of GHG emissions calculations and SD assessments that others had to undertake to allow a commodity that could be sold as an offset to be produced. Within the mandate that they laid out for themselves as a standard, choices were made to focus on the production of more demanding rules and guidelines on a narrow set of project types. But this focus on technical was in itself a somewhat marketing decision for The Standard as an organisation, as the CEO at the time explained:

We kind of resisted the siren calls of growing big quickly, which was essentially the mood in the market in 2006 and 7... [we were] saying quality comes before volume... Which in terms of combating climate change is maybe not the most sensible way of doing it. And we also heard that quite a lot. But it certainly helped us build our

reputation.

(Interview 2, 2011).

This intimates that a market reputation for a standard came from the focus on technical detail, not from other actions that might more sensibly combat climate change. At that point the priority was building a reputation within the market, as the path to the higher goal of tackling climate change. Alternative paths were also identified by the former CEO:

The strategy was, rather than being a lobbying organisation, which a lot of people wanted us to be, but I didn't want us to be a lobbying organisation because there were plenty of lobbying organisations... so my strategy was always that we need to lead by example.

(Interview 2, 2011).

This idea of leading by example was still present in 2010-11 as the rationale of The Gold Standard, and still understood as a focus on the details of rules and procedures.

Staff contrasted their work at The Standard to previous experience or impressions of other types of organisations with an emphasis on the active participation in the daily process of making offsets. One staff member described what attracted them to the organisation as “I wanted to work on projects implemented today versus to be eventually implemented in the future” (Interview 14, 2011). For another, in comparison to their previous experience working at large international organisations: “I wanted action and I wanted to be on the ground” (Interview 12, 2011). Action and implementation did not translate as being in the field and setting up offset projects or lobbying negotiators. Instead, for these individuals it existed in the detailed tasks of making rules and procedures, understanding the technicalities of how calculations are undertaken. Where a traditional hierarchical scalar view might suggest that being a global organisation – incorporated into and potentially determining activities at sites in many countries, but somehow above them (c.f. Marston et al. 2005) – would be identified as the appealing attribute of working for a standard, for those inside the organisation it was their relationship to the local sites of projects that was more attractive. It was the way their work linked together and was part of determined localities, in an ANT analysis, identifying themselves in processes of “continuous paths from the local to the global” (Murdoch, 1998, p.362; also Castree, 2002: 119-20) that

made these staff feel that their activities had value.

The organisation focused on technical detail: rigour and robustness in their own terms. Their role in offsetting came from being involved in the granularity (a favoured phrase in The Standard offices) of the market. A central theme in understanding the work of The Gold Standard was this focus on understanding themselves as a participant through their intimate knowledge of the technical detail of producing offsets. This participant knowledge, found in the defining of technicalities and measurements, was appealing to staff and Board. A lobbying organisation could have opinions, but as a participant, The Standard is “permanently being road tested, it isn’t abstract NGO concept” (Interview 7, 2011).

We have an influence by what we've done and what we're doing rather than by spending time in corridors in Brussels... we should do a bit more of that still. But... I still think showing by example is best.

(Interview 14, 2011).

They made mention of their NGO relationships in marketing materials, promoting this link to enhance their authority because, as Shapin argued for Athenian philosophers and Enlightenment gentlemen, NGOs in the modern era make claims to independence from traditional power (Shapin 1995c). However for The Gold Standard, being a participant in the measurement and quantification of project activities was perceived as the stronger argument to justify their credibility (Shapin 1995a).

On the other hand, compared to the organisations that set up and run offset projects, a standard could still be described as relatively “abstract” (Interview 13, 2011). For most staff, The Standard work in defining details, procedures and rules made them active doers in offset markets. Implicitly, these descriptions identify the making of offsets as taking place through technical details, calculations and measurements (see Chapter 5). What will become apparent in Chapter 6 is that SD is included in these technical details.

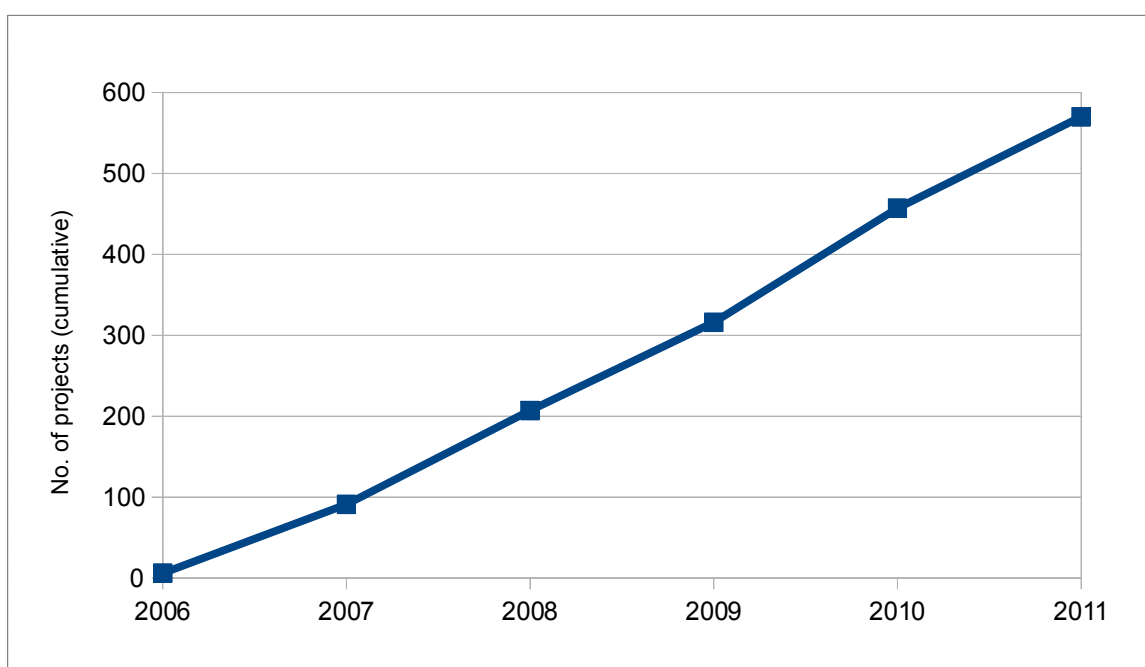
4.2.3 History-by-numbers

After the initial part-time, four-month employee, the staff grew to two in 2005, and a year later to two-and-a-half. Around the same time, the physical space of The Gold

Standard moved from being a shared desk in Basel to an independent office in Geneva. In 2008, there were four staff and help from consultants, and by 2009 there were six employees in three countries. In May 2010 a new CEO was appointed, and by mid-2010, with a large grant from an Austrian NGO and the German government, the payroll had expanded to 26 individuals located across eleven countries.

From early 2006, projects around the world could register their interest in being approved by The Gold Standard organisation. With a steady increase each year, by 2012 there were 570.¹

Figure 4.1: Number of projects listed on The Gold Standard registry

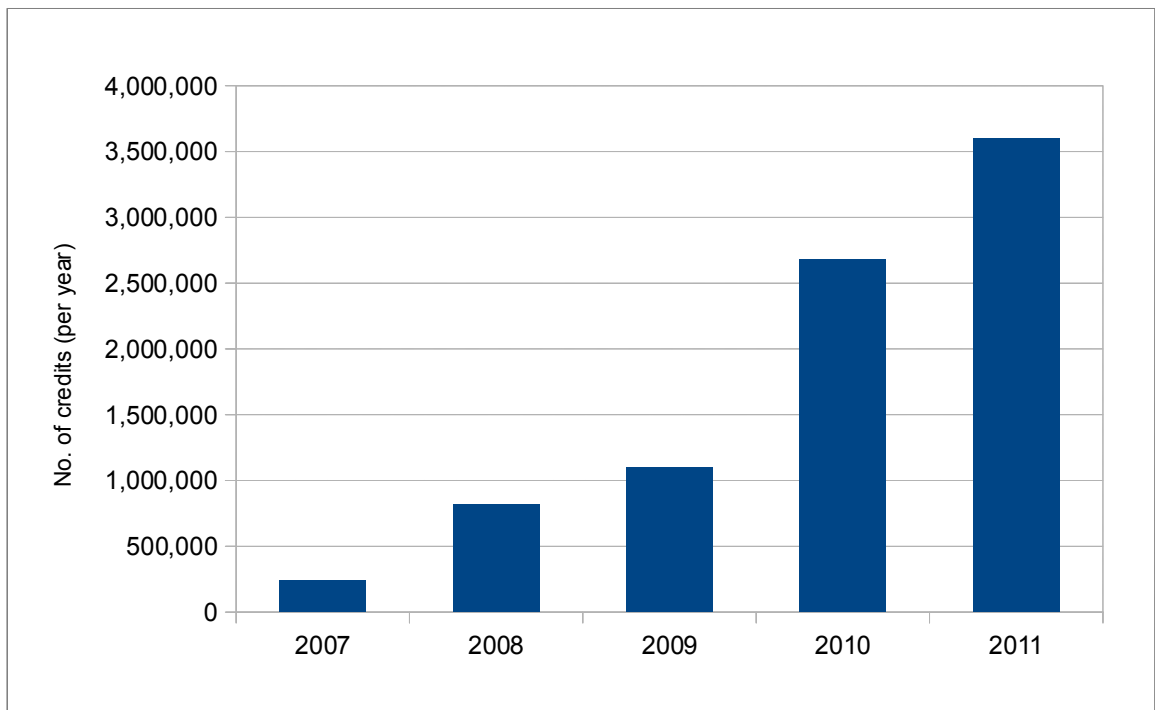


Source: Data extracted from The Gold Standard registry 2012.

The first credits with a Gold Standard label appeared in 2007. In that year over 240,000 Gold Standard credits were issued from six projects (Hamilton et al. 2007, p.48). Since then there has been annual growth in the number of credits issued (see figure 4.2).

¹ Excluding New Project Applicants where there is only an expression of interest in The Standard.

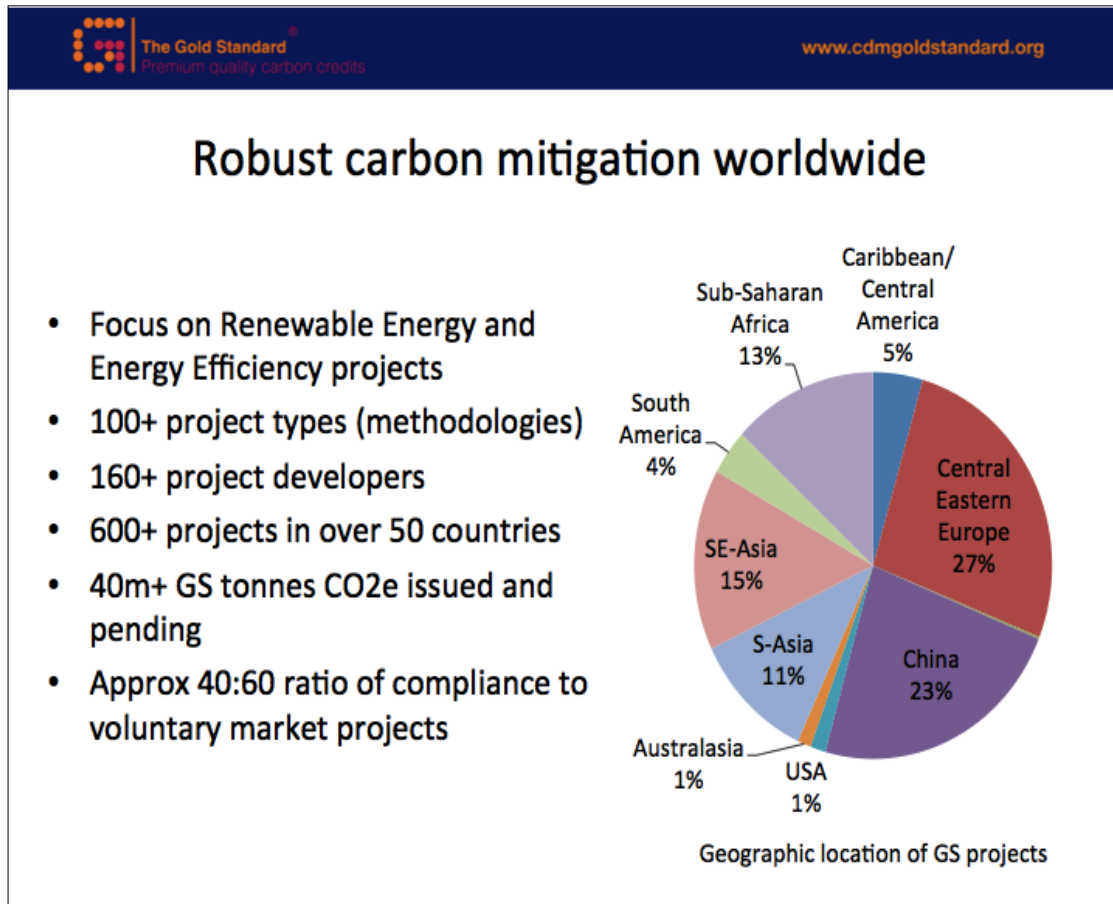
Figure 4.2. Number of credits issued/labelled by The Gold Standard per year



Source: Data extracted from The Gold Standard registry 2012.

The credits issued by 2012 came from only 83 projects (The Gold Standard Foundation 2012b). Of the rest of the 570 projects, many were underway but not at the stage to produce credits yet, others may have failed to meet the rules of the standard, others might not ever issue any carbon credits. This could be because the project does not go ahead, or it does, but not as an offset project. Nevertheless, The Standard advertise the number of credits in the pipeline which counts the expected production from projects that have not yet completed the accreditation process (but are expected to) and future production from those already producing (see figure 4.3). To remember the “ontological choreography of an ontological patchwork” (Cussins 1998 quoted in Hanseth et al. 2006 p.4) that we are dancing, the statistic of 40 million tCO₂e (figure 4.3) is an estimation of the amount of emissions that will not be produced, including from projects that may not have existed in any physical form at the time of the count.

Figure 4.3: The Gold Standard presentation of statistics



Source: The Gold Standard Foundation 2011a. "All About The Gold Standard" Introductory Presentation for all audiences. Slide 4.

4.2.4 Funding

By 2010 The Gold Standard had annual revenues of almost US\$2.5 million. The Annual Report in 2009 showed a majority of the Foundation income was through grants (66%) from the German government, WWF and the Renewable Energy & Energy Efficiency Partnership (REEEP), an Austrian based NGO largely funded through European governments. In 2010, 73% of The Standard's income came through fees from projects, and only one quarter from grants (The Gold Standard Foundation 2010b). This shift towards fees was an explicit strategy of the organisation.

Grant funding came with particular strings attached, and funding opportunities and requirements have gone some way in shaping the activities of The Standard. For example, in 2011 The Standard received German government funding to look at

technical issues (that means the complexities of calculation of emissions reductions, rather than practical matters of poor infrastructure, politics etc.) that affected project uptake in sub-Saharan Africa. The remit of the funding directed staff time onto specific technical issues and project types (see suppressed demand discussion, Chapter 6). The intermingling of state and non-state in carbon markets were highlighted by Okereke et al. (Okereke et al. 2009). This example is evidence of how voluntary standards can indeed act as arms-length government agents (Lederer 2012), although it is important to identify that this is in precise, discrete and not generalised ways: one specific government department set the criteria, not states in general. In contrast, other ways in which The Standard interacts and avoids direct interaction with governments are discussed below in the case of Turkey.

The other source of The Gold Standard income was a fee paid by the project per credit certified, shifting to a Share of Proceeds scheme for projects registering after 2009. Under this scheme, rather than paying in currency as credits were issued as they had done previously, each project gave The Standard a small percentage of the credits issued from their project (1.5% for CDM projects, 2% for voluntary). The Standard had a contract to sell them at fixed prices to a private company, Sindicatum Carbon Capital, who then sold them on to others. This system gave The Standard some freedom from the bureaucracy associated with grant obligations, but left its income stream tied to the speed with which projects produced credits.

These narratives of ever-increasing numbers can make it easy to tell a straightforward story of progress in hindsight, but, as with most if not all organisations, this hides contingent, bumpy versions of events as they unfolded. Funds – whether through grants or commercial contracts – had direct impacts on the number of staff that could be paid, and thus the speed with which the organisation could process documentation to certify projects, the scale of their marketing and communications, and the directions of their future plans.

4.2.5 Texts

Until this point, the organisation has been described as sets of people, credits, projects, money, locations and interest in producing technical details that came together under the

title of The Gold Standard. What has not yet been included is a document that exists, in codified form, as The Standard. Even though the organisation came about as a spin-off from the CDM, since the start the rules covered voluntary projects as well as CDM projects. The first sets of standard rules and requirements (two Manuals) were released in May 2006 – nearly two years after The Gold Standard had a staff member and a NGO coalition behind it, five years after the project was conceived. Subsequent versions of the rules were released in 2008, 2009 and 2012.¹⁹ Alongside the five different central texts of The Standard (initially Manuals, since 2008 known as Requirements), there have been innumerable annexes, updates and guidance notes. Some clarify meanings of rules, others have expanded or excluded the types of projects eligible, or the exact details of the procedures that projects must undertake. Projects which entered the pipeline under previous versions of the Standard are not required to switch to newer versions as they are released, but new applicants must always use the most up-to-date version of the rules. As many projects take years to set up and run, the registry of Gold Standard projects contains some projects adhering to all five versions of The Gold Standard and the organisation recognised credits in accordance with all sets of rules simultaneously.

4.2.6 Standard scope

The Gold Standard certified credits from two broad types of projects: renewable energy and end-use energy efficiency activities. End-use means only projects related to energy demand (industry or domestic use), not projects that address energy supply (more efficient energy production or transportation which could include improvements to fossil fuel extraction and combustion). In 2011 The Standard expanded their scope to include composting.

This is a narrow remit in the wider context of carbon offsets. The cumulative figures for the CDM market suggested 35% of CER issued by 2012 would be from renewable energy projects, but only 0.9% from demand side (a similar definition to The Standard's end-use) energy efficiency and even less from composting (UNEP 2012). In the voluntary market renewables made up 45% of credits bought in 2011, and energy efficiency just 1% (Peters-Stanley & Hamilton 2012). These were the better projects

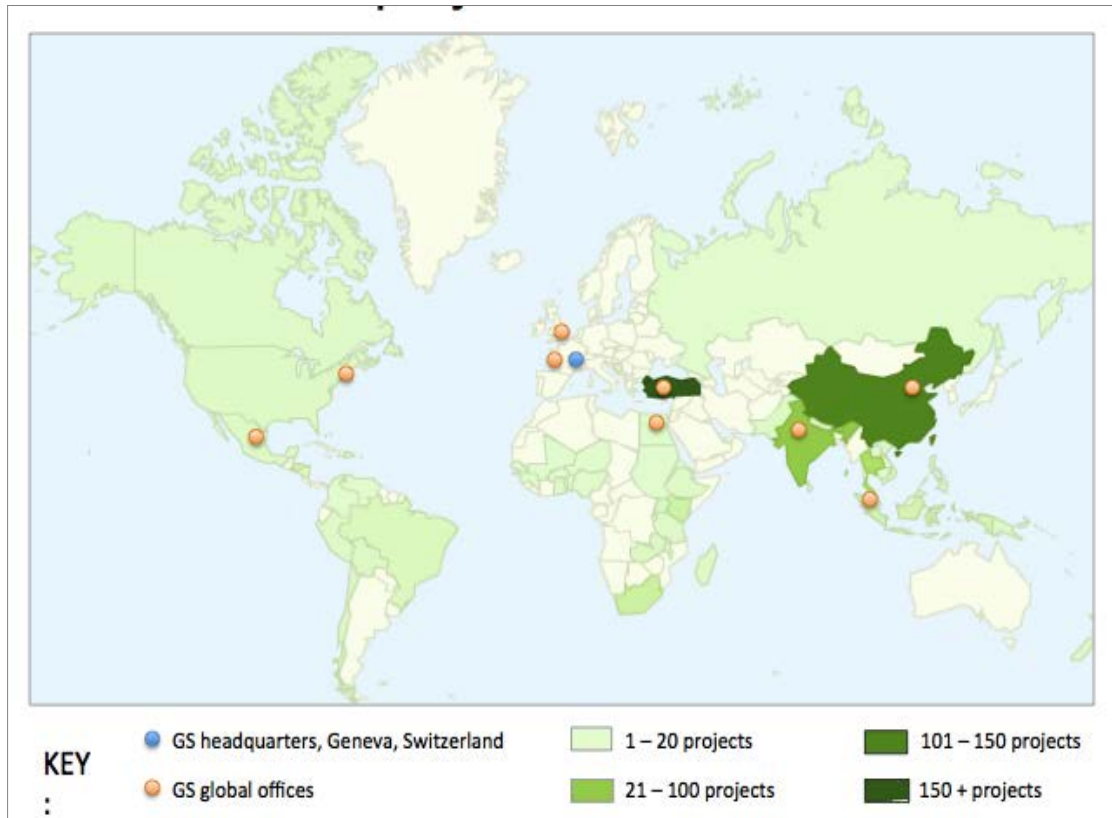
¹⁹ Throughout the thesis I refer to Version 2.1 (2009) unless otherwise stated.

that could provide quality offsets (Interview 4, 2011). The choice of scope was supposed to promote projects that would result in longer term lock-in to more sustainable means of development, not only immediate GHG emissions reductions.

The Standard scope was subject to continuous internal discussion as new projects applied and the precise temporal, geographical and procedural borders of the scope were tested. For example, the site of an end-use project in an industrial context had to be carefully contained within regulations. The results, for example, were recycled waste heat or gases from industry could gain Gold Standard certification, but only if the energy it was used on-site, or exported off-site but only if the original energy source was renewable, and there were further requirements for matched or mis-matched energy use (using more or less than they produced, from their own or other sources) on a site over the course of a year (The Gold Standard Foundation 2009a, 4). Each caveat was carefully written to exclude and include different scenarios, creating the boundaries of what it meant to produce a Gold Standard offset.

There are Gold Standard accredited projects in over 50 countries but the majority of credits are produced from projects in Turkey and China. CDM compliance credits could only be produced in countries determined by the UN. Voluntary offsets can be produced anywhere, but if the country has a mandatory emissions cap then allowances must be retired to compensate for the credits that are produced (The Gold Standard Foundation 2009c).

Figure 4.4: The Gold Standard: Gold Standard projects and offices worldwide



Source: The Gold Standard Foundation 2011a. “All About The Gold Standard” Introductory Presentation for all audiences. Adapted from slide 5.

4.3 Organisational Aims

Those involved in setting up The Standard chose a course of action in support of the creation of carbon markets. The Standard focus has been on the production and scrutiny of technical rules and procedures, understood as an active, participatory role in making offsets and the carbon market. However, in contrast to Levin et al.'s (2009) view that a “symbiotic” relationship between a voluntary standard and legislated rules should not “take away” from state-led activities, the action to start a standard was a criticism of UN decisions:

We thought that the [CDM] rules would let a lot of weak projects in and the price would dis-incentivise quality projects. We wanted to find a system that would bring a premium price to demonstratively better projects.

(Interview 4, 2011).

In the opinion of this key individual, better meant two things: an assurance of technical

rigour, in particular in working out the GHG calculations that would demonstrate that projects would not have happened otherwise (additionality), and providing “the basis for monetising non-carbon [i.e. not only GHG emissions] values to the project” (Interview 4, 2011). The Gold Standard were promoting an idea of offsetting that had two purposes: GHG emissions reductions *and* SD benefits. This was an intentional reflection of the twin goals of the CDM, and identified as such in Standard presentations. “The Spirit of Kyoto is The Gold Standard,” as one slide in a presentation from 2010 put it. The existence of The Gold Standard can be understood as active support for offset markets, but public recognition of a gap in the capacity of the CDM rules to be able to provide high quality, robust GHG emissions reductions and SD. These two ideas became formulated as the mandate of The Gold Standard in the first manual:

The first independent best practice benchmark for emissions reductions projects to offset Greenhouse Gases [sic]. It provides project developers with a tool to ensure that the CDM and JI mechanisms and the voluntary offset market deliver credible projects with real environmental benefits and, in so doing, confidence to host countries and the public that projects represent new and additional investments in sustainable energy services.

(The Gold Standard Foundation 2006a, p.5).

Developers were informed in this text that if they undertook CDM or voluntary projects without Gold Standard certification, they risk reducing emissions in ways that were not credible, even if they were creditable. Confidence was something that needed to be created by The Standard, not something already present in consumers, developers or governments with regards to the compliance market in offsetting. Project developers and host countries as well as the public were named as actors who might harbour doubts about the “real environmental benefits” of the market, and who needed to be convinced by the texts and actions of The Gold Standard through proving that investments are “new and additional.”

4.3.1 Additionality

For the theory of offsetting to work, there must be additionality. Disputes over the meaning and ways of calculating additionality have been a major source of debate around carbon markets, in particular in the early years of the CDM (Kollmuss et al. 2008). In the first version of The Standard rules, additionality requirements went beyond those demanded by the CDM (The Gold Standard Foundation 2006a, p.10). In

other words, we can interpret that when The Standard was first developed, the writers of The Gold Standard rules did not think the CDM rules were good enough.

The evolution of approaches to additionality in offset markets is visible in the evolution of Gold Standard aims and rules. In 2006 The Standard felt they needed to be “ensuring credibility,” a role of responsibility for impressions of the carbon market in general, and they had their own additionality tests to do so. However, the CDM changed how it measured additionality requirements, and from 2008 The Gold Standard decided to adopt the (reformed) CDM definition. By 2008, The Standard still saw itself as “shaping” the market, but the explicit reference to market credibility and “real” benefits had been removed from the organisational aims: “Gold Standard’s goal is to shape future markets for greenhouse gas reductions and pull that same market towards higher quality by regulating and monitoring the impact of projects on sustainable development” (The Gold Standard Foundation 2008, p.13). The emphasis on a unique approach to additionality is less prominent in this statement, with more attention on the sustainable development aspects of The Gold Standard approach.

The wording of the mandate was altered again over time. According to its 2011 website, The Gold Standard aimed:

To use markets for greenhouse gas reductions to bring about a rapid shift from dependence on fossil fuels to a sustainable energy economy, and pull carbon offset markets towards higher quality by regulating and monitoring the impact of emissions reduction projects on sustainable development.

(The Gold Standard Foundation 2011f).

Rather than “shaping” or “ensuring credibility,” by 2011 the organisation could “use” the carbon markets for its purposes of moving towards a sustainable energy economy. Implicit in this change in phrasing is a sense that carbon markets themselves are credible (enough) and developed (enough) for The Standard to draw more attention to its commitment to sustainable development.

Remarks from people who worked in the market showed that not all were convinced about all activities within carbon markets being entirely credible:

Here in China we see loads of rubbish, mainstream developers developing what they know is rubbish. The market is just not cleaning itself up. [The] voluntary market is even worse, frankly.

(Carbon market participant, 2011).

The credibility of the market as a whole remained a concern for The Gold Standard. Nevertheless, there is a shift in the wording of The Standard aims over time that puts less emphasis on general market credibility as a top priority and responsibility for The Standard. What comes out more strongly over time in later versions of The Standard mandate is their interest in sustainable development (SD).

4.3.2 Sustainable development

The 2006 aim quoted above addresses the issues of rigour and additionality more than the “non-carbon values” also mentioned by one of The Standard's original inventors. But from the earliest days, SD was central within the mandate of The Standard. The first CEO of The Standard (2004-2010) was specific on the matter: “The idea that creating large flows of money that go to developing countries without any credible checks on the sustainable development impacts felt a little weird to me so I wanted to do something about it.” (Interview 2, 2011). As noted previously, doing something in Standard terms means a focus on procedures and details. A third of the original Manual document is rules that specify the requirements for achieving and demonstrating the SD attributes of a project.

From the 2008 Version of the standard onwards there is also an explicit mention of SD in the organisational aims. However, despite the central emphasis on the phrase and it being the subject of such quantities of technical details, SD was not defined within The Standard documentation. In contrast, the original standard Manual referred explicitly to the multiplicity of possible definitions of the phrase: “Although the term 'sustainable development' is open to many different interpretations, there is some agreement on defining the core principles. These include environmental protection, social advancement, human rights and economic development.” (The Gold Standard 2006a, p.9-10). The Gold Standard definition of SD that is formed through their texts and practices is elaborated in Chapter 6.

The Standard rules and requirements consistently referred to the phrase “sustainable

development” when invoking positive local social, environmental and economic impacts. In 2010-11, I also observed staff switched between talking about SD and co-benefits as synonyms. For example, in a discussion on Standard marketing in 2010, the CEO commented on the need “to be much more explicit about co-benefits, which is what we were designed to do.” Co-benefits was a common phrase in carbon market literature by 2010, referring to social, environmental or economic benefits from projects. As all CDM projects had to (at least nominally) include SD, so a discussion of co-benefits sometimes indicated a project trying to go beyond the CDM minimum. It was also possible to see the term co-benefits sometimes being used as a way to differentiate between the main aim of an activity, with co-benefits as extras or bonuses. One Gold Standard presentation to environmental organisations included the phrase: “Our co-benefit may be your core focus – and carbon your co-benefit” on a slide. This poses the question of what the main aim of carbon offsetting is, and whether SD is part of the answer, a discussion that will be explored in Chapter 6.

4.3.3 Being convincing

It is clear that The Standard began as an improvement, a critique of CDM rules, with an intention from its originators who wanted to see “better quality projects” succeed, and to create a “pull” in offset markets towards higher requirements on their twin goals of SD and GHG emissions reductions. The approach taken, what it has come to mean to do this work, has been to “lead by example.” By 2010/11 the daily work of The Standard was presenting and administering sets of technically complex, detailed, “granular” rules with financial help from governments, NGOs and fees from projects. Lobbying had not been set as a priority for the organisation. When the wider aims of The Standard came up in meetings, they were framed in these terms: “setting a benchmark,” “influencing” others and to “be referenced” for their focus on detail. Four interviewees described The Standard as a “tool” that others could use. As the Technical Director saw it:

You have to be realistic as well, we are a 30 people organisation... We can't govern the world...What we can do is convince - is be convinced and convince other people that this is the right way to do it. And how do you convince people? Usually by showing people that it can work on the ground.

(Interview 14, 2011).

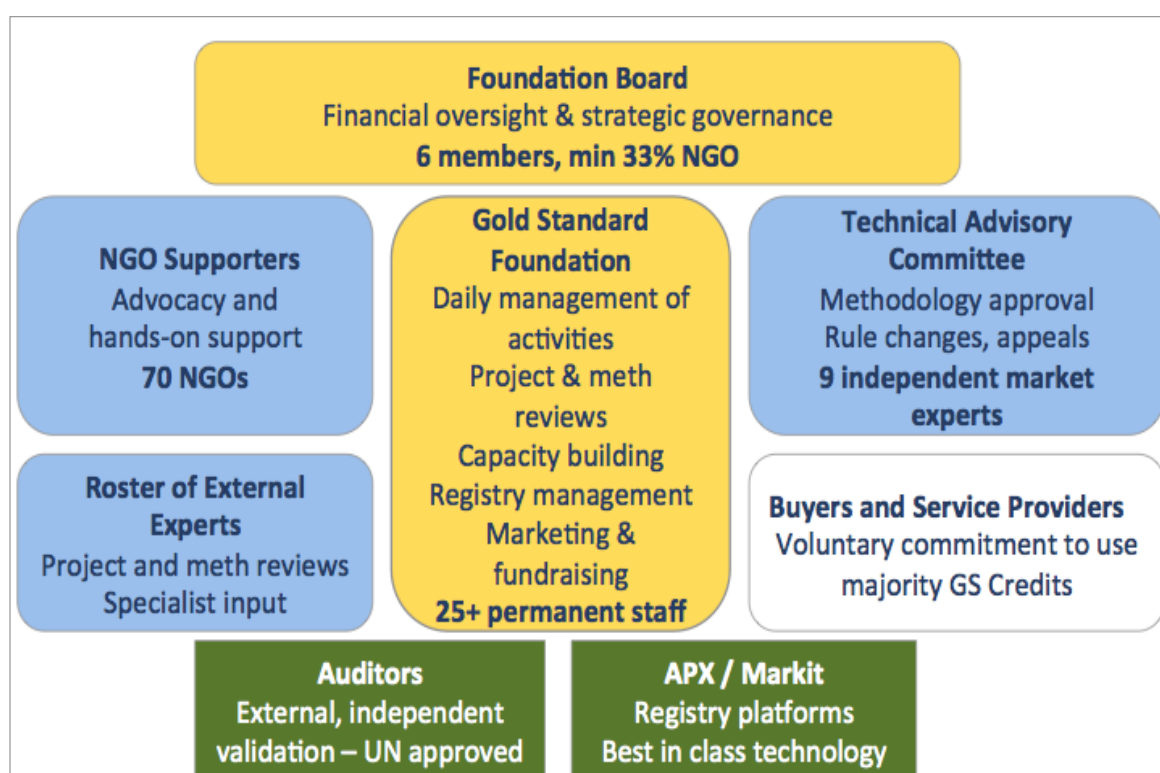
For The Gold Standard, the way to impact a market was to be on the ground, which

meant in the technical detail. It was through quantifying, measuring and producing documentation that they could produce credibility for themselves within offsetting markets and be convincing (Shapin 1995a). Their approach was to work on the quantifying details of projects to see if others could be convinced to follow.

4.4 Institutional form

It is not only the relationship to the CDM that shaped The Gold Standard. When staff describe the organisation in presentations, they used this image:

Figure 4.5: The Gold Standard: Governance



Source: The Gold Standard Foundation 2011a. "All About The Gold Standard" Introductory Presentation for all audiences. Slide 11.

Figure 4.5 shows the Foundation nested amongst boxes of internal advisors, external organisations, business partners, consumers and supporters. Each of these will be discussed in the remainder of this section, with a theme emerging of the interdependence inherent in being an independent voluntary standard.

4.4.1 The Foundation

Despite fitting into one box in figure 4.5 internally the secretariat of The Standard was made up of smaller boxes of people and practices spread all over the world (see figure 4.4). In 2010/11, the administrative headquarters of The Standard was located in Geneva, Switzerland. The second largest office was in New Delhi, India which hosted the six-member Technical Team. There were further offices in the USA, China, Singapore, Turkey, Egypt and Mexico each with one or two staff, who were Regional Managers (RM) and Assistants. There were further staff working as satellites from some offices in Rome, Paris, Hyderabad and one part-time in the UK although the organisation did not have registered addresses in these locations. As a result, much of the internal work of The Standard was done by email, skype and conference calls.

The RMs and Assistant RMs were all from and physically based in the regions for which they were responsible.²⁰ All of the RMs had previous work experience, most frequently within carbon markets in auditing or project development companies, and most were engineers by training. They had most contact with project developers and did much of the work of checking project documentation, but they were also responsible for marketing and communications duties within their regions under the direction of the Director of Marketing in Geneva. Some were involved in grant applications and institutional fundraising activities for the organisation. The Technical Team also worked on project desk reviews as well as refining and developing Standard documentation and answering questions from project developers and others.

4.4.2 The Board and Technical Advisory Committee

The Board was required to have 6-12 members, with at least one third from NGOs. It gave strategic guidance to the Foundation through four meetings a year (usually via conference calls). New members were selected by the current Board. Personal characteristics (gender, race, country/region of origin) as well as professional qualifications and expertise (professional background and current role, availability) were taken into account to encourage diversity.

²⁰ China, Turkey, Egypt, Mexico, India and Singapore.

The Technical Advisory Committee (TAC) gave guidance and approval to the rules and methodologies that the Secretariat used to review projects and could offer their opinion on strategic-technical decisions of the Standard (for example, changes in scope). They discussed particular projects or rules if the Technical Director put it on the agenda. In 2010/11 the TAC included individuals from project developers, carbon consultancies, international organisations, NGOs and governments. They were selected for their individual expertise (e.g. in specific project types, project implementation/management experience, legal issues), not to represent the organisations they work for, and were expected to leave any organisational affiliations aside (disentangle themselves) when discussing projects or rules. They gave guidance on all technical matters, which included SD (see Chapter 6), although most of them had experience that related to GHG emissions reductions rather than development. They met on a monthly basis with the Technical Director, usually using online meeting software and once a year in a longer physical meeting (one or two days).

4.4.3 NGOs

Qualified individuals working at NGOs could be involved independently from their organisations as TAC members, Board members or consultants. The NGO Supporters mentioned in figure 4.4 were incorporated as organisations rather than individuals, and by 2012 there were over 80 organisations on the list. Joining as an NGO Supporter meant an organisation giving public support to The Gold Standard, but it did not imply any financial support, they were not obliged to agree with all Gold Standard decisions or projects and they could simultaneously support alternative offset standards. In the first version of the Standard it was declared that

A global network of “supporter” environmental and development NGOs that have formally endorsed the Gold Standard owns the Gold Standard. These organisations have the ultimate power to define the role of the Gold Standard in the carbon market.
(The Gold Standard Foundation 2006a, p.5).

In more recent documentation, the role of NGO Supporters, while still made prominent and described as “crucial” (The Gold Standard Foundation 2011b, 1) was not described as one of ownership, but rather mutual benefits. In contrast to the formalised meetings of the Board and TAC, the NGO Supporters were not consulted or represented through

any specific mechanisms.²¹ Having support – whether active or passive, but preferably formalised – from NGOs was seen to be very important. In interviews and during meetings, staff identified NGO support as a source of credibility, strength and legitimacy for The Standard, referring to it as a “moral alliance,” “asset,” “bullet proof(ing)” from critics and “the key to The Gold Standard.”

4.4.4 Other elements of The Gold Standard

The registry, auditors and professionals on the roster of experts are all included on The Gold Standard diagram (figure 4.5). The registry is a software programme that was part of The Gold Standard website, set up in 2008. APX and Markit (figure 4.5) are the two private companies that provided and maintained the software, although two Gold Standard staff also worked full-time managing data within the registry. The transfer of documents between projects, auditors and The Standard, and release of credits for sale was done through this part of the site. All transfers of credit ownership had to be recorded in the registry (see Chapter 7). Gold Standard staff do not visit project sites, but all projects are visited multiple times by auditors. Only auditors with UNFCCC accreditation could audit for The Gold Standard even if the project producing for the voluntary market.²² The role of auditors and their relationship with The Standard is scrutinised in more detail in Chapter 5. The Roster of Experts were consultants including statisticians, engineers and specialists on particular project types, called upon on an ad-hoc basis.

4.4.5 Buyers

End-buyers of Gold Standard credits did not necessarily have any contact with The Standard organisation, and The Standard did not have access to information over the price buyers paid for credits that they certified. The average price of a Gold Standard voluntary credit 2007-12 was recorded as US\$12.2 in independent market reports, on the high end of the voluntary range and at times around double the average price for voluntary credits (Peters-Stanley & Hamilton 2012, p.31). The sale of Gold Standard

²¹ During project reviews, NGOs are invited to give input but this is open to all NGOs, not only official Gold Standard NGO Supporters.

²² The only exception is for Community-Focused Micro-Scale schemes, introduced in 2010. These are very small VER projects where the project can choose either to use an auditor, or can opt to pay a fee to The Standard (which is lower than they would need to pay an auditor) and have an on-site visit from an Objective Observer, an individual who must be independent of the project and approved by The Standard.

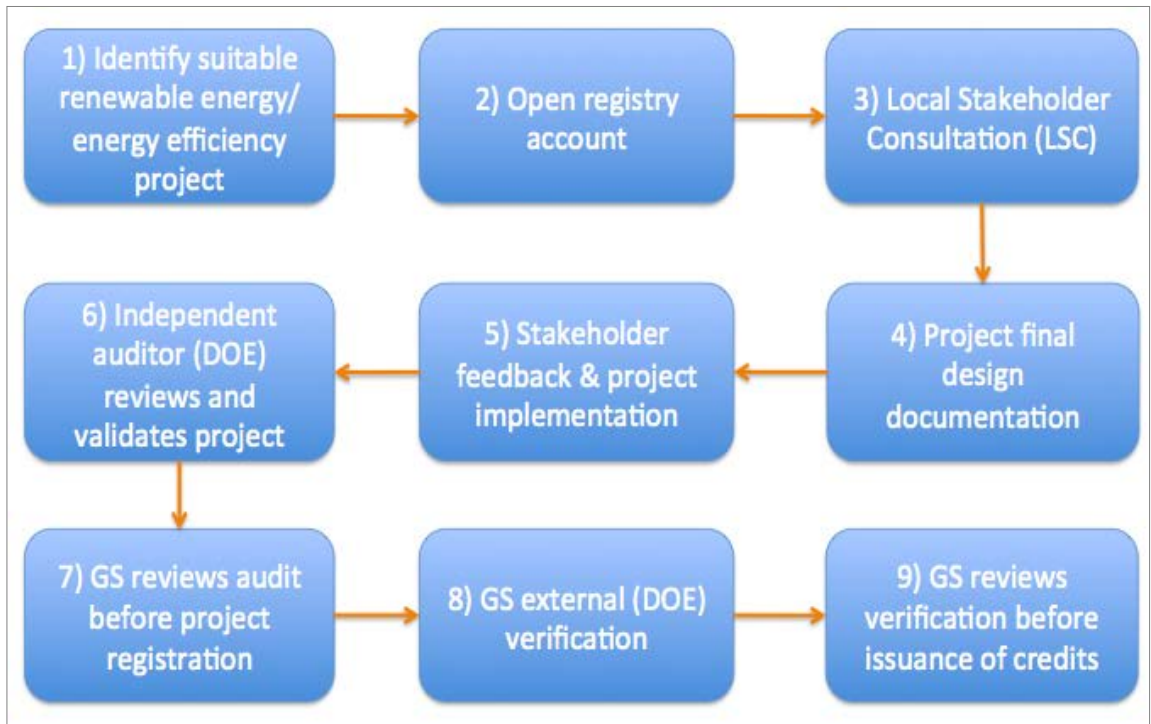
credits accounted for around 12% of all transactions in the voluntary market and a very small minority of CDM buyers (1%) chose Gold Standard credits (Peters-Stanley and Hamilton 2012, p.68). The Standard made no demands of their buyers other than that they complete their transactions within the law. Chapter 7 will return to the subject of the registry, buyers and their relationship to The Standard in more detail.

4.5 The Gold Standard Project Cycle

The following section outlines the process that a project had to go through to receive Standard accreditation in 2010-11, the detailed rules and procedures that were designed and overseen by Standard staff, incorporating and interacting with other organisations.

In Gold Standard documentation, the entity that applies for certification were referred to as a project proponent, although internally (and in this thesis) this is interchanged with project developers. A proponent could own the project, but sub-contract the development to a different organisation (like an owner and a manager), or sometimes the documentation for certification was filled out by a consultant contracted specifically to manage The Standard application process. Figure 4.6 is the version of the project cycle or pipeline that was used to explain the application process to audiences not familiar with carbon offsetting.

Figure 4.6 The Gold Standard: The Gold Standard certification process



Source: The Gold Standard Foundation 2011a. "All About The Gold Standard" Introductory Presentation for all audiences. Slide 9.

Project proponents were supposed to decide they wanted Gold Standard certification before they started a project because to receive certification they had to undertake a Local Stakeholder Consultation (present their project idea to the local community and receive and record their feedback) before the project commenced (see Chapter 6). Once the documentation for this meeting and the proposed method of calculating GHG reductions were audited by Gold Standard staff, the project was listed publicly on The Gold Standard Registry. This was when a project activity usually started: wind turbines installed, cookstoves distributed, etc. Step 6 – known as validation – was a desk review and site visit by an auditor (DOE) to confirm both the GHG emission and sustainable development features of the project. All of this work was then double checked by Gold Standard staff in a desk review comparing the project documents and the DOE report (Step 7). Questions were usually raised by Gold Standard staff to either the DOE or the project to clarify information or ask for more evidence as part of a normal application. This cross-check by staff was something The Standard marketed as their robustness. They claimed that other standards did not perform in-house documentation checks to

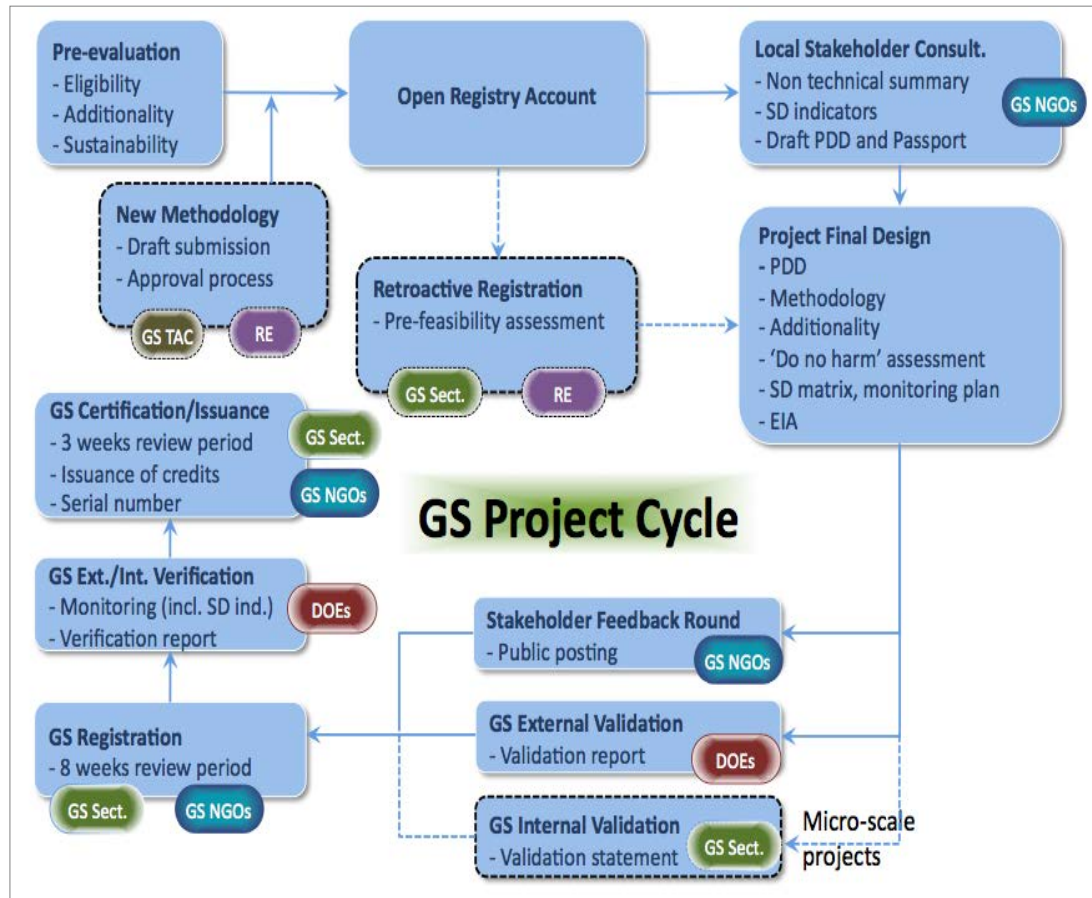
the same degree, instead choosing to trust auditors' opinions on validation details. This double-check was part of The Gold Standard's attention to detail, and made staff feel as though they were “on the ground” even without visiting projects. At this stage the TAC and NGO Supporters or other local NGO were also invited to comment on applications (Registration Review). Passing these hurdles, the project could be labelled as registered and could legally claim to be a Gold Standard project. The project then continued/undertook its activity and calculated the emissions reductions. This data was audited by the DOE (verification) with a desk review and a site visit within the first two years of credit production. Site visits by the DOE were repeated every three years for the lifetime of the project. Project lifespans for both voluntary and compliance credits were in line with the CDM rules, so a project could produce credits for a maximum of 21 years. The auditing and Standard double-check looked at the GHG emissions reductions calculations and the SD aspects of projects at each stage of the process.

This describes the normal project cycle for projects aiming for the CDM compliance or the voluntary market. Four project types required an extra Pre-Feasibility Assessment (PFA) (identified on figure 4.6 as a Pre-Evaluation).²³ Community Focused Micro-Scale projects and Programme of Activities (PoA)²⁴ also had slightly different procedures for the auditing process. This demonstrates the differences between projects even entering under the same version of The Standard, highlighting the multiplicity that underlies the unitary impression of a standards organisation. Figure 4.6 includes more detail and these non-normal cycles, and was used only when presenting to audiences already involved in carbon markets and offsetting (e.g. auditors). As one staff member noted during a meeting “The project cycle slide [figure 4.7] is really scary if you’re not used to it [offsetting].”

²³ A PFA meant an up-front extra fee, and required producing documentation (or a meeting and extra scrutiny at later stages, if the developer had experience of the project type and Gold Standard process). Retroactive projects (applying for Standard certification after project construction or operation), large scale hydroelectric projects (over 20MW) and projects which had been rejected by the CDM (except those rejected on additionality grounds, which would be automatically rejected by The Gold Standard) and projects that involved palm oil plantations also had to undergo PFA because of potential extra issues with these project types.

²⁴ PoA means activities across a number of sites can be bundled together as one project. This reduces administration costs for the project proponent because only a sample of sites are visited by the DOE and the project documentation is shared by all sites.

Figure 4.7: The Gold Standard: Certification process (technical version)



Key: GS Sect – Standard Secretariat, RE – Roster of Experts. DOE – auditors.

Source: The Gold Standard Foundation 2011b. "DOE Webinar Training Presentation."

Maintaining the same processes for VER and CER meant a certain amount of all Gold Standard practice was modelled on and designed to fit around CDM processes. This was visible in rules where DOE were required to undertake Gold Standard verifications to fit into the timings of the CDM programme, for example. However, The Standard also looked to differentiate practices – most notably by including the SD requirements, but in the detail of other rules as well. In one example, The Gold Standard had made a rule change in a way that differentiated them from the CDM on a particular matter, only to find that unexpectedly soon afterwards, the CDM also changed their rules, and in ways that echoed The Standard's decision. The change from the CDM was welcomed in one sense: The Standard had already decided the procedure was a better way of doing business, and it was not a significant part of the organisational identity, so they could afford to be magnanimous about the change. At the same time, in order to maintain its

organisational purpose (and price value), The Standard *needed* some differentiation between its rules and those of the broader practices of the CDM. The risks this posed to The Gold Standard were mused upon by a Board member:

If overall quality of the market improves, the value of The Gold Standard is lessened... The relative worth of GS [credits] in the market would decrease, but I'm sure everyone [within The Gold Standard] wouldn't mind if that was the case!

(Interview 4, 2011).

The Board member was sanguine about the situation, but perhaps because it did not appear that the UN were planning on instituting a wholesale copy of The Gold Standard any time soon. However, it does point to an underlying tension in the relationship between a standard and others in the market who have the capability to make standard work superfluous (Watanatada and Maka 2011). It is another aspect of the relationship between The Gold Standard and the CDM not captured if the interaction is summarised as benignly “symbiotic” (Levin et al. 2009).

4.5.1 Getting projects in

Inherent to being a voluntary offset standard was a constant balance between ensuring that processes were cost effective enough for project developers to participate in the standards and consumers to purchase. For different rules, the cost to The Standard had to be considered, but so did the cost of implementation to developers, for example in determining whether fees should be paid upfront, or on issuance (a form of subsidy from The Standard), or what percentage of a population should be monitored (see Chapter 6).

Due to the scale of The Gold Standard pipeline (over 500 projects by 2011) there was a limit to the amount of personal attention staff at The Standard could give each project. Despite this, there could be a significant amount of contact between project proponents (or their consultants) and Standard staff, especially Regional Managers (RM). One RM described their primary tasks as “facilitating the process for project development and providing feedback, answering questions from project developers as well as other stakeholders, as well as reviewing the projects.” (Interview 9, 2011). This facilitation was not (only) the impersonal application of rules and regulations in the form of ex post

documentary desk reviews. Documents from an individual project could be sent back and forth up to three times as part of the validation stage alone. Some consultants or developers streamed many projects for Gold Standard accreditation, resulting in ongoing relationships between staff working in different organisations within carbon offset markets.

In some cases, following a methodology for a project developer was far from simple (see Chapter 5), hence the need for The Standard to provide rule updates, guidance notes and clarifications, and the facilitation of an RM or a member of the technical team that a project proponent could call or email when they had questions. This direct contact between Standard staff and developers was something that was intrinsic to the success of the organisation, according to the interviewees. TAC members, the former CEO and standard staff all suggested accessibility as one of the features that made The Gold Standard credible in offset markets, all comparing themselves favourably with CDM processes:

Interviewee: Rule making has been consistent, credible, and at the same time accessible to the market. So people actually understand how our rules have been made, why they've been made as they are. They may not necessarily agree but they certainly understand... and anyone basically can call ----- [Technical Director]. I'm not sure if people still do that.

Interviewer: Yes they do!

Interviewee: You can just call ----- [Technical Director]. Try calling the [CDM] Secretariat. Good luck!

(Interview 2, 2011).

Standard staff emphasised the importance of making themselves available for questions from developers, and also making the Standard texts as clear as possible. In 2010/11 a project to improve The Standard for Version 2.2 based on “a summary of misunderstandings from project proponents” (Harmonization Meeting 2010) emphasised that there was always more work to be done. Staff agreed that the consecutive versions of The Standard text had improved considerably in terms of clarity.

I think in the beginning... a lot of our processes and rules were very confusing... So what sounded good from an idealistic standpoint... I think that often didn't translate on the ground.

(Interview 13, 2011).

To succeed, The Standard needed to absorb enough of the interests and concerns, offer advice, accessibility and encouragement to those looking to be certified, whilst maintaining a role that would represent independence as a third party standard. Managing the appropriate balance between facilitating projects along the project pipeline and maintaining neutrality and distance was part and parcel of the daily life of making, updating and applying rules within The Gold Standard. Notably, while earlier others had described The Standard itself as being on the ground in offset markets, the comment above gives an example of an alternative perspective of standard work as being “idealistic” compared with what happens in offset projects themselves. This distance between projects and the standard is something further contrasted in Plan Vivo below.

4.5.2 Keeping projects out

The importance of interactions with potential as well as actual project proponents was recognised by staff in the need to communicate not only with those undertaking certification, but to discourage those who were unlikely to meet the requirements of The Standard from starting the process in the first place. This avoided wasting staff time later on in dealing with projects which were not going to result in credits (and also income). It was also to avoid unpleasant experiences for staff, who had had to deal with developers getting “extremely angry” when their projects were criticised or rejected at later stages in the certification process (Interview 9, 2011). One staff member described a strategy of subtly discouraging some project developers from applying. They emphasised the rigour of the Standard requirements to developers, reminding developers to “do their homework” before starting The Standard application process in the hope that the developers would realise that they were not going to be able to sneak a sub-standard project through. Another recounted how they were more direct in their approach. In response to intense questioning by developers over additionality under The Gold Standard:

I said ‘Look, you know just as well as I do that this is a big grey zone... Anybody that sets up a rule, the market will find ways to bend it a little bit just to get through in five minutes... But what I do know is that GS [Gold Standard] stands for something like quality. And it’s a brand, it’s not an official thing, it’s just a stamp or a label or whatever you want. And it can get killed if a bad project goes in there. So what I’m asking basically is put the good projects, don’t put the bad ones in, because then you’ll kill the

brand and you'll kill yourself in the process.

(Interview 6, 2011).

This highlights The Standard's relationship with projects that it did not certify, along with those that it did. The reputation of The Standard relied on the attributes of the project it certified. It was vital for the voluntary standard to keep projects in its pipeline. At the same time, to avoid wasting staff time and to maintain the reputation of The Standard, it was equally necessary to ensure that projects that would not meet The Standard requirements did not attempt the application process.

4.5.3 Other standards and governments

This final section on The Gold Standard concludes with two examples that illustrate aspects of their relations with other voluntary offset standards, governments and NGOs. In 2011, a rule update on grievance mechanisms was released by The Gold Standard. These new procedures were designed to channel stakeholder concerns once a project began, as previous rules had only incorporated local stakeholder feedback before project construction started. The perceived need for this update was formed through a combination of forces. The lack of a continuous mechanism within The Gold Standard processes had been noted in an external evaluation of voluntary offset standards that had been passed to Standard staff. Staff observations of other actors within carbon offset markets had recognised that at least one other voluntary standard had codified mechanisms that included ongoing feedback from local stakeholders. There was also increased internal capacity to work on SD aspects of The Standard with new hires and the potential for new projects to be initiated internally. The rule change thus reflected a combination of internal proactive capacity from staff at The Gold Standard, awareness and policy learning between standards organisations and reflexivity of the organisation in the face of external commentaries.

In another case, highly contested debates over the implementation of legislation on hydroelectricity in Turkey left The Standard feeling their approach was being compromised. Many environmental NGOs in Turkey were refusing to support or even comment on any new hydroelectricity projects, even ones that met (higher) Gold Standard rules, because of a perception of general government disregard for sensitive water basin management, as well as the privatisation of waterways (Özesmi 2010). The

controversy – which was not caused by any Gold Standard project, but by the Turkish government promotion of massive numbers of private hydroelectricity projects in environmentally sensitive areas – forced Standard staff to confront head-on the political side of technical rules, and the local implications of global responses to climate change.

The position of some NGOs in Turkey that avoided engaging with The Gold Standard was understood not as a reflection their opinions on particular Gold Standard projects, but of government legislation. For The Gold Standard, their project-by-project approach and use of universal rules made it difficult to incorporate the sector-wide (but national government-oriented) critiques that the hydroelectricity projects were facing. Standard staff did not want Gold Standard Turkish hydro (a significant percentage of The Gold Standard pipeline) caught up in a controversy that was not about Gold Standard rules. Staff felt that Gold Standard projects in Turkey were still incorporating SD, but were worried that their reputation could be damaged by indirect association with the government strategy. The Standard chose not to turn to more detailed technical procedures, as someone stated during a TAC meeting “we can’t just let the rules deal with this, we need to really deal with it.” But they were also unwilling to intervene in a national political debate. In line with their understanding of what a standard could do, they wanted to provide rules that others could learn from, not lobby or directly criticise government policies.

What we need to do is make NGO understand that GS [Gold Standard] is an opportunity... that we are one of the tools they can use... we can't make a judgement or assessment on the overall policy.

(TAC Meeting 2010).

The Standard ran a workshop in Istanbul in 2011 with Turkish environmental NGOs to educate them about carbon offsetting and Gold Standard procedures, and held meetings with NGOs to listen to their concerns about hydroelectric projects in Turkey. The aim was to build relationships that could get over (or around) the broader political controversy and focus on Gold Standard projects. The interdependence of The Standard on government regulations, NGO opinions and public perceptions was clear. It was a case of trying to convince by example to the NGOs, offering a free explanation of the technicalities that The Standard suggested could meet NGO concerns without The Standard being seen to be directly involved in political debates.

4.6 Plan Vivo

The story of Plan Vivo has a different starting point. It came about from a project located in Mexico in 1994, before the initiation of Kyoto negotiations.²⁵ The UK Department for International Development provided project funding, which was run with commercial and academic support from the UK and Mexico, including the carbon offset developer ECCM. The aim was to find ways of developing and monitoring agro-forestry projects within communities that could result in funding streams through payments for ecosystem services schemes and carbon offsetting (de Jong et al. 2007). From this first project, the concept and rules of a transferable standard were developed. This is in contrast to The Gold Standard which, despite staff feelings of being on the ground, came about during lobbying by NGOs at locations of inter-governmental negotiations rather than at the site of an offset project, linked into academic institutions and British business interests.

The administration of the Plan Vivo standard was first organised through ECCM, then from 2002 as a not-for-profit company (Bioclimate Research & Development, a spin-off from ECCM), and finally in 2008 as a separate charitable foundation (Plan Vivo Foundation) as the change in status facilitated funding applications for the organisation, leaving BR&D institutionally separate as a project developer and consultancy. BR&D work on projects that are aimed at achieving Plan Vivo accreditation, and BR&D and the Plan Vivo Foundation continue to share offices in Edinburgh. As with The Gold Standard, Plan Vivo grew out of and became independent from its institutional roots whilst maintaining the same title of a standard. The rules of the standard text have also altered over time, with updates in 2008 and again at the end of 2012.²⁶

The first Plan Vivo-certified credits were sold in 1997, a decade before The Gold Standard. Despite its longevity, Plan Vivo has certified a relatively small number of the credits (one million in total by 2011) and had a staff of 2.5 (1.5 until June 2010). Projects activities eligible for Plan Vivo accreditation are limited to agro-forestry, afforestation, restoration and reforestation or conservation of forests and woodlands, and must be community or small-holder owned. As with the majority of voluntary

²⁵ The project is described in Brown & Corbera (2003).

²⁶ The 2008 version is used throughout this research.

standards (but unlike The Gold Standard), Plan Vivo applies only to the voluntary market, not to CDM projects. By 2011 Plan Vivo had six registered projects and eight further projects in the pipeline (Plan Vivo Foundation 2012). The registered projects by 2011 were located in Western Africa and Central America, with future potential projects also in these regions as well as Northern and Central Africa and South Asia.

Beyond the administration of the standard, the organisation does not develop projects, but they have done some indirect lobbying on UN negotiations on forestry (REDD) and forestry carbon matters and have produced a briefing on how Plan Vivo integrates into REDD+ (Plan Vivo Foundation 2011a). They attend conferences and events to promote themselves, forestry carbon, carbon offsetting in general and their particular projects. Rather than emphasising technical rules, rigour and granularity, staff talked about helping projects, being a “resource centre” for projects, with projects, not the standard organisation, as the ones who are “on the ground” (Governance and Operations Director, Plan Vivo 2011). Broadly characterised, the detail of Plan Vivo standard work as observed in 2010 prioritised both the development and maintenance of relationships with their projects, as well as the development of their standard rules and regulations.

4.6.1 Aims

Plan Vivo aims to be an “ethical standard and system, that puts people at the heart of the solution” (Plan Vivo Foundation 2012). The central principles are improving livelihoods, equitable distribution of the benefits of projects among participants, participatory methods of activity and decision-making within projects and a focus on restoring and preserving ecosystems. As such, their aims fit into general definitions of SD (see Chapter 2). The standard aims are much more specific than The Gold Standard when it comes to defining what their vision of a good project is in terms of its social, economic and environmental features should be. However, Plan Vivo do not emphasise the phrase sustainable development in their marketing. Instead they make frequent mention of sustainable practices of land/resource management, social benefits and social capital (Plan Vivo Foundation 2010b). This contrast with The Gold Standard is due to Plan Vivo not looking to synchronise with the text of CDM. However, in the Plan Vivo standard text itself, they do identify their work as SD:

*The Intergovernmental Panel on Climate Change (IPCC) have found that: “Forest related mitigation activities... can be designed to create **synergies with adaptation and sustainable development**.” The Plan Vivo System is designed specifically to create such synergies.*

(Plan Vivo Foundation 2008, p.16 emphasis in original).

As a result, despite their lesser emphasis on the specific terminology, it is reasonable to say that their activities aim to incorporate SD as part of carbon offsetting.

Plan Vivo did not use the term co-benefits in their marketing (although staff did use it casually in internal discussions when talking about their activities). Plan Vivo staff were clearer in identifying a hierarchy of benefits implicit in the phrase co-benefits.

I'm always a bit sceptical about the term co-benefits. I understand its function in the marketplace, but it almost implies that you can have the carbon benefit without the other [socio-economic and environmental aspects] elements, which in the case of community or smallholder land you can't really have...

(Governance and Operations Director, Plan Vivo, personal correspondence, 2011).

For Plan Vivo, as with The Gold Standard, the carbon benefit was only one part of the story of an offset. Plan Vivo staff explicitly rejected the discourse of co-benefits that put SD benefits as a secondary feature of offsetting.

4.6.2 Institutional form

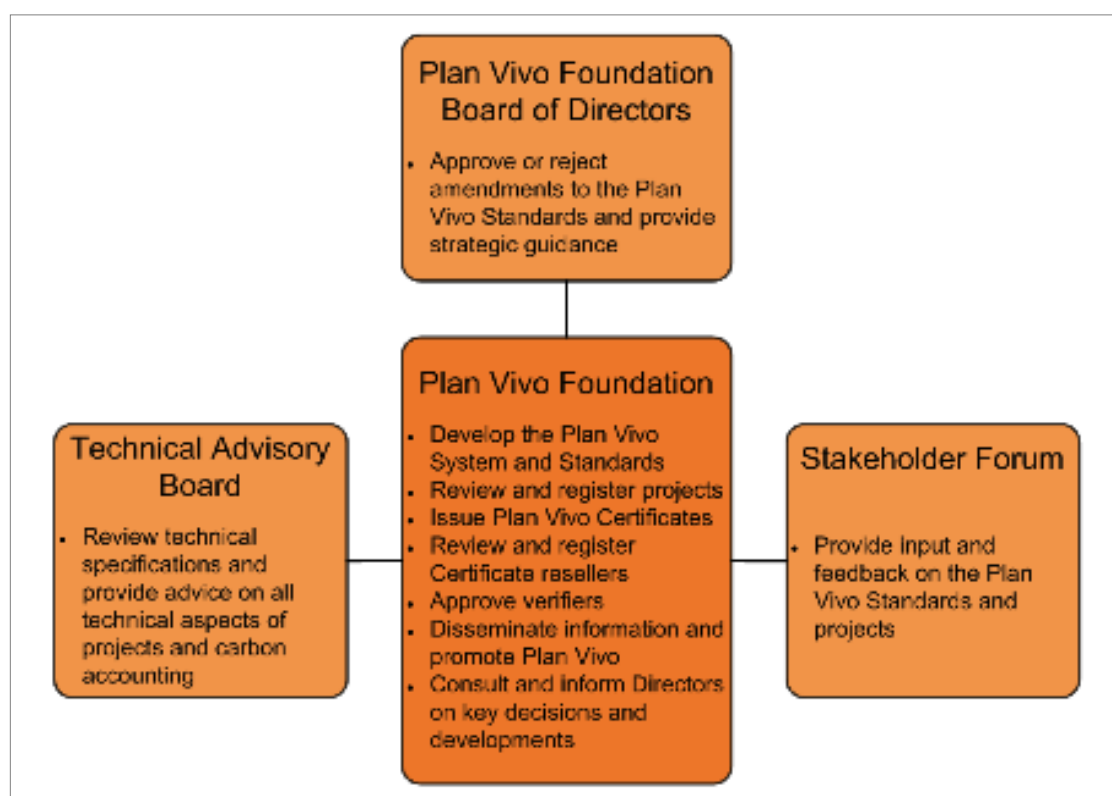
There are similarities in the institutional structures of the two standards, what institutional theorists might term institutional isomorphism (DiMaggio & Powell 1983) where organisations with similar aims come to mimic each other structurally. Like at The Gold Standard, Plan Vivo has a Board of Directors who must approve all amendments to the standard rules and meet a minimum of four times a year. In May 2010 they initiated a Technical Advisory Board (TAB) who perform a role very similar to The Gold Standard's TAC. The Stakeholder Forum provide a role somewhat similar to The Gold Standard's NGO Supporters, and made up of (but not limited to) many NGOs. It was similarly a less defined group than the TAB but worthy of inclusion on their visualisation of standard governance (figure 4.8). In Plan Vivo, these stakeholders are not required to register or be officially recognised by the organisation, but the Plan Vivo website states that they are involved in developing Plan Vivo rules and activities

through meetings and workshops (Plan Vivo Foundation 2010a). However, the Plan Vivo assemblage creates distinctly different relations to one set of NGOs. For The Gold Standard, NGOs are moral supporters of the Standard itself and are called upon to act in the oversight of projects. At Plan Vivo they feature as project proponents. Project developers cannot have a profit motive, they must be NGO, not-for-profit companies or trust funds (Plan Vivo Foundation 2008, p.11). The Governance and Operations Director explained why:

When someone buys a ton of Plan Vivo carbon, they know it's not a tidy profit going to an Australian, Japanese, US or UK development promoter [project developer], its building a local community.

(Interview 1, 2010).

Figure 4.8: Plan Vivo: Governance structure



Source: Plan Vivo Foundation 2008, p.19.

4.6.3 Registry, auditors and buyers

Although they do not feature in figure 4.8, Plan Vivo also use a registry, auditors and need buyers. Plan Vivo use the Markit software and require the tracking of all project documentation and credit sales in a registry, under the same terms as The Gold Standard.

They also require external audits of their projects. The auditors do not have to be certified by the UN (DOE) – again, a sign of their distance from CDM influence compared to The Gold Standard. However, they still require auditors to have some accreditation from “an international certification authority such as the CDM, ISO (14064), California Climate Action Registry, FSC or other forestry certification programmes deemed appropriate by the Plan Vivo Foundation” (Plan Vivo Foundation 2008, p.25).

As with The Gold Standard, Plan Vivo did not automatically know the identity of all their buyers or what exact price was paid as credits could be bought and sold multiple times through the registry. However, at Plan Vivo they suggested that forestry credits in general tended to be sold more often through bilateral agreements between project developers and buyers, with less of a secondary market and fewer market intermediaries involved. Plan Vivo also produced physical certificates for buyers, so they often did have direct contact with them. Market reports put their average selling price at around US\$7.7 per credit (Peters-Stanley and Hamilton 2012, 68), less than The Gold Standard, but higher than the voluntary offset credit average.

4.6.4 Producers

Although they are not mentioned in the governance structure, in the “zone of qualification” (Barry 2006) produced through Plan Vivo the standard created a group (actor) that was not formed in Gold Standard texts: producers. Producers (whose comparable groups in a Gold Standard project documentation would be project staff, local stakeholders or end users depending on the project type) are defined as the following:

Producers are small-scale farmers, forest dwellers and land-users in developing countries with recognised land tenure or user rights who are part of or have formed organisations and groups such as cooperatives, associations, community-based organisations or other organisational forms.... Producers should not be structurally dependent on permanent hired labour, and should manage their land mainly with their own and their family's labour force.

(Plan Vivo Foundation 2008, p.12, emphasis in original).

In Plan Vivo's rules producers are a central actor in identifying what can be certified as a

Plan Vivo offset, and ownership of the means of production was made relevant to identifying offsets with SD benefits. As will be discussed further in Chapter 6 and 8, the restriction of the standard scope to cooperative and smallholder lands formed a distinctive definition of SD at Plan Vivo, with implications for how carbon was formed through their practices.

4.6.5 Plan Vivo and the UN

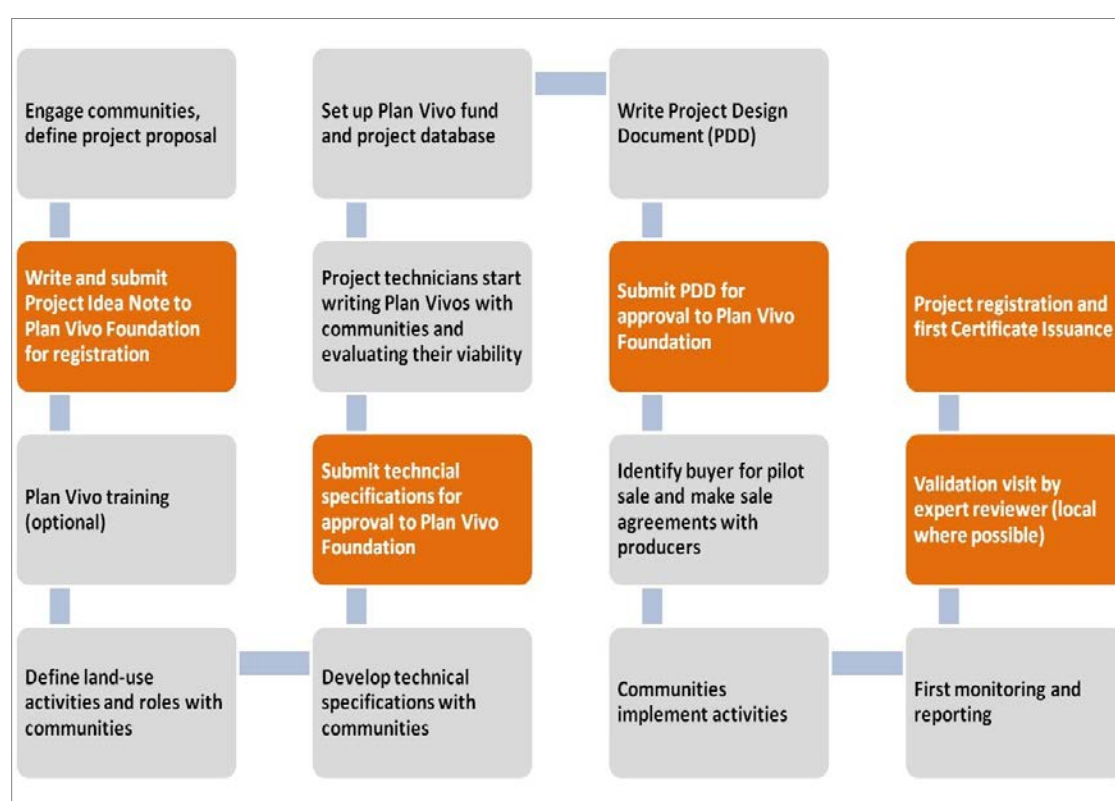
Plan Vivo developed before and independently from UN negotiations. The exclusion of almost all forestry from the CDM meant that even once the Kyoto Protocol was ratified, it had less direct impact on the activities certified by Plan Vivo. As a consequence, CDM and the Kyoto Protocol did not feature in Plan Vivo marketing materials in 2010/11 (Plan Vivo Foundation 2010b). The Governance and Operations Director felt that their prices and procedures were not directly tied to the fortunes of the CDM, and described themselves in conversation as “operating in a separate market” due to their forestry focus and emphasis on local communities rather than a primary concern of CDM offset fungibility. However, they did acknowledge some crossover in terms of the reputation of offsetting more broadly. During the CDM HFC23 scandal in 2010, where industrial processes that had been very profitable sources of CER were excluded under CDM rules, Plan Vivo staff mused on whether the fact that these previously safe credits were now being seen as risky or invalid would alter the – to their minds, falsely held – perception of forestry as a more risky type of offsetting.

Plan Vivo had more direct relationships with a different but related set of UN discussions (REDD) over forestry. They presented their rules as a potential model for future REDD developments, similar in many ways to The Gold Standard message of leading-by-example. In 2010/11 they did not see lobbying at UN meetings as the primary purpose of Plan Vivo, but they considered that their successful implementation of ideas and practices could filter into broader discussions and rule-making. For example, staff identified one benefit from translating information about the standard into other languages as making it easier for others to use their work as an example when lobbying on REDD.

4.6.6 The Plan Vivo certification process

Many parts of the Plan Vivo process for project application are similar to The Gold Standard. Beyond the obligatory points of passage of registration, validation, verification and certification that are echoed throughout offset certification schemes, both standards require consultation with local stakeholders. Initial documentation is also subject to a desk review by Plan Vivo Foundation staff and a validation report must be prepared by an external auditor. Projects must have site visits by the auditor and on-going verification, with reports passed on to the Plan Vivo Foundation.

Figure 4.9: Plan Vivo: Certification process



The steps in orange relate to stages of formal project registration and review.

Source: Plan Vivo Foundation 2010a. "Developing a new project."

The total number of projects in the Plan Vivo pipeline is small. However, the projects themselves can grow over time to include larger numbers of farmers and areas of land, typically from under one hundred farmers at the beginning to several hundred farmers over a period of five years. There were fewer variations in the rules for different

projects to be registered at Plan Vivo than at The Gold Standard.

4.6.7 Relationships with projects

As already noted, Plan Vivo focused strongly on their relationships with the projects they registered and certified. Rather than be a standard with “a list of requirements, check the audit and that's it... Plan Vivo wants to be a resource, to advise and support projects and development, to mediate between them is the ideal” (Interview 1, 2010). At Plan Vivo, they saw voluntary standards as a diverse group not only in their scales or scopes, but in what they were aiming to do. “The [voluntary offset] standards have different objectives, that's not always very clear in the comparative literature... [that's] the problem with tick-box comparisons” (Interview 1, 2010). For Plan Vivo, they wanted to improve the representation and reputation of a project – through certification of credits, but this might also include help with correcting the English on project documentation to show to potential buyers and sharing ideas and solutions between projects.

At Plan Vivo, the aim was to construct strong relationships between the standard and the projects, and for the standard facilitate *between* projects. They had a vision of a community of Plan Vivo projects, not only bilateral relations between each project and the Plan Vivo Foundation. They sent regular emails out to projects that were being certified with Plan Vivo including information about developments on other projects. Staff talked about adding the point of contact from the local NGO that would be coordinating a new project onto this mailing list, saying it would help to “bring him into the family” (Meeting 2010). By offering translations of some documentation, staff hoped to facilitate the relationship with a project already underway as well as make the standard more accessible to other projects. This was not favouritism, but offering each project a personalised service depending on their needs. Staff at Plan Vivo recognised that being a family and offering more personalised services for each project would be more difficult as project numbers increased, but were aiming to maintain their strongly supportive, information-sharing role even with future growth in the pipeline, as a key part of what a standard should do.

The ways in which staff talked about their interactions with projects at both standards

indicated that their role was to scrutinise and monitor them, but importantly also to assist and support them. I saw no signs of nepotism, favouritism or undue flexibility with the rules or practices of either standard, but a definite sense that staff at the standards wanted projects to be as good as their accreditation would prove that they were, and therefore a desire to help projects reach this goal. In both cases, it is important to highlight that all of this relationship-building would happen without standard staff necessarily visiting the project site. At The Gold Standard, while most standard staff had visited some projects, there were many projects that had not been visited by anyone from The Standard. Standard staff might meet some project developers face-to-face, but this was far more likely to be at a conference or expo than on a project site. In particular, the local stakeholders (Gold Standard) or producers (Plan Vivo), local plants or animals were, in their vast majority, never seen by the staff at a voluntary standard organisation except perhaps as they were counted, quoted or photographed by the project developer and included in documents. In this sense, there is a significant differentiation between projects being facilitated through the processes of the standards, and the standards facilitating or supporting the projects in their daily activities as offset projects.

4.7 Conclusion

This chapter has set the empirical scene of this research, describing two voluntary offset standard organisations and focusing on The Gold Standard as the primary site of this research. This description provides a detailed starting point for understanding more about how offsets were enacted by standards in 2010/11, and the actors and assemblages involved. The purpose has not been to judge whether the standards are sufficiently legitimate, appropriate or credible in their assemblages as experts, or whether they *should* be engaged in carbon markets. Instead, the detailed description serves to begin to note differences as well as similarities inside what is taken for granted in the assemblages of offsets, and of carbon.

Notably, the differences in the scopes of the two organisations demonstrate some of the variety of activities that could be counted and certified as offsets with SD benefits. By 2010-11, The Gold Standard had a larger budget, staff, and accredited more projects than Plan Vivo, but in both cases, project documents and activities were interpreted through obligatory passage points of audits, texts and interactions that match up to

words like verification and validation. Chapter 5 will explore what is taken-for-granted in these activities in more detail. Both standards had assembled named groups within and outside the organisation who were designated specific roles, sometimes similar between the two cases (e.g. TAC/TAG, The Board, a Secretariat/Foundation, auditors) sometimes different (as in the cases of NGOs and producers). Despite the differences in their scales and scopes, both organisations were categorisable as voluntary offset standards.

It has been shown that the aims of both organisations emphasised features beyond GHG emissions reductions in their constructions of carbon offsetting. The Gold Standard defined this other part of their twin goals as sustainable development, Plan Vivo used a range of phrases including but not uniquely SD. I have shown that although both organisations focused on local social, economic and environmental issues, from their mandates and scopes there were also differences in how they interpreted what SD could or should be in relation to offsetting. In particular, Plan Vivo rules over producers meant that ownership of the means of production was a feature of their formation of SD and offsetting; examples of the type of framing of issues and creation of identities that Barry (2006) identified in zones of qualification. Chapter 6 will examine in more detail the practices that make up SD at The Gold Standard, and explore further alternative assemblages of SD and offsetting inside and outside the zones of different standards.

In this chapter I have argued that the work of being a standard incorporated similar features with different emphasis at each organisation. Observing work at the standards provided evidence that standard-project relations in both locations combined activities of facilitation, scrutiny, monitoring, double-checking, overseeing, helping and supporting, being accessible and managing personalities, keeping inappropriate projects out of the pipeline, as well as crucially encouraging other project developers in and along the accreditation processes. For The Gold Standard, “leading by example” and “pulling the market” meant focusing on the “granularity” of technical rule-making, and the procedures by which rules were followed. Being “on the ground” in offsetting meant focussing on the granular detail of procedures and rules – it was not a reference to scale or space. The effort put into being responsive to project developers whilst maintaining

an independent perspective was an intrinsic part of daily work, and highlighted by staff as an important feature of the credibility of The Standard. At Plan Vivo, more of the emphasis was on building resources, support and relationships to projects that included technical support as well as the application and explication of rules. This is not to say that Plan Vivo did not also apply and maintain strict technical specifications, but as a standard they saw their work as significantly more than producing “a list of requirements” and checking auditor reports.

The standard organisations relied not only on project developers, but on other organisations – auditors, governments, international organisations, NGOs and registry software providers – to cooperate and participate in order to maintain the standards as practices as well as institutions. The supposedly “symbiotic” relation between The Gold Standard and the CDM (Levin et al. 2009) was problematised to show how The Standard was the result of criticisms as well as support for CDM rules, and how it needed to create difference as well as conformity between its aims, rules and practices, and theirs. The aim here is not to judge the legitimacy of these relationships, but to describe them in order to assist understanding more about the assemblage of carbon as it will be explained in the following chapters. Chapter 5 will consider the relationship to auditors in particular in more detail to understand what is taken-for-granted in offsetting. A brief mention was also made of credit buyers and registries, noting how both require the sales of credits to pass through particular technologies (registries), but the lack of significant direct contact that either standard may have with its buyers. This lack of relationship will be explored in Chapter 7, to consider the boundaries of voluntary offset standard activities and the ends of “technological zones” (Barry 2006).

Chapter 5: The carbon orthodoxy

5.1 Introduction

Where the previous chapter assembled voluntary offset standards, this chapter looks to identify the assemblage of offsetting as it was produced at the site of two voluntary offset standards. Responding to the second research question, the concepts and activities selected here are suggested to be what was taken-for-granted or “cognitively legitimate” (Suchman 1995) by the standards as part of offsetting. In keeping with the ANT framework, the emphasis in this chapter is on investigating what the actors involved (voluntary standards) designated as cognitively legitimate to offsetting through the assembling of discourses, procedures and technologies, not a normative judgement on what should be inherent to offsetting.

The first section describes the texts (methodologies) that nominate, formulate and regulate offsetting as a central part of the assemblage. This is followed by noting a peculiar presence in these documents, and in carbon offsetting more generally: the concept of additionality. This, in its ordinary and suppressed versions will be described to explain how it is formulated within the practices of carbon markets. The second part of the chapter looks at three concepts: measurement, quantification and auditing. The centrality of these ideas will be explained through how they are practiced and discussed, and where they are criticised as well as where they are enacted. The final section of this chapter draws attention in particular to the third party organisations and those (humans, organisations and objects) that are undertaking and checking the measurement of activities that, in the process, become carbon offsetting activities. In sum, this chapter presents what was found to be taken-for-granted in a particular type of carbon as it came to be enacted through the practices of voluntary offset standards.

5.2 Methodologies

Methodologies (meths) are the blueprints or instruction manuals for carbon offset

projects. They take the form of documents, texts including tables, equations and diagrams as well as written explanations, usually running to several pages and sometimes to several documents. They are written to be applied to specific project types, converting the general principles of offsetting set by the UN or different voluntary standards into rules that can apply at particular locations. To use D.E. Smith's description, "such 'textual technologies'... co-ordinate people's work in particular settings" (2001, p.171). If an activity has not followed a methodology (or had a methodology written based around the experience of practice on a particular project) then it simply cannot be a carbon offset.

5.2.1 Where do they come from?

A methodology has a separate identity and life cycle from the rules of a particular standard that may use it to judge projects, or the description of a particular project. They can be thought of as similar to legislation, where the standard is like a constitution, and each project represents a particular legal case.²⁷ The impetus for the creation of a new meth often comes from a project developer, who wants to find carbon finance for a project or activity, but the activity (or the particular way it is being undertaken) is not (yet) codified as a carbon offset activity. Thus a project developer (or a consultant employed by a project developer) writes a methodology and this is then submitted to the CDM or a voluntary standard to be recognised under their scheme.

Some meths are developed independently of specific projects. For example, the German government funded The Gold Standard and two other organisations to develop methodologies that would be appropriate for small scale projects based in Africa, independent of any specific project sites or developers, which project developers could then use. A methodology might describe an activity which is already being undertaken or something that has not yet happened – although to qualify as an offset, the specific circumstances of a project must demonstrate that they would not have undertaken the activity without the benefits (additionality) of being an offsetting activity.

Meths, these instructions for how to make an offset project, are publicly accessible on the websites of standards and the CDM. Each meth gets given a number and/or name to

²⁷ This helpful metaphor is borrowed from Tim Schloendorn (2012).

identify it, but it is not necessarily identified by who wrote or applied it, although the name may also include the regulation body or standard which has approved it as part of its name.²⁸ Once a meth is approved by whichever accreditor has been chosen, other projects can also make use of the same methodology. Thus they are not proprietary, although they could refer to activities that make them specific to a particular ecosystem, (patented) technology or cultural practice. They are not proprietary to particular standards either. If a meth has been approved by one standard or the CDM, it may be automatically eligible for use with other standards. For example, the voluntary standard VCS allow projects to use meths that have been approved by the UN, specifically for VCS or for use on specific project types under the Climate Action Reserve standard (VCS n.d.). Meths come to play independent roles in the assemblage of carbon offsetting, intertwined with but independent from particular projects, standards or individuals. These texts patrol the boundaries of what is and is not a carbon offset.

At The Gold Standard, they accepted all CDM methodologies that are within their scope and “meet specific eligibility criteria” (for example limits to scale on certain project types) (The Gold Standard Foundation 2009c). In 2011 there were over 100 meths eligible for use with The Gold Standard, of which all but seven were CDM meths (The Gold Standard Foundation 2011f). Those seven had been approved directly by The Standard for voluntary offset production. The Gold Standard do not automatically accept methodologies that have been approved by any other independent standard. In the rest of this section, the meths that are referenced are a mixture of Gold Standard-only and CDM meths, with examples also taken from Plan Vivo.

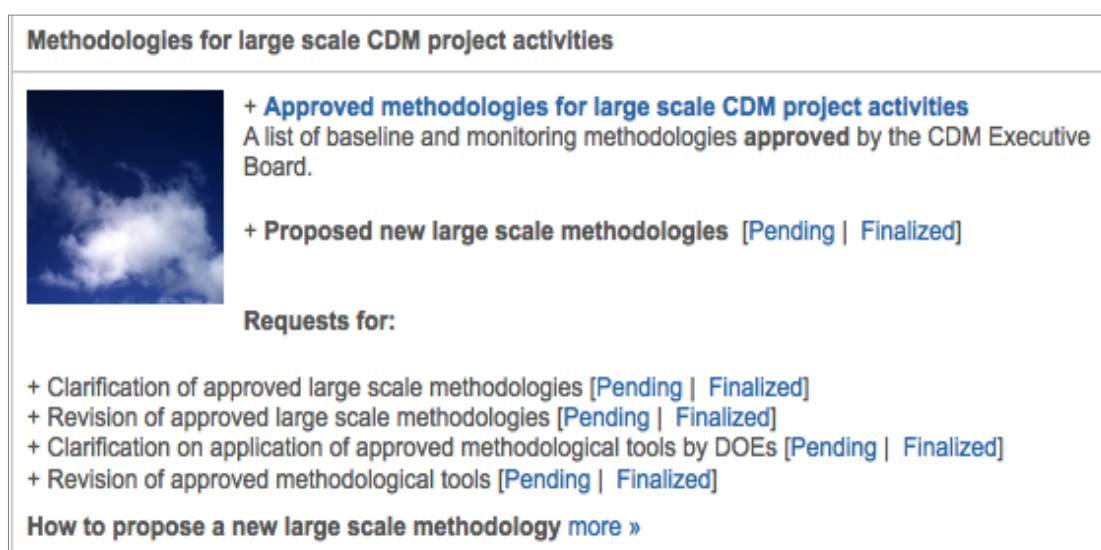
5.2.2 The biography of a text

Although the authorship of a meth is not necessarily recorded as part of the documentation, the biography of a meth is made explicit. Revisions are often brought about by requests from project developers, or sometimes auditors. The CDM rules on the matter also suggest that DNA (i.e. host governments) or stakeholders (more or less anyone) might want to submit revisions, clarifications or new methodologies (CDM).²⁹

²⁸ For example The Gold Standard puts its name into any meths that it accepts that are not CDM methodologies

²⁹ CDM Executive Board (2008a).

Figure 5.1: Screenshot of CDM methodology website



Links to proposed new meths under consideration, four links showing clarifications and revisions and a link to instructions on how to propose a new methodology are located under the list of approved and proposed meths.

Source: Screen shot from UNFCCC, CDM Methodologies website, March 2012.

It is not considered important to remember who wrote the documents or who suggested revisions – meths can be legitimate independent of their authorship. However, their dynamic nature and evolution is relevant to market participants and made explicit. Projects can run for periods of up to 21 years, so projects that submitted documentation under earlier versions of a methodology need to be able show that they were abiding by the rules as they stood at that time, even if changes were made to a methodology at a later date. The detail of changes, the documentary biography, is included in the meth (figure 5.2).

Figure 5.2: Version updates of CDM methodology AMS-I.D.

History of the document*

Versi on	Date	Nature of revision(s)
17	EB 61, Annex 17 3 June 2011	To simplify the monitoring requirements for quantity, net calorific value and moisture content of biomass. To clarify the applicability conditions.
16	EB 54, Annex 7 28 May 2010	To distinguish the project activities solely supplying renewable electricity to a grid from activities displacing electricity from a grid. The parameters to be monitored including the frequency and QA/QC procedures are also included.
15	EB 50, Annex 29 16 October 2009	To include the procedures to calculate project emissions for hydropower with reservoirs as specified in Annex 5 of EB 23.
14	EB 48, Annex 23 17 July 2009	To include more guidance on: the monitoring of electricity generated; calculation of project emissions for geothermal project activities; and editorial changes.
13	EB 36, Annex 26 14 December 2007	To refer directly to the “Tool to calculate the emission factor for an electricity system” for reasons of clarity.
12	EB 33, Annex 23 27 July 2007	To allow for their application under a programme of activities (PoA), where the limit of the entire PoA exceeds the limit for small-scale CDM project activities.
11	EB 31, Annex 21 04 May 2007	To include guidance on monitoring of biomass project activities. All small-scale biomass project activities applying AMS-I.D. (firing only biomass or firing biomass and fossil fuel) are required to monitor the biomass and any fossil fuel used.
10	EB 28, Annex 22 15 December 2006	The proposed revision includes guidance on consideration of capacity limit and on estimation of baseline/project/leakage emissions in the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility.
09	EB 25, Annex 29 21 July 2006	An amendment to the procedure for estimating the combined margin emission factor of AMS-I.D, making it thereby consistent with ACM0002.
08	EB 23, Annex 32 24 February 2006	To: (i) include provisions for retrofit and renewable energy capacity additions as eligible activities; (ii) Provide clarification for baseline calculations under Category I.D; and (iii) Provide clarification on the applicability of Category I.A as against Category I.D.
Decision Class: Regulatory Document Type: Standard Business Function: Methodology		

* This document, together with the ‘General Guidance’ and all other approved SSC methodologies, was part of a single document entitled: Appendix B of the Simplified Modalities and Procedures for Small-Scale CDM project activities until version 07.

Source: CDM Executive Board 2011, pp.15–16. “CDM AMS-I.D.: Grid connected renewable electricity generation. Version 17.”

The alterations to a meth are sometimes clarifications – that is, to changes in the wording of the document that leave the activities they are attempting to describe

unchanged. But revisions can also require a change in how the practice of an offset project is undertaken (Version 15 in figure 5.2 allowed for hydropower from reservoirs to be calculated under this methodology), or how the activity or the baseline is measured (the first part of the revision in Version 14 is the inclusion of more guidance on monitoring electricity outputs).

As such, those who are having the rules applied to their projects have the capacity to request that those rules get changed, and the activity of attempting to apply the rules leads to ongoing re-negotiations and re-statements of what the rules of the carbon offsetting game actually are. It is accepted as normal that changes will be made to the rules of how to undertake and measure a specific type of offset activity. While for offset critics it might be problematic or strange that the rules of the game for specific project types can change in these details, for those engaged in carbon markets it is part of the ongoing learning that epitomises a new and developing set of scientific, technical and economic practices.

The meanings of meths can also change without any alterations to the texts themselves. For example, monitoring plans for a project that reduced emissions through replacing water boiling (using firewood) with water purifiers gave an alternative to Latour's description of bringing the world into the laboratory (Latour 1999). In this case, the developers redefined the world *as* a “field laboratory.” The meth they were using required the calculation of how much biomass was used, on average, to boil water. The meth required that “in order for the test to be consistent across stove types this shall be completed in a laboratory” (The Gold Standard Foundation 2010c, p.37). The developers re-defined laboratory to include the field, in this case kitchens in rural Western Kenya.

In order to meet the intent of [the meth], the project proponent conducted field laboratory testing... The project proponent therefore developed a protocol calling on field laboratory subjects [women in poor communities in Western Kenya] to boil water ... at the[ir] home.

(Vestergaard S.A. 2011, p.43).

In the project documentation, the developer goes on to give a reference to academic literature where laboratory had been used in population studies when referring to field

sites, and to practitioner literature to other similar tests that require data to be collected in field laboratory tests, with the participation of local people (p.48). Gold Standard staff accepted this (re-)definition and registered the project.

This flexibility in the making and re-making of the rules of offsetting did not undermine the authority within the market of the idea that carbon offsetting activities must be made according to codified (evolving, contestable) meths. In carbon markets, as Smith noted in universities “interpreting what people do or have done in the terminology of the text accomplishes it as an instance of the process” (2001, p.185). A project comes to be a carbon offset by relating itself to other carbon offsetting practices through a methodology. At the same time, these texts were frequently altered through interactions with specific cases, with the consequent changes applicable to other projects.

5.2.3 The detail of meths (places, things and people)

Inside these texts, each methodology provides instructions – lists, equations, descriptions, definitions and diagrams of where, when, over what time periods and how activities (or the cessation of activities) must take place. The level of detail – the granularity favoured by The Gold Standard – that this can entail perhaps has to be seen to be believed, so a small sample is included here. The examples have been chosen are not extreme cases in their prescriptions and proscriptions. They demonstrate the ways that some meths were tied to activities in identified and non-replicable spaces and times, while others were designed to be applicable in (and therefore abstracted from) any particular geography or culture. We can note, in a logic familiar to faithful ANT scholars, how things (trees, oil, people, gases...) are invoked to be quantified and measured as part of the process of making a carbon offset without differentiation or discrimination between the human and non-human. They also remind us that even where detail is inscribed, in any rule-based system there are spaces left and interpretations that must be made – the finitism of rules (Hatherly et al. 2005).

The table below is a typical extract from a Plan Vivo methodology (known in-house as Technical Specifications, or tech-specs). The level of precision demonstrated was not exceptional in carbon markets. The number of three specific species to be planted at the

project site is defined as 1,111 per hectare; no more, no less. Project developers are told – and auditors are therefore being told to check – which tree types should be planted as seedlings on the site and which as seeds, and where particular care needs to be taken in handling saplings. In this case, the methodology has been written for this specific site and thus contains details of which trees are indigenous to the region as part of the measurement, meaning that the same methodology could not be applied elsewhere without modifications. This (perhaps already local?) knowledge, or expert horticultural training about the needs of particular species is directly relevant to this site. But rather than being left in this location, is seen to be relevant to explain, codify, specify and then prescribe in the documentation, to appear on websites for others (perhaps buyers or other projects) to read if they are interested, and inform auditors of what to measure when they visit the site every two years.

Figure 5.3: Plan Vivo technical specification for tree species

Species	Establishment	No. to plant per hectare
<i>Maesopsis eminii</i>	Established by use of seeds and transplanted at a spacing of 4m x 4m.	625
<i>Acrocarpus fraxinifolius</i>	Established by use of seeds and transplanted at a spacing of 4m x 4m.	625
<i>Casuarina equisetifolia</i>	- Propagation is mainly by seed; however, there is an increasing use of cutting. 3M x 3m. - They can be established using containerized seedlings, bare root seedlings or rooted cuttings. - Seedlings should be planted in well-drained light soils, not clay soils, to decrease incidence of diseases and pests.	1,111
<i>Podocarpus spp</i>	- The trees are established by use of seeds or cuttings but cuttings taken from lateral branches and shoots produce plants with a lateral growth habit rather than an upright one. - When transplanting the seedling into the open ground, care must be taken not to damage the taproot, as it will result in a long period, sometimes up to a year, during which the tree will show no growth. Initial spacing will be 3m x 3m.	1,111
<i>Markhamia lutea</i>	Plant at 3m x 3m. Trees may also be propagated by seedlings or wildlings. They should be planted in a deep hole.	1,111

Source: Copy of table from Onyango et al. 2010, p.10. “Emiti Nibwo Bulora woodlot technical specification.”

Other methods are written in ways that make them independent from a particular project site, giving them the potential to be replicated in many different projects all over the world, but can still include such minutiae in their requirements. The following equation is to estimate the amount of GHG produced from using plant-based cooking oil in domestic or small business stoves for food production, a change from a baseline situation where fossil fuels or non-renewable biomass is being used. The calculations are designed to be generalised across project sites that could be in different climatic zones with users from different culinary traditions.

Figure 5.4: Calculation for thermal energy from plant oil for the user of cooking stoves

The net quantity of heat supplied by the project activity is calculated as follows:

$$HG_y = \sum_j^n HG_{yj} \quad (3)$$

$$HG_{y,i} = FC_{VO,i,y} * NCV_{veg,i} * 10^{-3} * \eta_{th_{VO,i}} \quad (4)$$

where:

Data	Description	Unit	Value	Reference
HG_y	Net quantity of heat supplied by the project activity during the year “y”	TJ/yr		Calculated on ex-post basis
$HG_{y,i}$	Net quantity of heat supplied by the project activity during the year y on basis of vegetable oil “i”	TJ/yr		Calculated on ex-post basis
$FC_{VO,i,y}$	Total quantity of vegetable oil type i used per year by oil stoves in the project	t/yr		Provided on ex-post basis by recording the volumes of vegetable oil distributed to the consumers by the distribution points
$NVC_{veg,i}$	Net calorific value of vegetable oil type “i” (TJ/Gg)	MJ/kg		NVC of plant oils are determined based on direct measurements of a representative sample ⁵ .
$\eta_{th_{VO,i}}$	Efficiency of the plant using vegetable oil “i”	none		Data to be provided by the project

Source: Copied from The Gold Standard Foundation -, p.6. The Gold Standard Voluntary Gold Standard Small-Scale Methodology: Thermal Energy from Plant Oil for the User of Cooking Stoves (Version 1).

The document describes generically, but in great detail, where the plant oil that is being used should come from (sustainable sites, not detrimentally displacing food production, not using palm oil unless it meets the rules of the Roundtable on Sustainable Palm Oil rules and only using genetically modified crops if local stakeholders agree), the quality of oil that must be used, details on the stove type and with the treatment of waste waters created in the production of the oil also calculated as part of the project emissions. The methodology specifies a calculation to determine the amount of heat produced for the

amount of oil used in the stoves of the project activity irrespective of where the project is located.

Carbon offset methodologies do not differentiate between human and non-human actors in what they are seen to be able to specify and therefore make relevant to monitor. They can define what materials should be used, as above, but can also specify by whom, for example in this CDM meth for solar cookers which is also eligible for use under The Gold Standard:

To foster continued and frequent use of the solar cookers:

- 5 *Participating households (solar cooker users) are required to pay at least a portion of the cost of the solar cooker;*
- 6 *Participating households shall receive training for appropriate use of the type of solar cooker, at or before the time of distribution of the solar cookers. This training shall take into account local cooking habits (e.g. types of food prepared, customary mealtimes, etc.);*
- 7 *A local organization shall be involved on an ongoing basis to assist in promoting and facilitating the continued use of the cookers.*
(UNFCCC 2012c, p.1).

Although they were implicitly present in the previous two examples as well, the detail in this meth makes more explicit how the activity of producing a carbon offset describes and prescribes for people, not just trees or oils. The users of the solar cooker (defined as the household, rather than the individual user who does most of the cooking within a household, or the person(s) who gets to eat the largest proportion of what is cooked on the solar cooker) must pay (although it is not specified to whom) for a solar cooker to be included in the project. It is also obligatory and therefore monitored that local cooking habits are taken into account in training, which we must assume is an instruction directed towards the potentially non-local trainers, rather than a suggestion that local people need to be educated in their culinary habits and require training to know about their customary mealtimes. A local organisation must be involved in promotion and continuing facilitation of the use of solar cookers in whichever community and whichever country a project is being undertaken. A definition of local is not presented within the methodology, so the project developer has the liberty of deciding whether this must mean originating from the same village, neighbourhood or city, sub-state region, the same country or supra-state region to be defined as local,

assuming at the documentary level that what is important is a geographical rather than cultural or religious affinity, and not specifying whether this must apply to the staff individually, or the founders, funders or legal status of the organisation itself.

Methodologies also detail how activities should be interpreted, monitored and reported, not only how and by whom they should be undertaken. The table below explains which measurements must be made, options on which tools could be used and in which combinations, where physically on the project the measurement should be taken by certain tools, the frequency (daily, or per shift, and continuous monitoring) and under which conditions (in the case of heavy oil, with “typical operational conditions”). These measures made onsite with material technologies should be cross-checked, if possible, with economic measures (fuel invoices) and calculations based on aggregate data (the annual energy balance). The meth also specifies how and for how long data must be stored. Here if there is a ruler gauge (in a “book of control”) and elsewhere in the document it states that all from monitoring should be stored “electronically and be kept at least for 2 years after the end of the last crediting period” (p.2).

Figure 5.5: Monitoring information for CDM methodology AM0063

Data/parameter:	FC_{i,j,y}
Data unit:	Mass or volume unit per year (e.g. ton/yr or m ³ /yr)
Description:	Quantity of fuel type <i>i</i> combusted in process <i>j</i> during year <i>y</i>
Source of data:	Onsite measurements
Measurement procedures (if any):	- Use either mass or volume meters. In cases where fuel supplied from small daily tanks, rulers can be used to determine mass or volume of the fuel consumed, with the following conditions: The ruler gauge must be part of the daily tank and calibrated at least once a year and have a book of control for recording the measurements (on a daily basis or per shift); - Accessories such as transducers, sonar and piezoelectronic devices are accepted if they are properly calibrated with the ruler gauge and receiving a reasonable maintenance; - In case of daily tanks with pre-heaters for heavy oil, the calibration will be made with the system at typical operational conditions.
Monitoring frequency:	Continuously
QA/QC procedures:	The consistency of metered fuel consumption quantities should be cross-checked by an annual energy balance that is based on purchased quantities and stock changes. Where the purchased fuel invoices can be identified specifically for the CDM project, the metered fuel consumption quantities should also be cross-checked with available purchase invoices from the financial records.

Source: CDM Executive Board 2008b, p.3. "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion" (Version 02).

Methodologies assign roles, responsibilities, correct and incorrect procedures and definitions. They inform relations between people (buyers-sellers; local-other; the measured and the measurer), align or exclude practices (for cooking, measuring, planting, calculating) and technologies and objects (cookers, timers, seedlings – genetically modified, hybridised or not). Nevertheless, even within this level of detail, there are still spaces where interpretations have to be made and the local situation comes to determine how activities are undertaken – examples abound of finitist decisions of how much to codify, and how much to incorporate in the decisions over whether or not each moment on the project will meet the co-constructed expectations of being an example of X (Hatherly et al. 2005). This is part of the granular work that standards undertake.

5.2.4 Help me read that graph said The Technical Expert

The texts of methodologies, in all of their fine and refine-able detail, were the result of continuous adjustment and effort on the part of those who apply them to make their

projects comply with their descriptions, and also those who wrote them in their efforts to make the texts appropriate the particular situations of projects. As was witnessed during this research, there were times when it was difficult even for those most used to handling these documents to determine exactly what a particular requirement in a meth was intended to do or the best way to do it. A great deal of effort was required to align statistical tools, geographies and humans.

The advisors who sat on the Technical Advisory Committee (TAC) of The Gold Standard were selected precisely because of their expertise in matters relevant to carbon markets. In the extracts transcribed below, Standard staff presented the TAC with graphs, texts, formulae and statistics to discuss amending a meth. At issue were the rules on the size and selection of population samples which are used to calculate emissions reductions and potential negative economic or social impacts of a particular methodology. Project developers who were already using the meth had criticised a certain aspect of it. Data and opinions had been collected from external statisticians and at least two project developers with projects that follow the meth. There were different opinions on the most reliable, valid and most conservative – least likely to lead to false positives – methods to use. The colloquial language being used demonstrated the relationships between experts who are comfortable working together over long periods of time, and was not a reflection of any lack of seriousness or inattention to the detail and implications of the matter at hand:

Gold Standard (GS) staff: I've discussed it with two statisticians independently. Both said we shouldn't apply statistical precision to the baseline and the project separately... That's how the meth is now... So to give you an example, see the diagram I sent before the [TAC online meeting] call...1.2 as covariance, that makes 180 households that you would have to monitor which is very costly.

TAC 1: Help me read that graph again.

...

GS staff: ...So what we thought would be the max sample size would turn into the minimum... so to solve that, there's different opinions... it's technical... a T distribution can be one-sided or two-sided... so another way is to cluster the data, but this doesn't help much... we are left with the option to lower precision requirements...

TAC 2: I'm pretty perplexed by this I have to say. It's about cost, but it's a lever with statistical principles. We have to get this meth on the street. I'm worried if we continue to tinker with it...

...

TAC 1: We're looking at it through a statistical lens, but the biggest area of concern... The important thing is how to select [the sample]. And I know that the way you do this,

cos I've been there [managed projects], is that you pick the ones with the best roads to get there... So if you can demonstrate that your sampling is random, then you don't need to have as many numbers?

...

TAC Chair: So [this amendment] can be approved but revisited in six months. And we can ask for feedback from PP [project proponents]?

(Approved by TAC members)

Not only was the data complex even for carbon market experts to make sense of (*help me read that graph... it's technical... I'm perplexed*), but the best way to proceed was not immediately clear. The discussion started as a concern about the potentially inappropriate application of statistical measures and the differences between them (*a T distribution can be one-sided or two-sided...so another way is to cluster the data*). But the discussion had to include the rules on selecting samples, data validity as well as reliability, which was informed by the experience of one TAC member (*I know that the way you do this, cos I've been there*), and the infrastructural limitations of the locations of projects (*you pick the ones with the best roads*). There was an explicit recognition that the matter was relevant and important: with or without a decision, activities were continuing (*on the street*) and that the decision over meth rules had financial implications for developers (*very costly... it's about cost*). The problem was finding something to measure, and a procedure to measure it, that would match with what The Standard was trying to ascertain. What difference did separating the statistical precision make? Would it still measure what they were trying to measure? How big a sample would be necessary to have confidence in the findings? Which type of sampling would lead to a result that would best demonstrate the impacts of the project activities, but at the lowest cost for project developers? The matter had already been discussed on more than one occasion by Standard staff internally, and with different experts. The TAC meeting quoted above reached a conclusion, but even this decision was left open to future review with a specific request for more input from project proponents – those who would have to implement the new rule – because the consequences of the amendment were complex and difficult to predict.

During these discussions there were no queries about the amount of data being collected: the worry in the discussion above was about how long The Standard and their advisors were taking to tinker (as also seen in Fujimura 1987, p.265) with the meth and

caution about the implications and costs that any change would mean, rather than that this level of detail was potentially unnecessary. The difficulty of getting statistical techniques, road access and project developers to align themselves neatly in a way that the TAC experts could quickly understand and take decisions on made for long, complex discussions. This was the everyday nature of assembling what was taken-for-granted in carbon offsetting. The rules of offsetting were made up of these contingent associations of bumpy roads, statistical formulae, costs, households and graphs. This is one small example of the ongoing work and effort required in producing a methodology that could – and had to – act in carbon markets.

5.3 Additionality

To identify another intriguing part of the assemblage of offsetting, we can trace the links from methodologies. Meths can be read as lists of ways to connect and examine the combinations of people and technologies, human-plant interactions, activities and practices that are found at a project site. In this light they can be curious examples of the abstraction of practices through “textual technologies” (Smith 2001). In their prescriptions for measurement and quantification they also produce something which does not exist at the project site: additionality.

In carbon offsetting, the aim is to make commensurable what has or will happen with something that will never exist. The Foreword to the UN's CDM Methodology Booklet explains what a methodology contains that makes it so vital:

Methodologies are required to establish a project's emissions baseline, or expected emissions without the project, and to monitor the actual ongoing emissions once a project is implemented.

(UNFCCC 2011b, p.3).

This is the creation of what those in carbon offsetting refer to as additionality. Knox-Hayes calls it the “structuring non-spacetime” (Knox-Hayes 2010, p.957), and Welch, in a quote that became one of the more widely used and easily comprehended explanations, “deducting what you hope happens from what you guess would have happened” (Welch 2007 quoted in Gilbertson & Reyes 2009, p.11). In a methodology, we can see the alternate realities of potential emissions written down alongside what is

or will be (estimated to be) created by a project. The data that methods prescribe and provide are specifically designed to quantify something that cannot be measured; the alternative hypothetical future that must, in its role in carbon markets, never happen. The future that is enacted on a project must be contrasted with a version of the non-existent future to ensure that the project activities result in lower emissions of GHG than the hypothetical alternative. Both the future and the non-future must be simultaneously present through these texts for carbon offsetting to occur.

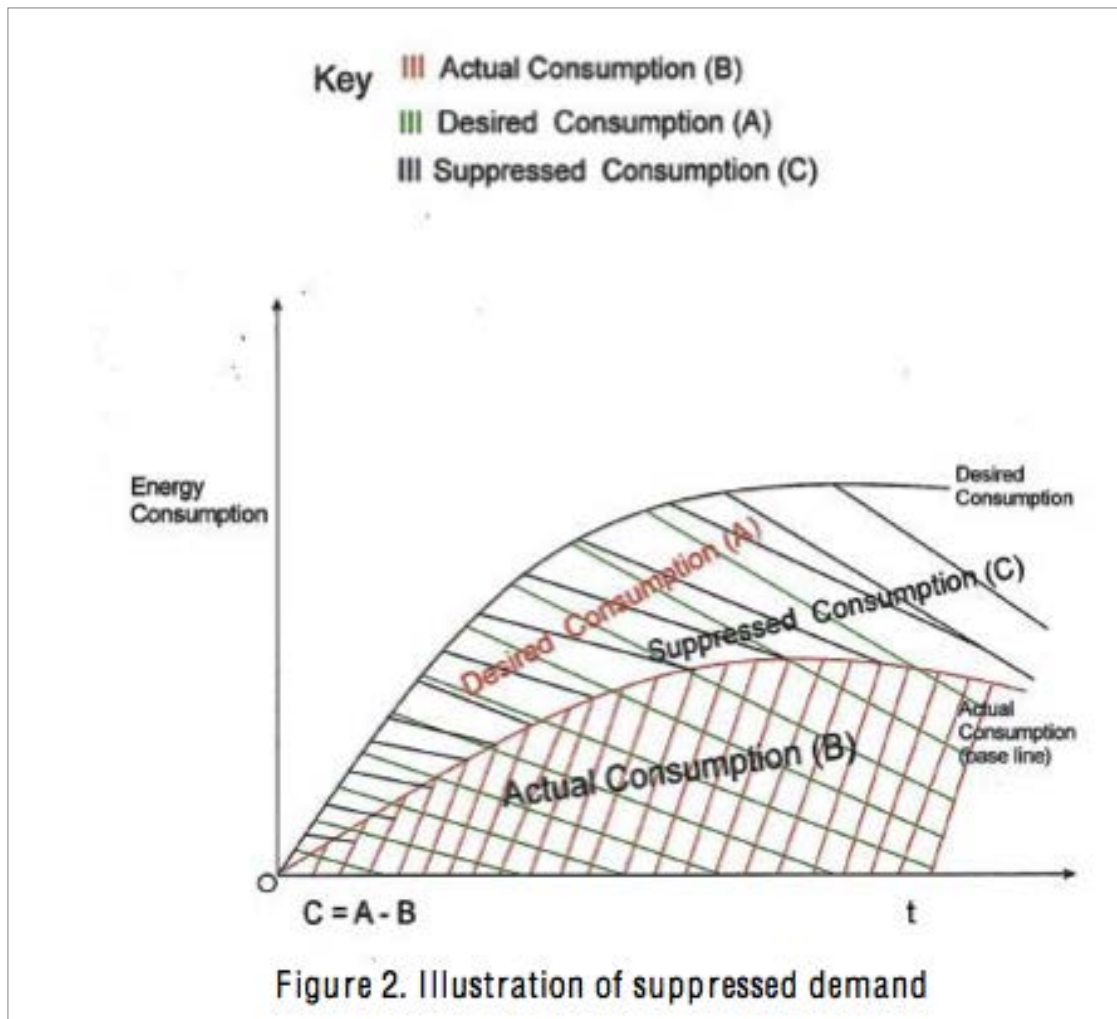
Even though a future that never takes place (the non-future) cannot be directly measured, it must nevertheless be imagined, described and precisely quantified so that the resulting activities of a project can be shown to be additional. Phrasing it in this way may make the task seem peculiar, even sometimes to those who participate. As one person commented during an interview, “it’s funny if you think about it, we know very well how to evaluate a thing that doesn’t happen” (Interview 6, 2011). For the calculation of an offset, what will not happen is a vital construction within the assemblage. Without the presence of this comparative non-future, payments for particular behaviours which may be seen to be beneficial (in terms of global GHG emissions, or whatever other principles) cannot equate to emissions that are being produced elsewhere. The assemblage of offsetting cannot exist without the presence of what must remain absent from the future, but must be minutely created as part of the assemblage of the present.

As well as the activities at a project site, some of these quantifications take into consideration government policies (renewable electricity feed-in tariffs, for example), population growth (resulting in pressure on fuel sources) and economic development (and access to currently out-of-economic-reach technologies). This last issue became a particular discussion point in 2010-11 with the invention of the concept suppressed demand. This is the idea that baselines for project sites in poor places could estimate what that GHG emissions would be if the area developed to meet the basic needs of its population, irrespective of whether this was seen to be a likely outcome at a project site over the duration of a project. To give an example, in sub-Saharan Africa the expected rate of development is usually very low. This means the hypothetical alternative future

without a project to reduce energy emissions is also low, because the population will probably not be able to afford to increase their energy consumption in the foreseeable future. It can therefore be difficult to reduce hypothetical future emissions, because the imagined non-future looks too similar to the low-carbon (high poverty) present. Although less GHG emissions is good for avoiding climate change, for offset markets a lack of development (and GHG emissions) is a problem because it is harder for a project to get lower emissions than the baseline. The solution has been the idea of a baseline that includes the consideration of suppressed demand. This works by calculating not how much countries such as Mali probably will develop in the next 21 years, but on how much they should develop to meet what are seen to be the basic needs of their populations (and the energy that this consumes and pollution it causes) irrespective of whether this is identified as a likely future scenario. In such cases, a comparison is being made not against a counterfactual hypothetical, but a counterfactual utopian hypothetical.

Calculating a suppressed demand baseline requires decisions not only about what expected emissions might be, but agreement on what a basic sufficiency level of energy consumption in these locations would be. Because these must be translated into calculations of economically valuable amounts of tCO₂e, these agreements must be precise and quantified. To give just one example, the Ugandan-based LDC Environment Centre suggested that for rural housing in African communities, the suppressed demand baseline should include an assumption of four incandescent bulbs per residence (specified as one for a sitting room, one for each of two bedrooms and one for a compound) (LDC Environment Centre 2011, p.10).

Figure 5.6: Graph of suppressed demand calculation



Source: LDC Environment Centre 2011, p.6. "Taking Action on Suppressed Demand - Technical Paper."

The questions that this concept raises about what should be classified as adequate or necessary as basic human energy needs – and who should be deciding – are fairly mind-boggling. This increases exponentially when the discussions blur between positing calculations of meeting the basic needs compared to the desired consumption (as in the graph above), which, we can posit, are not necessarily the same thing. In this case, four lightbulbs has been determined as basically sufficient, but the desires of individuals in a particular community could be much greater (or much less). At times it seemed implausibly difficult to agree upon, even for those who undertook the work of designing and checking calculations of the (utopian and not) potential future scenarios for projects. As the Gold Standard Technical Director once joked in a meeting: "How

do we score suppressed demand? If you do a poll in the [Technical] Team you will get different answers.”

What is apparent in this extension of the idea of additionality to include suppressed demand is that although agreements on utopian futures were still open to doubt and question in 2010-11, implicitly the non-utopian version of additionality was something that was manageable within the work of carbon offsetting and being a standard. The Technical Team started working on a project funded by the German government to come to agreements about suppressed demand baselines as this fieldwork ended. This was only possible because in their work, they took-for-granted that they could already come to the same answers for normal additionality.

5.4 The importance of measurement and quantification

The following section posits measurement and quantification as another cognitively legitimate actor in the assemblage of offsetting as it was found at The Gold Standard. It is necessary in carbon markets to talk about measurement and quantification together, as at times one may appear in order to integrate a situation where the other cannot: as described above, the baseline scenario for additionality calculations can never be measured, although it must be quantified. Chapter 2 discussed the prevalence of quantification and measurement as by no means unique to carbon offsetting. Such techniques have been incorporated as an attempt to replace relationships of trust between individuals (Shapin 2004; Porter 1995) but cannot secure all details of an interaction (Hatherly et al. 2005; Callon 1998) and voluntary standards are a quintessential example of such endeavours (Higgins & Larner 2010; Barry 2006, p.241). In the assembling of carbon offsetting, quantification and measurement play a vital role. The quantities of GHG emissions that are produced and not produced are of utmost importance because economic value is found per metric tonne in the difference between them.

In their marketing, The Gold Standard intentionally highlighted measurement and quantification precisely because they were seen to be so inherent, cognitively legitimate to what offsetting was assembled to be. When describing themselves on their website, The Standard emphasised the importance (and their diligence) in monitoring and quantifying carbon emissions:

Figure 5.7: Extract from The Gold Standard website: Who we are

WHO WE ARE

The Gold Standard is an award winning certification standard for carbon mitigation projects and is recognised internationally as the benchmark for quality and rigour in both the compliance and voluntary carbon markets. We certify renewable energy and energy efficiency carbon offset projects to ensure that they all demonstrate real and permanent greenhouse gas (GHG) reductions and sustainable development benefits in local communities that are measured, reported and verified.

Source: Copy of The Gold Standard Foundation 2011f. Website “Who We Are.”

For them, quantifying and recording information was worthy of note, actions of apparently inherent good. Reductions and SD were not only ensured by The Standard, they were “monitored, reported and verified.” This emphasis was also observed during internal discussions. Comparing The Gold Standard to its competitors, staff saw themselves as superior because of more thorough “double checking” and “more robust” because they required more measurement and quantification. In all of these statements, more measurement is implicitly understood to be better, so the fact that The Gold Standard measured more (or more often) was therefore something that made them better than other standards.

5.4.1 Better to be precisely wrong: exceptions that prove the rule

What is important in the context of this chapter is that The Standard were not unusual in this focus on quantification and measurement. The phrase “monitored, reported and verified” was such a fashionable mantra that it frequently went by its acronym MRV at The Standard and within offsetting and development circles (Sharma 2011; OECD & IEA 2011; Biggs 2010). The importance of measurement and quantification was something that appeared across the carbon offset industry to such an extent that it had become the subject of internal critiques by 2010-11. In a number of contexts during this research, market participants suggested that quantification was at times an unhealthy obsession for the sector. While it was generally agreed by participants that precision and detail were necessary – especially in the production of the sometimes

troublesomely nebulous creation of additionality – the comments went beyond disparate complaints about finicky rules, pointless procedures, or money-wasting exercises. Some criticisms suggested that the carbon offset market was place where measuring had become more important than what was being measured – a desire and obsession with quantification that misses the business-as-usual wood of reducing GHG emissions to tackle climate change because it is too busy counting the hypothetical trees.

There's a certain strictness in terms of validation and verification [in offsetting], which yes if it's not perfect sometimes you can get nothing [but] if a project is doing 75% of what it is supposed to do, you would rather it gets something rather than nothing from an environmental perspective.

(Interview 3, 2011).

The United Nations Development Programme, responding to a CDM Executive Board (EB) call for inputs on developing carbon offsetting, officially criticised the quantificatory demands of the CDM Executive Board as “pedantic” (UNDP 2011, p.2). A similar view was expressed in The Gold Standard's newsletter from an NGO that was involved in setting up The Standard: “HELIO believes that it is better to be approximately right than precisely wrong” (Williamson 2011). In the context of an activity that has been shown to be extremely concerned with precision, this can easily be read as an implicit criticism of the practices of many in carbon markets. As it was put more clearly by one market participant:

It doesn't mean they [meths and tech-specs] are the law or unbreakable... But people get caught up in it [measurement] and don't differentiate. They start seeing these things as rules or laws, instead of understanding them as tools.

(Carbon offset market participant, 2010).

The Plan Vivo Operations and Governance Director criticised the prevailing quantificatory bent of market activities, identifying how measurement becomes seen as a good for its own sake, and how this could be a barrier to achieving other goals:

Methodologies and technical specifications normally contain assumptions based on the best available knowledge at the time, regardless of standard or project type, and these can shift and change over time. It is important that it is kept in mind that there always needs to be a certain amount of flexibility in applying technical standards to account for different project contexts and scenarios, and also to keep the aim of the requirement in mind when applying it.

(Operations and Governance Director, personal correspondence, 2013).

The fact that the type of projects that Plan Vivo worked with (forestry, community based and most commonly in very poor regions and countries) were seen to be some of the hardest to measure and quantify is probably not a coincidence. The science of terrestrial ecosystems for GHG emissions is still comparatively less certain than the reduction of GHG by not burning fossil fuel like in renewables; activities are dispersed in communities, not centralised into factories or farms making them harder to monitor and measure. These project types suffered from being compared (unfairly, in the Plan Vivo view) on criteria of measurability and strictly quantified and quantifiable outputs that had been designed for use on energy and industrial projects. The same respondent described some of these rules as “the carbon orthodoxy,” unhelpfully rigid and monolithic from her perspective. In her eyes the market was dominated by “rules and methods that were designed with specific types of projects in mind: ex-post... must be precisely measured” (Interview 1, 2010). It was particularly difficult to fit Plan Vivo style projects into a frame of offsetting reference that, in Busch's words relating to standards more generally, “insists that in all instances, one kind of story is better than another” (Busch 2011, p.145). As was seen in the detail of Plan Vivo meths, this is not to say that measurement does not matter, but at Plan Vivo there was an expressed concern that “getting the balance of technical precision and standardisation versus flexibility etc. is important” (Operations and Governance Director, personal correspondence 2013).

However, even with this resistance, Plan Vivo meths were also assemblages of detailed measurement and quantification. They also provided certifications based on per-tonne calculations. Even where Plan Vivo did not like all of the implications, measurement and quantification held a cognitive legitimacy in offsetting that meant that they had to be incorporated. Similarly, the UNDP, Helio and interviewee above all offered their critique of over-quantification, but while they discouraged obsession of the detail, their comments were still framed within the language of (calculated) approximation and percentages. The problem was identified as *too much* measurement and quantification (100% instead of 75%; approximations as valid enough, without always searching for precision) rather than a suggestion that these tools were entirely useless. This is supported by the market discussions of materiality explained in the next section.

5.4.2 Materiality

The concerns of offsetting market participants about over-quantification within different offsetting practices have been united under one term. Materiality is used to talk about efforts to actively retrench the reach of measurement and quantification in carbon offsetting. The word has been adopted to give a name to the idea of placing some explicit limits on the quantificatory requests that are made of projects, auditors and certifiers within the (quantification) processes of making a carbon offset. It appears in documentation and regulation by the CDM and other standards, DOE activities and project proponents. It was described for those attending a technical UNFCCC workshop:

Figure 5.8: Materiality explanation slide from UNFCCC 2010 roundtable discussions

The concept of materiality

PROJECT DEVELOPER FORUM

- **What is materiality ?**
 - Materiality is an important concept of auditing. In order to express an opinion on data or information, an auditor needs to be able to stop when any remaining errors, omissions or misstatements are considered too small [according to the end user]
 - A materiality threshold [from the intended user] provides guidance to auditors on what constitutes a material discrepancy, so that they can concentrate their work on areas that are more likely to identify materially misleading errors/omissions/misstatements

A materiality threshold is fundamental to the concept of auditing

Project Developer Forum | UNFCCC Technical Workshop, Bonn

14th June 2010 | 3

Source: Enderlin 2010. Slide 2 from “UNFCCC: JISC Roundtable Consultations” Presentation by Martin Enderlin, Chair, Project Developer Forum (and Director, Government & Regulatory Affairs at EcoSecurities, one of the largest carbon offset

project developers in the world), to the UNFCCC Technical Workshop, Bonn, 14th June 2010.

The etymology of materiality is given in the slide above as coming from the auditing industry: it is not something that has been invented within the carbon market, or with carbon offsetting in particular in mind. A staff member at The Gold Standard offered a more succinct definition of the term during a meeting, saying it meant “when do we really care about a rule, or not. When can we say it [the rules] won't really have an impact overall so we can ignore it.”

In early 2010, materiality (i.e. the acceptance of less quantification) was already being discussed but not formally implemented by staff at The Gold Standard (The Gold Standard Foundation 2010a). During 2010 the CDM-EB opened a consultation on the issue, and it was also discussed by The Gold Standard TAC. By the end of 2011 the UNFCCC had formalised a response suggesting that materiality should be formally recognised in the workings of the CDM, rather than assuming that measurement and quantification were unquestionably good in all circumstances. They gave the following precisely quantified boundaries as suggestions for where quantities should no longer be deemed as useful or necessary for compliance offsetting projects:

- (a) 0.5 per cent of the emission reductions or removals for project activities achieving a total emission reduction or removal of equal to or more than 500,000 tonnes of carbon dioxide equivalent per year;*
- (b) 1 per cent of the emission reductions or removals for project activities achieving a total emission reduction or removal between 300,000 and 500,000 tonnes of carbon dioxide equivalent per year;*
- (c) 2 per cent of the emission reductions or removals for large-scale project activities achieving a total emission reduction or removal of 300,000 tonnes of carbon dioxide equivalent per year or less;*
- (d) 5 per cent of the emission reductions or removals for small-scale project activities other than project activities covered under paragraph 4(e) below;*
- (e) 10 per cent of the emission reductions or removals for the type of project activities that are referred to in decision 3/CMP.6, paragraph 38.*

(UNFCCC 2011c, p.12).

These rules were not yet instituted by the end of the fieldwork element of this research, but the conversations, debates, publications and documentation of the concept of materiality were well underway within the market. Within certain (still, ironically, minutely quantified) parameters, the value of quantification and measurement was

being explicitly reassessed. However, the adoption of this discourse did not herald an end to measurement in carbon offsetting. While internal criticisms argued against measurement for its own sake, the practices of carbon offsetting were still posited on the supposition that quantification and measurement in general were relevant and legitimate. Those involved in the discussions did not feel the need to start from an argument about whether any measurement is needed: it was taken for granted that it was. None were offering or asking for a way of doing offsetting, of assembling a commodity that we could know as carbon in any way other than through practices of measurement and quantification. Nevertheless, the debate over materiality was a sign that amongst at least some of those who worked in carbon offsetting, there was an identification of the independent and at some times antagonistic relationship between the activities of quantification and measurement and what they saw to be the wider purpose of assembling carbon offsets. Why these actors may be so cognitively legitimate will be discussed alongside auditing at the end of the next section.

5.5 Auditing and third parties

The final section of this chapter considers the practices of measurement and quantification in their social location, as daily practices that were carried out by combinations of people and machines, assembled into auditors and third parties. Auditing – what Michael Power called the “rituals of verification” (1996) – held an inherent, cognitive legitimacy in the practices of The Gold Standard, and was incorporated widely into offset market protocols.

5.5.1 Who measures?

By 2010/11, it had become true that project proponents were not – or more accurately, were not seen to be – fully qualified to undertake the basic work of being reliable and trustworthy in the production of carbon offsets. They were seen to need the assistance, oversight and approval of (various) third parties to assure their behaviour. As a consequence the quantification and measurement of humans and non-humans, hypotheticals and actuals is carried out by a large number of project proponents, project staff, external consultants working for a project, auditors and other third parties such as standards. All projects in the compliance market and a massive majority – over 98% – of voluntary carbon offsets that were bought or sold in 2011 received some sort of label

(Peters-Stanley et al. 2011, p.31). This means some third party – appointed by the UN for the compliance market, or selected by the project for the voluntary market – scrutinised and confirmed the activities of the project. In the production of a carbon offset, it was not only important that hundreds if not thousands of measurements and quantifications were undertaken, but that at least some were carried out or double checked by someone who worked for an organisation that was contracted and paid for by a project proponent, specifically because they did not work directly for the project proponent. It was this process that transformed project claims into credible knowledge about an offset project (Shapin 1995a).

This situation was visible across carbon offsetting in the voluntary market. The re-branding of VCS in 2011, the most commonly used standard in the voluntary market from the Voluntary Carbon Standard to become the Verified Carbon Standard was a signal of the broad appeal of this idea of external scrutiny. The decision to rebrand can be understood as a reflection of their hope of being incorporated into regional compliance markets where offset consumers were not voluntarily participating. Keeping the same acronym for the standard was a smart marketing move, but their choice of word is symptomatic of an assumption that the scrutiny of others double-checking is a good, legitimating factor, in and of itself. If it seems hard to argue against their choice, it is indicative of the cognitive legitimacy of the activity – perhaps we find it hard to imagine it any other way (c.f. Powers 1996; Shapin 1994). Independent oversight has come to seem unquestionably necessary; it held an intrinsic place in the practices of making the commodity of carbon.

5.5.2 Third (and more) parties

Standards require the use of further organisations to be involved in the process of making offsetting valid, verified and economically valuable. Most third party standards in carbon markets require independent (fourth party?) auditors to review at least some of the project documentation, and, depending on the standard, also to conduct site visits. This is also the case for projects in the compliance market, who must produce documentation and hire auditors (who themselves have been checked and approved by the UN, and are then known as DOE) to visit the site and produce further documentation, all of which is scrutinised by the UN's authority (CDM Executive

Board) before a project is allowed to sell any offsets. For The Gold Standard, they required independent audits, and only allowed auditors that the UN had approved, even for voluntary market projects. They also required projects to inform relevant local and international NGO of project proposals, and The Standard encouraged comments and feedback from NGOs on projects as part of the validation process (fifth parties?), although these were not obligatory for credits to be certified. Within The Standard, particularly complex cases could be looked at by multiple members of the technical team and RM, and finally the Technical Advisory Committee. For CDM projects applying for Gold Standard accreditation, their documentation was passed through a minimum of three organisations (auditor, Gold Standard staff and CDM-EB staff) before being fully accredited.

5.5.3 Hierarchies

The comments criticising the over-quantification of the market from Plan Vivo staff were mentioned above. In a similar vein, they did not put so much marketing emphasis on their auditing procedures – in contrast to The Gold Standard publicity material. However, it was still an indispensable requirement that there was an external audit of all projects to attain a Plan Vivo certification. An example from their procedures noted in the documentation on one project serves to highlight the hierarchies that were taken-for-granted between projects and auditors and the cognitive legitimacy of audits and third parties.

At the Plan Vivo accredited project Scolel Te the most obvious technologies used for monitoring were calculators, tables and report cards. Local project staff and then external auditors visit individual plots, count the trees and write this on a card. These are then compiled on a computer database to estimate the sequestration of greenhouse gases across the whole project site. Any variation in the results between the tree count of a local community technician (project staff), and the project count (by a higher ranking member of project staff) was resolved with reference to the organisational hierarchy. The numbers from the project count “are considered to be the correct count” (Rainforest Alliance 2008, p.5)³⁰ When the project was audited, if there were any differences in the auditor counts and project staff counts, the auditor's calculation

³⁰ Translation is author's own.

trumped. All of these people are using the same or very similar combinations of their eyes, mental arithmetic, calculators and cards, all have experience in looking for the trees in the wood, but some are deemed to be less capable (or have vested interests) in miscalculating. When an auditor presents data about a project, it is considered superior to the results of others. It is a simple example of how auditors have privileged access (whether justified with their expertise, independence or other reasons) to defining the true or correct reality of a project.

5.5.4 Bad (individual) auditors...

It was notable during the fieldwork that individual auditors and even auditing organisations in general were themselves the subject of doubts, criticisms and scepticism over their capacities. As described by Hatherly et al. referring to accountancy: “quantification displaces, rather than solves, modernity's problem with trust” (2005, p.4). Nevertheless, this did not bring the concept of auditing and third party scrutiny into question.

In undertaking audits for Plan Vivo or The Gold Standard it was common practice that the auditing documentation would name and include information on the individual auditors. The personal biographies often demonstrated how many auditing staff had worked in a range of different organisations within carbon offsetting (project developers, at the CDM-EB). The information included about auditors went beyond mentioning their academic and auditing experience. In one Gold Standard verification report selected at random, the following table was included as well as short bibliographies of each member with their academic qualifications and work experience.

Figure 5.9: Table of individual auditor qualifications

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
Martin Schröder	ATL	☐	☐	☐
Johann Thaler	GHG-A	☒	☒	☐
Cyprian Fusi	GHG-T	☒	☒	☒

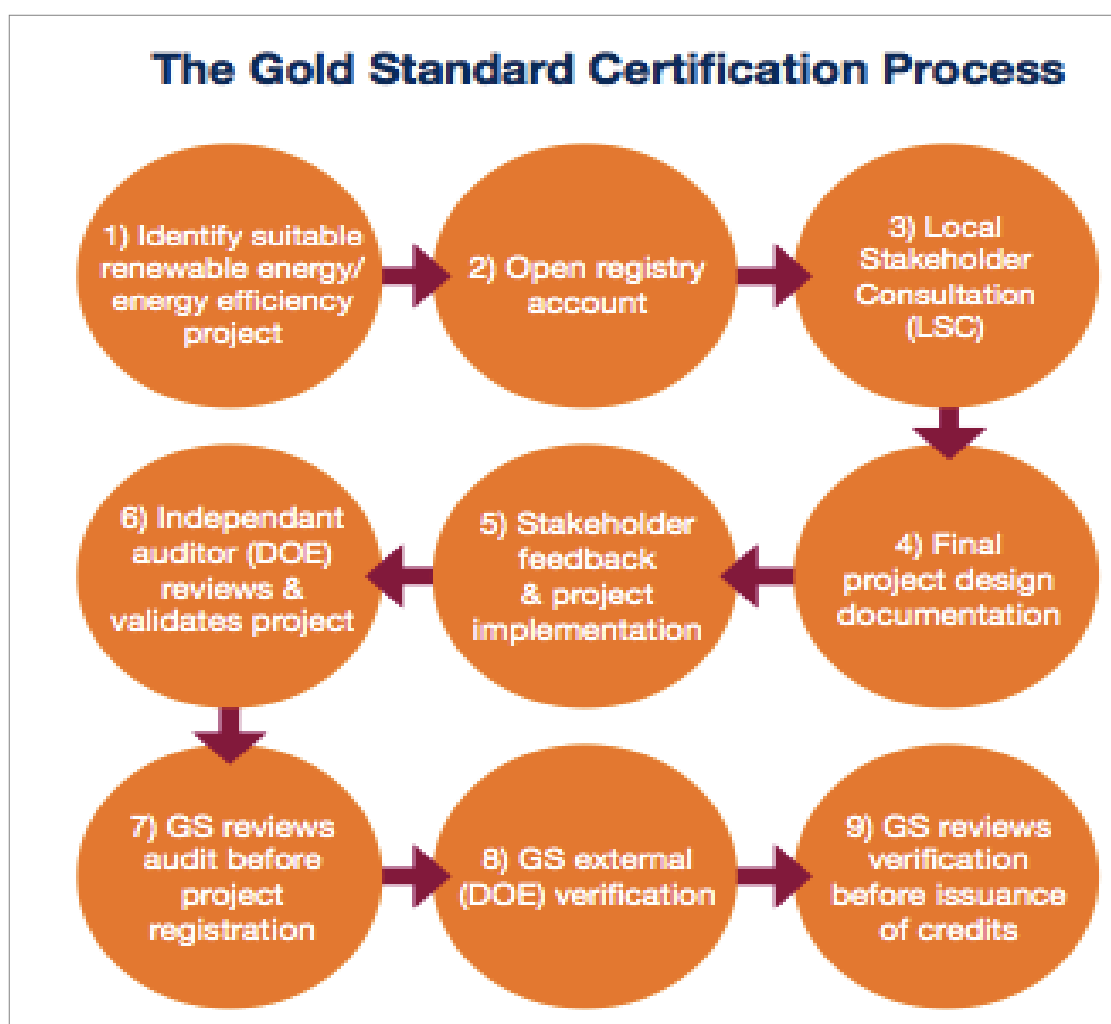
Source: Copy of table from TUV SUD 2009, pp.1–2. Emphasis in original. Gold Standard Validation Report: GS413 Improved Household Charcoal Stoves in Ghana.

Experience (non-specified) in the country or region of the project is considered relevant. Within the document from figure 5.9 it was also mentioned that one auditor was “an African” (TUV SUD 2009, p.1). Project audits held views that were supposed to represent an independent third party and were published publicly as coming from specific auditing companies, but the work inside was nevertheless identified as pertaining to specific individuals as a result of their unique experiences and perspectives.

Making auditing such a personal matter was seemingly in contrast with the purpose of institutionalising auditing processes: to remove individual (potentially biased or subjective) opinions and provide only correct information about a project. When there was fault, it was the individuals concerned that were the problem (who were named in any offending documentation). The auditing company as a whole could keep its authority more-or-less intact, and the process of third party auditing more broadly was not brought into disrepute by these localised – but widely spread – upsets. The uneven personalisation of auditing activities was part of a process of assigning individual blame in ways that upheld generalised norms about the importance and value of auditing. Auditors could be anonymous, so-called “modest witnesses” (Haraway 1997) until they made mistakes. At this point the collective knowledge produced by auditing companies broke down into the individual claims of auditors once again, and their fallibility as individuals could be used as the company and auditing industry defence (c.f. Shapin 1995a).

In the procedures of The Gold Standard and others, there were clear indications of a significant and consistent lack of confidence in the work of auditing companies, not just of particular teams or individuals. As noted by Barry when discussing regulatory and quality standards: “not only do the qualities of the object need to be qualified, so too does the quality of the work of qualification itself” (2006, p.247). The design of The Gold Standard process showed an implicit mistrust of the capabilities of the auditors – referred to as DOE – to audit projects effectively. There was meticulous double-checking of DOE calculations and reviews as part of The Gold Standard process (Steps 7 and 9 in figure 5.10). These only made sense if Steps 6 and 8, the work undertaken by the DOE, was thought to be insufficient alone; there would be no need for Gold Standard staff to check everything the DOE did if Standard staff felt assured that the DOE were doing their job correctly.

Figure 5.10: The Gold Standard Certification Process (marketing version)



Source: The Gold Standard Foundation 2011e, p.3.

What is implicit in their procedures was explicit in internal discussions at The Standard. Standard staff felt that auditors could be less scrupulous when auditing voluntary projects, even though The Standard rules are the same. They were therefore careful to double-check the work of DOE on voluntary projects in particular. When discussing the role and training of DOE during an internal meeting, it was commented:

We don't rely on them [DOE] apart from another pair of eyes. We still need them because we can't be seen as approving projects for budgetary constraints... We will never question a rejection. They provide an independent viewpoint... we do need DOE just for this reason... but then there's another question about how much we can rely on DOE fully, and I think we cannot... [their work] it's not good enough.

(Technical staff, Harmonisation Working Group, November 2011).

Again, there is a hierarchy of measurers: the project needs the oversight of an auditor, both in documentation and through on-site visits. However, the reports produced by these auditors are themselves not trustworthy until Standard staff have also examined their work and confirmed their findings. This hierarchy was by no means unique to The Standard. The UN procedures also require auditors to be audited before they are allowed to audit any project, then their reports are subject to scrutiny by the UN body responsible. Many of the largest auditors who had previously been accepted for UN verifications were temporarily suspended for malpractice on specific cases over the period 2008-2011. WWF paid for a report specifically on the issue of auditing in carbon offset markets to examine these suspension cases, with the damning conclusion:

*Lack of **competence of the personnel** in validation and verification teams; Lack of evidence that the DOE actually undertook an **independent technical review** of the case; and The DOEs did not follow **internal review or audit procedures** to ensure sufficient quality.*

(Schneider & Mohr 2010, p.5 emphasis in original).

For some, this situation is scandalous (Murray 2009), but for others it has become integrated into business-as-usual by market actors (Krukowska & Lomax 2009). Staff at The Standard, discussing how the sanctions and suspensions functioned in 2011, commented that it reflected a local DOE team rather than necessarily shaming the whole auditing company. As a result, it was not seen to be a major problem for the company in terms of reputation (or auditing as a process) because it had become accepted (by The Standard at least) that “it will happen to everyone.” The fact that auditors were, on occasion, not up to standard was part of daily life.

5.5.5 ...but not bad auditing

All of which might lead to the conclusion that because auditors, their tools, individual staff and organisations were not a different species of carbon expert and viewed with suspicion by those even within the market, the concept of third party auditing would be tarnished, or at least not hold an unquestioned, taken-for-granted legitimacy. But this was not found to be the case. The Standard and others still privileged the activities of auditing within the processes of creating a carbon offset, even while they criticised the

auditors. Figure 5.10 is indicative of the promotion and veneration of independent measurement by The Standard and their presumed audience. Steps 6-9 of the process in the diagram highlight the third party scrutiny on the activities of a project. This space in the brochure could have been used for something else; explanations of what projects actually do, or a more detailed description of how local stakeholders participate in the creation of an offset, for example. Stakeholder-related stages could have been explained in several steps (as is the case in Plan Vivo diagrams, see figure 4.9), leaving “auditing by DOE and GS staff” as one combined final stage in the process. Alternatively, third party auditing might not have even been thought to merit mentioning at all, instead the quality assurance practices of The Standard alone might have been thought to be more persuasive. But it was the third parties from the carbon market that were deemed the most worthy of this space, and of four separate steps to describe in more detail who is involved in the auditing process and what documentation they are scrutinising.

Third party scrutiny was an institutionalised, routinised part of carbon offsetting, taken-for-granted at The Standard and by other organisations involved in offsetting. The UN rules instigated scrutiny of documentation by auditors and their own Executive Body for each project in their rules. By 2010/11, certification had become the norm in the voluntary market as well. This entailed the involvement of further (fourth, fifth, perhaps even sixth) parties in the processes of measurement and quantification to transform particular, located practices into something that could be abstracted and understood as part of a global process of market trading and reducing GHG emissions.

5.5.6 Why were auditing, measurement and quantification valued?

As found in other industries (Power 1996; Busch 2011) there was a separation between the legitimacy of the processes of auditing and quantification, and faith in the organisations, technologies and people who undertook them. The legitimacy of third party verification was more than just the sum of the institutional, human and mechanical actors that did the work, and the metrics, tables and quantities that were produced, even though these were the constituents of the daily practice of auditing. There was faith in the concept of auditing and the idea that more measurement, undertaken by more measurers, was inherently better, that withstood the knocks that individual auditing firms (or, as in the case of Gold Standard internal discussions, all

firms together) received.

Similarly, specific instances of measurement and quantification could be discounted as unnecessary and unhelpful in the production of offsets in the channels of materiality discussions. These problems could be understood not just as isolated incidents, they were subject to criticism as a carbon orthodoxy. But measurement and quantification in general were not put aside, even by those who offered such critiques or chose, such as Plan Vivo, not to emphasise this aspect of their work in their marketing in the way that The Gold Standard did. Without measurement and quantification, calculations and imaginings, additionality could not be invoked. These actors were the taken-for-granted ways in which which uncountable, invisible, non-existent happenings become formulated and assembled into comparable, fungible activities that could garner economic value. Together, they brought offsetting meaning and value as an activity and commodity.

5.6 Conclusion

This chapter has presented a selection of detailed examples to demonstrate some of the activities and concepts that were found to be taken-for-granted by those involved in the production of carbon offsets: whether as a criticism or a truism, a carbon orthodoxy. I have tried to identify features that were intrinsic to the work of a voluntary standard, and draw out the nature of their importance in the production of offsetting as a taken-for-granted assemblage within carbon markets – a recognised type of carbon. These features have been described in detail in order to make apparent their internal instabilities and the effort required in assembling offsetting. This emphasises that although ANT analyses can seek and find stabilised networks, such assemblages can be simultaneously precarious and straining, a constant process of maintained unity rather than a completed construction.

Methodologies deserved their own biographies as they moved independently from their authors, particular project sites or standards. Their life stories were retold because they could change over time, interacting with project developer experiences and standard technical requirements. Their codifications still left spaces where interpretations would have to be made; the finitist limits (Hatherly et al. 2005) to the “amorphous reality” that

meths try to incorporate, claim and frame (Ascuí & Lovell 2011, p.982; Callon 1998). There were statistical tools that may or may not have captured the information and meaning that Standard staff were looking for, levels of detail that could not pin down every potential variable or definition. Additionality had to be made salient through measurement and quantifications, codified in meths. The possibility of extending the imagination of offsetting to include suppressed demand was only possible because it was taken-for-granted that normal future demand could be satisfactorily (for those involved in carbon markets) calculated. In developments within the market from 2010 onwards, additionality came in business-as-usual or utopian versions of the future, adding further complexity when desires and needs, probable or preferred non-futures had to co-exist within documentation.

The second part of this chapter went on to look at three concepts, measurement, quantification and auditing, identified as central to the production of technological zones (Barry 2006). They were subject to internal critiques in the form of comments from market participants and observers about market practices in general and the work of individual people and auditing firms, and formalised and abstracted into debates about materiality. Materiality discussions were aimed at putting some limits on the vast quantities of data that was produced by the quantification activities of the market, but the critique of materiality was not a challenge to the inherent place, the cognitive legitimacy of measuring and quantifying for offsetting. A lack of trust in the measuring capacities of different organisations and individuals involved in producing an offset meant that long, hierarchical chains of third, fourth, fifth and even sixth parties could be involved in the scrutiny, documentation and accreditation of offset projects. This shifted but did not resolve the need for trust (Shapin 1995a; Hatherly et al. 2005). Even at Plan Vivo, where the carbon orthodoxy was challenged, these activities (through methodologies, measurements, the use of third parties) were still included in their processes. This goes some way in demonstrating that these activities, these actors (themselves assemblages of people, technologies and practices) were taken-for-granted as part of offsetting.

The next chapter moves on from concepts, texts and activities which have been presented as cognitively legitimate to offsetting (and, by extension, to carbon in its

offsetting form) to discuss another part of the work of The Gold Standard and Plan Vivo: sustainable development (SD). This actor-assemblage held a more complex, fractal relationship to the assemblage of offsetting, and a less certain place in the definition of carbon, as the data discussed in Chapter 6 will demonstrate.

Chapter 6: Sustainable development in carbon offset markets

6.1 Introduction

As described in Chapter 4, sustainable development (SD) was not precisely defined by The Gold Standard in their rules, but it was one of the twin aims of The Standard. Its central location in the mandate of The Standard made SD intrinsic to the idea of Gold Standard offsetting. However, in contrast to the subjects of Chapter 5, Standard staff also described their focus on SD as something that set their practices apart from other ways of doing offsetting. This chapter describes how SD was assembled at The Gold Standard and compares this to elsewhere in carbon offset markets, to explore some of the variations within the black boxes of offsetting and carbon in their socio-technical detail.

The first half of this chapter explores how The Gold Standard assembled SD through their rules and practices. This leads to a discussion of how The Gold Standard made SD relevant to the assemblage of offsetting. In theoretical terms: what type of legitimacy did they present for SD in relation to the assemblage of offsetting more broadly? The response is one of detailed measurement and quantification, as with other aspects of their work as a technological zone (Barry 2006). The second half of the chapter then compares the epistemologically determined, morally legitimate assemblage of SD and offsetting that was found at The Gold Standard to alternative understandings of the role of SD in offsetting. A variable picture of SD in the assemblage of offsetting emerges, which can be described using Suchman's typology of legitimacy.

6.2 Sustainable development and The Gold Standard

As described in Chapter 4, The Gold Standard put SD at the core of their mandate to reflect the twin aims of the CDM in their own priorities. Unlike the assemblages

presented in the previous Chapter, the focus on SD is something that staff felt marked Gold Standard apart from other voluntary offset standards. Their marketing claimed they were “the only standard to measure, monitor and verify sustainable development criteria in all projects throughout the crediting lifetime of the project” (The Gold Standard Foundation 2011a). In a technical meeting in 2011, a staff member clarified how they saw Gold Standard priorities embodied in the documentation required by The Standard: “Meths are about carbon accounting. In The Gold Standard, you have meths and then SD [the LSC Report] which is about monitoring, sustainable development, quality... We are a sustainable development standard.” In discussions over a possible collaborative project with external organisations, the management team were only happy to continue negotiations once the partners “accepted it [the project] would need to have strong SD perspective for it to feel like GS [Gold Standard].” SD was central to The Standard, but understood as something that set them apart in their approach to offsetting.

However, the rules of the standard explicitly avoided a precise, universal definition of SD. In Version 2 of The Standard there is a reference to the Brundtland Report's broad definition of SD as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (The Gold Standard Foundation 2008, p.26) but no further codification. In internal meetings, staff emphasised the flexibility in The Standard's use of the concept:

SD is defined on local level, it's not our job to define it... It will depend on communities, [the] local level... we can say environment, social and economic benefits. It's not a definition but it's a start.

In the quote above, defining SD is described as outside the remit of The Standard (*it's not our job*). In an interview with an external agency in 2011, one staff member alluded to the reasoning behind the lack of definition: “At The Gold Standard we believe that bottom-up is very important... input from local stakeholders, people impacted by the project on a project level, not just the national authority [as with the CDM].” The rules of the CDM were a clear point of reference for the decision not to provide a precise definition of SD. Under the CDM, each host country defined SD, it is not defined in UN texts. As such, the idea of prioritising the concept without defining it is another

example of where The Gold Standard had drawn directly from the CDM. However, where the CDM devolves definition-making to host governments and requires a codified definition by which projects can be assessed, The Standard did not refer to these government definitions either. Staff positioned the appropriate location for defining SD as at the “local level,” elaborated as the “project level” with “local stakeholders.”

Critical geography literature identifies the need to pay attention to the “epistemological ordering frame” that discourses of local and other scales may incorporate and embed (Marston et al. 2005: 420), and there is a large body of anthropological work that identifies the complexities and potential contradictions of incorporating local knowledge and views into development or science (for example Li 2007; Nygren 1999; Philip 2001) not to mention the translation or treachery implicated when identifying lay voices alongside expert opinions (c.f. Wynne 1996). In this case, from the point of view of The Standard, project level and local level could imply different sites of definition-making. Many project developers in The Gold Standard pipeline were multinational companies, with decision-making (and document writing) potentially happening far away from project sites, and in multiple locations. This could be on different continents, or within the same country but in offices in urban areas rather than rural regions where projects were most typically found. Individuals within organisations that were managing multiple projects around the world may not have had lived experience of the ecosystem of the specific river bed or the power structures of the nearest village. But on the other hand, they may have been more aware of the international agreements, research and state of the art in the field of water basin protection or human rights than a (geographically) local organisation or individual. This version of local is thus not scalar, as an opposite to global, but instead fits better into a description of a “relational view of space” (Murdoch 1998, p.359) where specific locations are viewed as “articulated moments in networks of social relations and understandings” (Massey, 1991 quoted in Murdoch 1998, p.359). The “communities” invoked by The Standard staff member referred to people living near the project site, and this group is assembled and given a role in the production of Gold Standard credits (see below). But a second, intersecting community participates in creating definitions of SD for projects; the community of carbon market offset developers. Their geographical location is not the same as the

distribution of project sites, but, as will be shown below, they orchestrate definition-making, monitoring and producing SD within the documentation and practices of offset projects to allow The Standard to undertake the necessary monitoring and evaluation of their work. Each set of project documentation could arrive at The Standard office (travelling in time and space) with its own definition for SD, local to the “network topology” - assemblage - of that carbon offset project (Law & Mol 2001).

6.2.1 Harmonisation of non-definitions

Allowing for differences in local definitions of SD was recognised as making life more complicated at times for The Standard, but also for others who participated in the production of certified carbon offsets. This was seen as a particular as an issue for auditors (see section 5.5):

GS Staff 1: DOE aren't comfortable with flexibility [re SD measures not being standardised between projects]

GS Staff 2: No they are not, because that's not their job, they want checklists.

This was not only a consequence of Gold Standard rules, but also the training and expertise of auditors. As a TAC member commented:

I never saw a DOE [auditor] that's validating the passport [Gold Standard documentation for accreditation]... with social science people to evaluate the project. Everybody now has finance experts to address additionality, but nobody has this SD part.

(Interview 6, 2011).

As noted in the previous chapter, what was taken-for-granted as necessary for auditors to know and do within carbon offsetting was most strongly related to the calculation of measurement and quantification of methodologies that circumscribed the GHG emissions reductions in technically detailed ways. The training and selection of auditors was designed to reflect this orthodoxy.

But it was not only (engineer) auditors that struggled with SD assessments. With up to ten different reviewers of projects, five different versions of The Standard rules (each with guidance and annexes, clarifications and updates), and large numbers of diverse project types, internal harmonisation was also a complex matter within The Standard.

As some project developers undertook many projects, the developers could notice (and complain) if there was a lack of consistency between project reviews. Harmonisation between reviewers thus required further limits to the de facto definition of SD through internal guidelines on what to accept in project documentation. For example, in 2010 the issues of to what extent job losses in other industries had to be considered and were possible to calculate, whether compensation was acceptable as mitigation for any negative SD impact, and what baselines to apply for SD (i.e. should a project be comparing itself to a scenario without any project, or with an alternative version of the project that could have less good SD impacts) were all covered by the internal Harmonisation Working Group. As a staff member said during one of the meetings: “We need to harmonise to make sure people are in line with what we want from these [SD] indicators.”

This lack of definition and complexity in implementation poses the question of how something (SD) could be standardised if it was not defined? Furthermore, how could this non-standardisation be coordinated and certified by The Gold Standard? The first answer is that the scope of The Standard was a form of definition of SD. The second, Gold Standard documentation gave de facto limits, even it did not formally define SD. This can be analytically identified as inscription (Akrich 1992). The third is that where activities and implicit definitions differed between projects, the ways of knowing required by The Standard were the same. Measurement, quantification and auditing were obligatory for SD features as well as GHG emissions calculations on all projects. The definition and practices of SD had to be amenable to this epistemological stance, the taken-for-granted methods of assembling carbon offsets. SD in Gold Standard activities was a technical matter, requiring measurement, calculation and quantification, monitored by a technical team and overseen by technical advisors (TAC). It was through these practices that different projects, with different activities and different understandings of SD came to share a common title as producers of Gold Standard offset credits. In this way, SD was assembled by The Gold Standard as a part of carbon offsetting.

6.2.2 Scope boundaries

Renewable energy and end-use energy efficiency were selected as The Gold Standard

scope because of considerations for SD, not just GHG emissions reductions (see Chapter 4). In the daily tasks of specifying rules to manage the boundaries around the scope of The Standard, the overall aim of SD had to be consciously re-interpreted and worked into technical details and practices. Scope widening was on The Standard agenda during 2010-11. Secretariat staff had to present evidence to the Foundation Board that the nature of composting projects could match up with the SD mandate of The Gold Standard. On a presentation slide for the Board, technical staff explained:

Composting project activities contribute to improved air, water and soil quality... improve the livelihood of the poor... Often, skilled labour is required... thus it is an opportunity to improve the skills of local people... potentially empower communities... can provide ample employment opportunities and sources of income...

There could be individual differences in projects, but generically certain project types fitted into a Gold Standard assemblage of SD.

Efforts at alignment between the overarching goal of SD and the technical detail of Standard boundaries and rules was observable in discussions over the minutiae of rule changes on particular methodologies, not only in broader shifts in scope. Under Standard rules, electricity or heat biomass projects could use 5% non-renewable fuels (that is, not biomass) “in order to avoid disruption of the operation due to temporary feedstock shortage, maintenance, etc.” (The Gold Standard Foundation 2008 Annex C, p.3). Developers had complained that inputs of 95% biomass were sometimes unfairly difficult to achieve and suggested lowering the limit. The original purpose of the rule, reasoning behind the 95% figure and implications of altering or maintaining the rule were considered first by The Standard technical team, and then at a TAC meeting. These discussions ensured that the codified output of The Standard matched with its overarching aims. Some of the more casual language used in internal meetings reflected the sometimes easy-to-forget fact that internal discussions among experts are conversations between colleagues, the verbalisation of their thought processes in the same ways that normal conversations take place. Casual language (*the guy... I guess... Personally... pretty arbitrary*) was part of the process of problem-solving in action, vital in the development of the lines of argument that allowed the daily work of The Standard to most accurately reflect the underlying principles of the organisation in its

mission to promote SD.

Speaker 1: What happens if you try it [converting to biomass] in existing plant? [You] might start off aiming for 100% but might find that there is a threshold of 80% because it burns better... So I'm wondering, for the guy who only makes it to 85% [sic], is he not eligible [for carbon credits]?

...

Speaker 2: [No.] The idea is that unless you have the aim to be 100% [biomass fuel], then you can't be [certified]. But you can have mistakes or something [and only make it to 95%], then it's ok...

Speaker 1: Is there some fundamental reason why we are going for 100% and not some less?

...

Speaker 2: Historically [it] was I guess... for a full push to renewables... [but] Personally I don't see a reason for not allowing for partial shifts [to biomass, i.e. less than 95-100%]

...

Speaker 3: I see what we're trying to do, [to] pull things to transitions, but the numbers are still pretty arbitrary.

...

Speaker 4: but 90 or 95% seems too high if you've got poor supply chains...

Encouraging 100% renewable production had been the intention behind the original rule on biomass use as part of the aim for SD. In the practice of projects, it seemed unfair or illogical to exclude projects that needed time to achieve 95-100% biomass, or for those who were using some but not all biomass for practical (unreliable sourcing) or economic reasons (*because it burns better*). The rationale to change the rule was justified as assisting transitions towards renewable energy. The creation or alteration of new rules had to include discussions and reformulations of the intentions of The Standard as a way of working through and explaining the apparently arbitrary nature of requirements, and discerning whether or not it was appropriate to change them.³¹ What The Standard hoped to achieve in terms of SD in offsetting had to be translated into technical details on an ongoing basis as part of the daily workings of the organisation.

6.2.3 Inscription in the Local Stakeholder Consultation Report

The documentation required by The Gold Standard denoted sets of principles, indicators and actions related to SD in ways that “inscribed” the activities of project

³¹ Revised Annex C - 22 November 2011: “Biomass project activities: the 5% cap on the share of non-renewable fuel in the electricity or heat annual delivery is now replaced by the requirement of a renewable fuel share of 50% after the first 3 years of operation for retrofit projects, and of 80% from the outset for greenfield projects.” (Gold Standard website 2011).

developers by setting boundaries on what SD would mean within Gold Standard procedures (Akrich 1992). The rules had to be interpreted by project developers to make meanings and requirements match up with their projects and experiences. These then had to be filtered into quantities that could represent the SD qualities of a project, and include them as part of the “zone of qualification” of The Gold Standard (Barry 2006). The Local Stakeholder Consultation (LSC) Report was the document that all projects had to produce to summarise their SD credentials as part of their Gold Standard application. This is where SD was codified as a technical matter for The Standard, with the details of measurements and quantifications worked out project-by-project.

The first section in the SD Assessment section of the LSC Report was the Do No Harm Assessment. One staff member explained the activity to new staff as being “like an initial brainstorming for the project developer to think about sustainable development.” Project proponents must fill in a table (figure 6.1) to identify the relevance and risk of each principle (figure 6.2) to their project, ranking each issue as low, medium or high risk. The ranking of each principle then allows a different treatment between those issues for a project that can be set aside (low/no risk), or those that must have a mitigation measure assigned (medium/high).

Figure 6.1: Do No Harm Assessment Safeguarding Principles Table (empty template)

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low, medium, high)	Mitigation measure
1			

Source: Copy of table from The Gold Standard Foundation 2009a, p.12. “The Gold Standard LSC Report Template Version 2.1.”

Figure 6.2: Do No Harm Assessment Safeguarding Principles Questions

Safeguarding Principles	
Human Rights	
1	The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.
2	The project does not involve and is not complicit in involuntary resettlement.
3	The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage.
Labour Standards	
4	The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights.
5	The project does not involve and is not complicit in any form of forced or compulsory labour.
6	The project does not involve and is not complicit in any form of child labour.
7	The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.
8	The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.
Environmental Protection	
9	The project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle. This principle can be defined as: “When an activity raises threats of harm to human health or the environment, precautionary measures should be taken if some cause and effect relationships are not fully established scientifically.”
10	The project does not involve and is not complicit in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value or (d) recognised as protected by traditional local communities.
Anti-Corruption	
11	The project does not involve and is not complicit in corruption.

Source: Copy of table from The Gold Standard Foundation 2009d, p.38. Emphasis in original. See Annex 4 for the full list of supplementary questions.

An annex to The Standard Requirements provides a four-page list of questions relating to the Do No Harm Assessment principles (see Annex 4), suggesting a great deal of detail might be necessary to complete this part of The Standard documentation. However, documentation from The Standard designed to help developers fill in the Do No Harm Assessment showed an example of how to manage a high risk issue. Risks to labour standards from gas leaks were mitigated straightforwardly with “Organise training and only authorise trained personnel on site” (The Gold Standard Foundation 2009d, p.40). The measured, quantified, more detailed assessment of SD, checked in

granular detail, came through the SD matrix described below.

6.2.4 Local Stakeholder Consultations

As described in Chapter 4, a meeting with local stakeholders before the start of a project was obligatory for (almost) all projects to achieve Gold Standard accreditation.³² This had to be a publicised physical meeting, with individuals and organisations with a potential professional interest in the project (e.g. local NGOs, local state representatives) and the local population. Within the evidence required by The Standard, staff had to see copies of emails and publicity that had been sent to publicise the meeting, the meeting agenda, a record of those present specifying their gender, employment and name, texts in non-technical and appropriate local language(s) explaining the project and a copy of evaluations (about the project and the meeting) that attendees had filled in as part of the meeting procedures (copies of the originals, and with translations into English). The guidelines for the meeting required an opportunity for the public to ask questions and suggest improvements or alterations to the project and for attendees to fill in Gold Standard matrices on the SD implications of the proposed project.

Echoing Dorothy E. Smith's description of rule implementation: “the reader’s [project developer's] work is to find what could be done that is recognisable as an instance of its [The Gold Standard matrix] categories” (Smith 2001, p.183). For a simple example, The Standard specified that LSC meetings had to be advertised. Whether this meant through word of mouth, newspaper adverts, posters or radio announcements, and whether meetings are separated by gender, provide food, invite local dignitaries, take place in a coffee shop, municipal building or someone's house was up to the developer. In different locations some of these possible interpretations would be inappropriate, seen as bribes or cross strong social boundaries between public and private spaces, formal and informal communication. Project proponents had the freedom *and* obligation to interpret the requirements of the generically designed format for stakeholder engagement that was transmitted through the texts of The Standard in ways that would accord with local expectations and possibilities.

³² Retroactive projects are the exception, although they must also conduct a Do No Harm Assessment, an SD matrix with monitoring details and demonstrate that they have solicited and responded to stakeholder comments.

Even the identification of local could be a matter of interpretation. During my fieldwork, a project contacted The Standard to say that they wanted accreditation, but they could not hold a meeting because their project site was so isolated that there were no locals. From the RM's (regional manager) perspective (who knew the country well, although not the specific region) it seemed unlikely that there would be absolutely no inhabitants that would potentially be affected by a new project activity, although the area was indeed remote. As the rules of The Standard state that there must be a meeting, the RM suggested to the project that they widen their understanding of local, and made sure they were in contact with even the few people who lived in the region around the proposed site. Even though in all likelihood it would have been incredibly difficult for local people to stop a project going ahead, their absence was enough for a project application to be delayed for Gold Standard accreditation until some could be assembled.

A section of the LSC Report required developers to explain how they responded to comments and took on board suggestions arising from their meeting, and how they planned to engage with stakeholders in the future. These rules from The Standard required stakeholders that were willing and able to give comments, ask questions and be engaged with. In the publicly available LSC Reports from Gold Standard projects around the world, it is clear that there were differences in accepted level of engagement at different project sites. Experience had taught review staff that with sub-Saharan African projects, they could expect high attendance (20-80 people), lots of comments and questions to be reported in project documentation. Deviation from this African norm would be regarded with suspicion and resulted in requests for clarification and the re-submission of documents. However, Turkish projects documenting meetings with 12-15 people, few comments and perhaps no questions were accepted by Standard reviewers, as this was understood to be normal there, with Indian projects somewhere in between. Feedback to projects might ask them to try to encourage more participation if they undertook future projects, for example by holding meetings in more than one village near a site, but the differences in levels of engagement from local communities in different locations was accepted as something that project developers could not control, and The Standard should not expect them to. It was one of the ways in which

the rules of The Standard were flexible enough to encompass differences in local expectations, but maintain a single epistemological stance on the measurement and monitoring of SD.

6.2.5 The Sustainable Development matrix

A key section of the LSC Report and in the formation of SD within the rules and procedures of The Gold Standard was the SD matrix. This table categorised SD under three headings (social, environmental and economic) and 12 further sub-headings. This is different to the categories of the Do No Harm Assessment, and more closely reflects the commonly found triumvirate definitions of SD. As will be shown, the SD matrix narrowed and quantified SD into scores for each project, but still allowed for significant variation in the interpretation of SD at each project.

Within the space left for interpretation by each project on each sub-heading, projects applying for The Gold Standard accreditation could represent a variety of versions of SD. These sub-headings match up to some of the academic classifications and debates over the term (Sneddon et al. 2006). The embodiment of weak SD can be found in the large scale wind farms (for example in China), run by profit making, non-Chinese project developers that offer some local employment, switching from fossil fuel to renewable energy at a national scale, and promise to minimise the disruption caused by construction for local people (of which, often, there are few) as sufficient to garner an SD approval from The Standard. In contrast, strong SD where economic priorities are on a par or secondary to social and environmental benefits included projects by not-for-profit developers distributing solar lighting for Malawian homes and international organisations partnering with private finance to provide solar cookers and lighting in Kenyan refugee camps. All of these were possible under the flexible definition of SD accepted by The Gold Standard, so long as the claims that were made were measurable, monitored and recorded in documentation that could be verified by Standard staff as well as on project sites by auditors.

Figure 6.3: The Gold Standard sustainable development matrix (empty template)

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Gold Standard indicators of sustainable development	If relevant, copy mitigation measure from 'Do No Harm' assessment, and include mitigation measure used to neutralise a score of '-'	Check www.undp.org/mdg and www.mdgmonitor.org Describe how your indicator is related to local MDG goals	Defined by project developer	<u>Negative impact:</u> score '-' in case negative impact is not fully mitigated, score '0' in case impact is planned to be fully mitigated <u>No change in impact:</u> score '0' <u>Positive impact:</u> score '+'
Air quality				
Water quality and quantity				
Soil condition				
Other pollutants				
Biodiversity				
Quality of employment				
Livelihood of the poor				
Access to affordable and clean energy services				
Human and institutional capacity				
Quantitative employment and income generation				
Balance of payments and investment				
Technology transfer and technological self-reliance				

Source: The Gold Standard Foundation 2009d Annex I.

For each SD indicator in the SD matrix, the project developer had to present a parameter for measurement. The Standard rules say these could be qualitative or quantitative, but they had to be measurable and verifiable by auditors.

Figure 6.4: Table of required monitoring information for SD matrix indicators (empty template)

No	
Indicator	
Mitigation measure	
Chosen parameter	
Current situation of chosen parameter	
Estimation of baseline situation of parameter	
Future project target for parameter	
Way of monitoring	How
	When
	By who

Source: Copy of table from The Gold Standard Foundation 2009d Annex I, p.7.

One project, working under Version 1 of The Standard before there was a table format (figure 6.4), shows an example of the mix of data types (numbers of individuals completing a training, numbers who are deemed to *use their skills*, and a *sense of job fulfilment*) and difficulties that measurement (keeping track of trainees, defining *use their skills*, *job fulfilment* and *lucrative*) could entail on a solar light provider project, monitored under the Employment heading of the SD matrix:

Figure 6.5: Extract from Gold Standard monitoring report for SolarAid Malawi

Employment (including job quality, fulfilment of labour standards)

Since February 2008, 227 people have been trained in micro-solar assembly, business management, sales and marketing. In follow up 157 of these say they have continued to use their skills, mainly for micro-solar business (it is worth noting that it has not been possible to contact some trainees).

Feedback shows that entrepreneurs feel a sense of job fulfilment and that the micro-solar business is lucrative.

Source: SolarAid 2008, p.9. Gold Standard monitoring report for GS393 SolarAid in Malawi.

The Standard guidance acknowledged the difficulties in selecting proxies and

attempting to measure SD, and suggested: “Base your choice [of SD parameters] on pragmatism. Are you able to gather reliable qualitative or quantitative data on this parameter at reasonable costs given the scale of the project?” (The Gold Standard Foundation 2009d, p.42).

While there was significant diversity of definitions of SD and project types within the Gold Standard pipeline, it was also the case that many projects came up with very similar SD matrices in their applications to The Gold Standard. This was particularly the case with the most common project types (hydro-electricity and wind farms) a large proportion of which were in two countries (Turkey and China). A high number of projects were run by a small number of multinational project developers³³, and there were highly similar projects run by single developers.³⁴ Variation in SD at different project sites was possible, and existed within The Gold Standard pipeline, but homogeneity from the same activities following the same guidance potentially with documentation even being filled in by the same project staff was also a feature.

6.2.6 A measurable contribution

Within this inscribed variation, the terms of The Gold Standard required a common attribute of SD across all projects: it had to be something measurable. This decision – that SD must be measured – was taken as a direct response the CDM rules where SD was included but without monitoring or verification (see sections 4.2 and 4.3).

These NGOs felt that it would be important to have in place from the outset a rigorous methodology that would:.. make a measurable contribution to sustainable development

(The Gold Standard Foundation 2011f emphasis added).

The Standard stance took for granted that SD was something that *could* be measured. It meant that when SD was referred to in Gold Standard texts, the SD that they were looking for and promoting, whether or not it was defined, was something that *was* measurable. This was emphasised across internal and external documentation at The Standard. The SD matrix described above was a quantificatory device to assist in the

³³ By February 2013, South Pole had 54 projects in The Gold Standard registry, Tricorona had 24.

³⁴ For example, Carbon Resource Ltd has 9 large wind farm projects in China at various stages in The Gold Standard pipeline with a total estimated credit output of over 1.3 million CER.

transformation of activities on project sites into actions that could be defined as SD, and identified in measurable ways. Project proponents had score their project on each indicator (1/0/-1) (see final column in figure 6.3). For Gold Standard accreditation, the scores must average as positive for at least two of the three categories (social, environmental and economic) and the other can be no worse than neutral (although more than one individual indicator could be). In a powerpoint on how to review the SD matrix in LSC reports, new staff were taught “Unless there is a measurable benefit, the PP [project proponent] should score an [SD] indicator zero not positive” (emphasis added). Un-measurable benefits could be welcomed by The Standard, but to achieve certification projects had to be doing things that were quantifiable and translatable in the form of measurements. SD as a measurable assemblage was more easily transmitted to Standard staff when they read project documents and verified by auditors when they visited project sites. Within the matrix a quantified, commensurable value is produced to designate and justify future decisions on the certification of a project.

It is easy here to identify the SD matrix as one of the “textual technologies [that] are essential to the objectification both of organisation and knowledge” (Smith 1992, p.93). In one table, the SD matrix divides nebulous, difficult concepts and experiences (gender, corruption, fulfilment, livelihoods) into boxes, to be sorted through and processed. It presents a thinner, neater, measurable version of SD at project sites. The indicators and measures presented obligations on future activities, with some scores causing the initiation of future monitoring and documentation activities.³⁵ The removal of the particular is not just a loss, but also the creation of meaning in this specific context. Before becoming a categorised, measurable object, the information presented by projects relating to working conditions or local biodiversity had few ways of entering technocratic carbon discussions. Projects must do good, but they must also be measured to do good. The transformation of SD (without definition) into metrics is also an entrance point: a latch onto the assemblage of offsetting. It is the action-at-a-distance (Latour 1987) through standards that allow the localities of projects, standard offices and buyers to be connected together in the market for carbon offsetting.

³⁵

Monitoring by auditors and in future desk reviews was only mandatory for any indicator where the project was expected to alter (positively or negatively) the baseline scenario (i.e. no project), and for negative effects that were going to be mitigated. Data from indicators that were expected to remain the same did not need to be presented to The Standard or auditors for review as part of Gold Standard rules.

As was seen in Chapter 5, a taken-for-granted part of offsetting was the idea that measurements and quantifications must pass through multiple agencies. This was also the case for SD, with the same rounds of documentation, audits and double-checks as for GHG emissions reductions. In the process of undertaking these checks and balances, Standard staff talked about how they could also get a feeling about a project, a sense of whether project they were reviewing was really beneficial to local communities or respecting the local environment which seemed to be an expression of their tacit knowledge and expertise in documentary reviewing. These feelings were managed by review staff by channelling them back into the documentation, auditing and monitoring chain. In the following example, the reviewer was suspicious that comments from stakeholders had been falsified (made up by local staff, or copied from other LSC reports), even though there was nothing officially missing from this section of the document. Below are excerpts from the review document that was sent between the reviewer and project (project responses in bold):

2. Please provide some more evaluation forms in local language with English translation. Looks like all the forms are filled by the plant personnel.

Find attached in the mail. The forms were not filled by the plant personnel themselves and the speculation regarding the same is not correct.

3. It has been observed that the stakeholder comments received for this project are similar to the other two projects submitted... We understand that the project technology is the same and most of the meetings were conducted within a short time period, but there will be different questions and different stakeholder comments as the stakeholders are not the same in every meeting.

...The issues raised by the stakeholders are general issues related to employment, livelihood, income generation. So, the comments appear to be very similar.

(MPPL Renewable Energy Pvt. Ltd. 2010, p.3).

The reviewer also found an alternative route to investigate whether the problems were due to sloppy documentation, or the falsification of stakeholder meetings:

4. Please provide some more pictures which must have been taken during the LSC meeting for this project activity.

Additional pictures have been provided in the section C.2 of the revised LSC report.

(MPPL Renewable Energy Pvt. Ltd. 2010, p.5).

As in this case, even if there was no (measured, documented) evidence of misapplication of the rules, a reviewer could follow up on a feeling directly with the

project by asking for more information and clarifications. An individual reviewer could organise a call with developers to discuss matters. They could also pass a feeling down the chain of Standard procedures to ensure a project met The Standard requirements. One reviewer described in 2010 how sometimes they felt a “moral responsibility” weighing down on them when reviewing projects, when sometimes the direct responses from a project might not fully relieve a concern even if the documentation was complete. They went on to explain “but you have to get over it... if they aren't doing it [the project] well, someone else will catch them. You have to believe in that [as the LSC reviewer].” The “someone else” they were referring to was reference to the later stages of The Gold Standard processes, which incorporated the oversight of auditors, local NGOs, and further desk reviews of documents by The Standard. Concerns that implied a loophole in Gold Standard rules could be taken to external consultants and the TAC (as in the case of the debates over Turkish hydroelectricity projects mentioned in section 4.5, or alterations to the choice of statistical measures in section 5.2), which might result in a change or clarification of The Gold Standard rules. Specific features of a project could be highlighted for attention by the auditor during the site visit (a Forward Action Request). Auditors could then raise their own concerns (Corrective Action Requests, or Clarifications) which projects had to respond to in writing, and have investigated again at the next site visit (every three years). Tacit knowledge that might lead a reviewer to have concerns about a project could be probed by the individual in their discussions with a project, and continued further following the expectations of multiparty involvement in any project certification. Any doubts over SD on a particular project, as with any GHG reductions queries, were dealt with through combinations of what was measurable and documentable.

6.2.7 Assembling sustainable development into offsetting

From the organisational mandate, documentation and practices it is clear that Gold Standard offsetting is based around SD. As it was put in The Standard newsletter “The sustainable development benefits at the heart of the Standard” (Kouchakji 2010). Gold Standard requirements entangle SD within the networks of other cognitively legitimate features of offsetting, making it measurable and requiring auditing, converting it into something unique at a project site, but epistemologically comparable between projects.

The next section moves on to summarise how The Standard assemble SD in relation to offsetting more broadly. Do their activities implicate SD at the heart of offsetting, taken-for-granted as part of what offsetting more broadly is or should be, as well as at the heart of their own work? Asking staff and Board members about the future of The Standard demonstrated a variety of answers, which I interpreted through Suchman's typology of legitimacy.

For some it was clear: SD was inherent to the idea of offsetting.

There is the triple bottom line, the economic, social, environmental... [in The Gold Standard], set in stone, and nothing is going to change that. The key is... to scale up The Gold Standard. To the point where, really if your project's not a Gold Standard project, well then go home.

(Interview 8, 2011).

Their aspiration was a whole offset market that mirrored Gold Standard priorities. For them, offsetting could only make sense if it included SD considerations, reflecting Suchman's definition of cognitive legitimacy. Some staff located this concern for SD to be intrinsic not only to offsetting but to all business practices:

In my personal view... anything that any industry does should be thinking about sustainability anyway... The Gold Standard has made it very clear that SD should always be at the very core of a market like this.

(Interview 12, 2011).

The suggestion that all offsetting might include SD was echoed in the aspirations of the former CEO:

That was our intention all the way. We wanted to shape how the commodity [offsetting] looked like. I think we did it by means of introducing a benchmark, a quality benchmark and by showing that it's possible to have volume above the benchmark, creating the argument that, so, obviously everyone approves of the benchmark in political circles, so why don't you just make it the benchmark for the market as a whole?

(Interview 2, 2011).

He claimed the long-term goal of The Standard was shaping the conceptualisation of offsetting to include SD: in line with the assumption made by Levin et al. (2009) about the goals of The Gold Standard. As the former CEO defined it, their method was not to

lobby but to show that measurable SD could be possible within offset projects, under the assumption that it was what governments would want, and that they would therefore change the rules of compliance offsetting to be more like The Gold Standard once they saw it was possible. In contrast, others were less grand in their aspirations for The Standard:

I don't think everything [all offsets] will look like The Gold Standard [in the future] because I think... Some people just want to reduce emissions and they don't want to, they don't have any need or necessity or want for the sustainable development side... the whole market shouldn't change.

(Interview 11, 2011).

What is relevant here is that their hopes for The Standard are framed within a different understanding of the place of SD in a broader offsetting assemblage. This quote describes a pragmatically legitimate view of SD within offsetting. For this staff member, the assemblage of offsetting could exist with or without SD and consumers should be free to decide what type of offset they prefer.

The contrast in the two positions is striking, but it reflects the personal opinions rather than Standard elaboration of SD within offsetting. I posit that rather than either these positions, The Standard mandate and marketing in 2010-11 tended to promote a moral legitimacy for SD within offsetting, *not* the cognitively legitimate role described by the former CEO and assumed in Levin et al. (2009). The Gold Standard assembled offsetting to include SD and promote their assemblage a generically better sort of offset, but without undermining the idea that offsetting could also exist without SD as a fundamental attribute.

6.2.8 The moral legitimacy of sustainable development

Although The Gold Standard aimed to increase their market share, their strategic goal was not to have 100% of credits in any market to be Gold Standard certified. The decisions to limit their scope, both overall and through the refinements to the technical details of methodologies to exclude some practices ensured that this could not be the case. As it was stated during one meeting in 2011: “we aren't a volume standard [but] everyone likes us, we are the halo, we are the benchmark for quality.” Their approach was to add SD onto the agenda of offsetting discussions with a differentiated (*quality*)

product in only a minority of offset credits that they hoped others would then imitate. The former CEO had hoped for whole markets to imitate their work because they saw it to be better than other versions of offsetting, but their marketing did not make cognitively legitimate claims.

The Gold Standard did not claim that to be an offset, an activity should always look like a Gold Standard credit and intrinsically include SD considerations. As one of the originators put it “[The Gold Standard is designed to] Facilitate good stuff... [It's] not it's role to take a view on the not-good stuff or the bad stuff” (Interview 4, 2011). In choosing a discourse of quality they emphasised what they added, rather than directly suggesting that other definitions of offsetting were lacking anything fundamental. In marketing activities and their daily work, staff understood their activities as trying to make themselves look better, without making other credit types (and offsetting in general) look bad. Putting this morally legitimate position into practice could be tricky. In feedback from a conference, a staff member remarked to the rest of the team via email: “It takes good communication skills to justify the value of GS credits without undermining carbon offsetting in general,” The difference is subtle but important. Implicit in their work, although SD was taken-for-granted as part of a Gold Standard offset, the definition of offsetting more broadly remained as an activity focused on GHG emissions reductions. As hinted at in their acceptance of the discourse of co-benefits (section 4.3), they proposed Gold Standard (SD) credits as the better form of offsetting, alongside but improving on other less good (but still valid) options within offsetting that can focus only on GHG emissions reductions.

From the position of promoting a moral legitimacy for SD, The Gold Standard actively attempted to shift political agendas to include SD considerations and improve the market share of The Standard. They undertook consultancy with governments to prepare definitions of SD for CDM projects in Thailand and South Africa, lobbied the Australian government in the build up to their national carbon market, and had occasional meetings with government advisors from other countries. Trying to alter the norms and rules of the wider market could be held up as evidence of an aim for a cognitive assemblage, a situation where SD (in The Gold Standard's measured, granular definition) is taken-for-granted in all discussions of offsetting. However, their lobbying

activities did not have this aim. Within these negotiations, the goal was often to get The Gold Standard included as *one of* the admissible standards to developing markets, rather than propose that the entire definition of offsetting for the market could be made in the image of Gold Standard credits. Instead, as a standard rather than lobbying NGO, they focused their efforts on leading by example, which translated as the provision of choice between alternative assemblages of offsetting rather than the promotion of a single, cognitive definition of offsetting.

The Gold Standard marketing material did not suggest that consumers should be looking for SD in their offset credits because offsetting should, in some intrinsic, cognitive way, include SD. Instead, their marketing identified differences among offsets and provide reasons why theirs was better. Offering an ethical argument – referring to some abstract notion of the good that their credits (but not others) met – would create cognitive legitimacy for SD in offsetting, but was something that Standard staff avoided. The CEO told staff during a strategy meeting that he did not want to appear “pious” when promoting the standard. Instead, when Gold Standard staff answered the question Why do people buy Gold Standard credits? in public presentations, the first reason was “reduced reputational risk.” The argument given was that Gold Standard rules meant less chance of bad publicity for offset buyers, thus Gold Standard credits provided (reason two) “confidence and peace of mind in credit robustness.”

Figure 6.6: Why do people buy Gold Standard credits? Marketing to offset consumers



Why do people buy Gold Standard credits?

- Reduced reputational risk
- Confidence and peace of mind in credit robustness
- The only standard to measure, monitor and verify sustainable development criteria in all projects throughout the crediting lifetime of the project
- Widely viewed as *the* quality carbon credit in the marketplace
- Chosen to demonstrate broader CSR commitment
- Measurable co-benefits can enable a strong organizational fit
- Endorsed by 70+ NGOs worldwide
- Credits likely to be eligible in future compliance regimes

Source: The Gold Standard Foundation 2011a. "All About The Gold Standard" Introductory Presentation for all audiences. Slide 13.

The notion of making ethical choices by buying Gold Standard offsets was only indirectly offered as a reason: "to demonstrate broader CSR [corporate social responsibility] commitment[s]... enable a strong organisational fit" (reasons five and six). The framing of the responses suggested that *some* people (in fact, organisations) may be looking to demonstrate commitments, but there was no obligation to make these commitments or share these (socially responsible) goals in order to have a reason to buy Gold Standard credits. Offsets that were not Gold Standard certified and did not include SD benefits were suggested to be more risky and lower quality, but were not criticised in terms that would suggest that these non-SD offsets did not meet the basic definition of being an offset. In an interview, the CEO stressed:

We make it awkward for other participants in the market because we say, No no, you

should do all this other stuff [measurable SD] too... And that's hard... for some participants because we force them to have to care about that stuff, or at least have a position on it, and I think many participants would rather not.

(Interview 10, 2011).

The phrase *at least have a position on it* is indicative: The Gold Standard activities made others reflect on SD, (*to care about that stuff*) but the achievement was getting others to have *a position* on SD. They aimed to make other versions of offsetting appear weaker or more risky, but this is not the same as presenting these non-SD alternatives as invalid versions of offsetting.

6.3 Sustainable development in the assemblage of carbon offsetting

Even without a precise definition, a de facto assemblage of SD at The Gold Standard can be identified. Their rules will not be directly compared to academic debates over SD here, as some evaluations already exist (Drupp 2011; Muller 2007; Bumpus 2009, pp.319–20) and comparisons between offset standards are also available (Kollmuss et al. 2008; Galt 2010). Instead, the second half of this chapter seeks to draw out how the assemblage of SD (as it is defined in practice by The Standard) into offsetting is sometimes shared, but also contrasts to other understandings of offsetting and SD that co-existed within the offset market in 2010/11. Compared to the cognitively legitimate features of offsetting from the previous chapter, the location of SD in the assemblage of offsetting is suggested to be multiple and inconsistent. The aim here is to explore the diversity of assemblages of SD and offsetting using Suchman's typology of legitimacy, rather than reconcile and reduce offsetting and SD to single definitions and stable forms.

Firstly, I show that The Gold Standard inclusion of SD was an unusual (but not unique) agenda for a voluntary standard in the context of offset markets. Other standards and offset types will be shown to incorporate SD in pragmatic and cognitively legitimate ways. Further activities in offset markets ignore and reject SD as relevant to offsetting entirely. Within this diversity of offsetting assemblages, the construction of SD also varies between shadowy rhetorical appearances, epistemologically defined forms and embracing a wider set of issues than those found in the Gold Standard assemblage.

6.3.1 Standardised out of offsetting

By 2011, 98% of voluntary offset credits transacted adhered to a third-party standard (Peters-Stanley et al. 2011). Without government oversight, buyers and sellers of offsets sought out the governance provided by voluntary standards as an attempt to engender trust in offset producers and in the commodity of offsetting. The uptake in their use suggests that within the voluntary offset market they are granted some level of legitimacy as an institution, although the large number of standards available indicates that the authority to designate what is appropriate in determining an offset is widely – and as a consequence, perhaps thinly – spread. The intangibility of the product means that any claims to legitimacy are not based on a direct evaluation of their services by their consumers in the way Turner (2001) suggests for “Type III experts” such as massage therapists. However, as was discussed in the literature review, whether the audience granting legitimacy to voluntary standards is viewed to be the general public or sectarian believers is a matter of contentious debate (Paterson 2009; Levin et al. 2009 c.f. Dolan 2010; Bernstein 2002). Judging the authority of voluntary offset standards is not the purpose of this thesis. What is important for this discussion of voluntary carbon offset standards is the variety of assemblages of offsets that different standards offer through their requirements. The following sections outline similarities and important differences in what a variety of standards – and other actors – articulate as relevant for carbon offsetting. Crucially, there are not only differences in some of what they include within offsetting, there are also distinctions in *how* different standards invoke SD. This is where Suchman's typology of legitimacy again proves useful in enabling a more elaborate depiction of the differences between assemblages of offsetting.

The documentation required by all voluntary offset standards produced the assemblages identified in Chapter 5: using meths and auditors, emphasising measurement and quantification and invoking additionality. However, the majority of voluntary offset standards do not attempt to include SD in their rules (see Annex 3). SD is not at the heart of being a voluntary offset standard, and assembling SD into offsetting is not a shared aim. According to the 2012 State of the Voluntary Carbon Market Report, six out of a total of 16 standards active in the market included measures of local social,

economic and environmental benefits and marketed themselves as including SD as a consideration in their work (Figure 6.7). Between them, these standards (herewith, SD standards) accounted for 17% of the total transacted voluntary credits in 2011 (Peters-Stanley & Hamilton 2012). All of these standards shared a common definition of SD as something *measurable* through the rules they outlined to incorporate quantifications and third party audits. Secondly, all of the SD standards shared a position that identified SD as something that was relevant to carbon offsetting, or at least to specific types of offsetting that they included in their scopes.

Figure 6.7: Table of SD standards

Standard	Certification scope	Project scope
Brasil Mata Viva	SD benefits + GHG accounting	Agroforestry, avoided deforestation in rural areas.
CarbonFix	SD benefits + GHG accounting	Afforestation, reforestation, natural regeneration and agroforestry.
CCB Standard	SD only	Land-based activities.
Plan Vivo	SD benefits + GHG accounting	Community-based land management and agroforestry.
SocialCarbon	SD only	Potentially all projects that use a voluntary carbon accounting standard. Rules developed for industrial processes in ceramics, forest projects, landfill, hydropower, efficient lighting, fuel switching and composting.
The Gold Standard	SD benefits + GHG accounting	Energy efficiency, renewable energy and composting

Source: Peters-Stanley & Hamilton 2012 and standard websites.

However, even between these standards there were significant differences in the association of SD to the assemblage of offsetting. Two of the six SD standards were tag-on standards. They certify *only* SD benefits, they do not offer GHG emissions reductions assurances. They are primarily designed to be used alongside (and thus to tag-on to) one of the GHG accounting standards.³⁶ This matched with the position of rest of the voluntary standards available by 2012, which were classified as GHG-accounting standards, meaning they offered verification on the emissions reductions of

³⁶ CCB Standard can be used without a carbon accounting standard i.e. a project is only certified for its SD benefits as a development project, not its GHG emissions reductions as a certified offset producing project. This accounted for less than 3% of their usage in 2011 (Peters-Stanley & Hamilton 2012: 30).

projects, but no monitoring or verification of any SD claims. Thus, while The Gold Standard were not entirely alone in their invocation of SD, standards that included the measurement and promotion of local social, environmental or economic benefits alongside GHG emissions reductions were a small minority in the voluntary offset market.

6.3.2 Plan Vivo

The Plan Vivo interpretation of SD can be seen as ontologically distinct but epistemologically similar to what has been described at The Gold Standard. As described in Chapter 4, the Plan Vivo rules formed a group known as producers: small-holders or cooperative farmers who participated in the designation of their land as an offset project, and received the economic benefits from offset sales. Plan Vivo included requirements about who could keep the profits made from offsetting. This is a different interpretation of economically sustainable from that at The Gold Standard. In contrast to The Gold Standard where local stakeholders were only required to be “consulted,” Plan Vivo projects had to have “a producer/community-led planning process” (Plan Vivo Foundation 2008). Development was supposed to be directed by project participants in Plan Vivo projects, rather than driven by project developers as with The Gold Standard interpretation of SD. Nonetheless, despite these differences, both standards required SD to be measured and measurable in similar ways: records of meetings, reports from auditors, measurements of plots and trees, documented feedback from participants.

As with The Gold Standard, the Plan Vivo business model did not look to be able to certify all credits in carbon markets and become cognitively legitimate through monopolising the market. However, where The Gold Standard avoided a discourse of morals or ethics, Plan Vivo embraced it, stating that they offered “ethical carbon offsetting” (Plan Vivo Foundation 2010a). In contrast to promoting SD as something optional but desirable in offsetting, the Plan Vivo approach was to emphasise SD as something that was right in an ethical – and thus cognitive – sense.

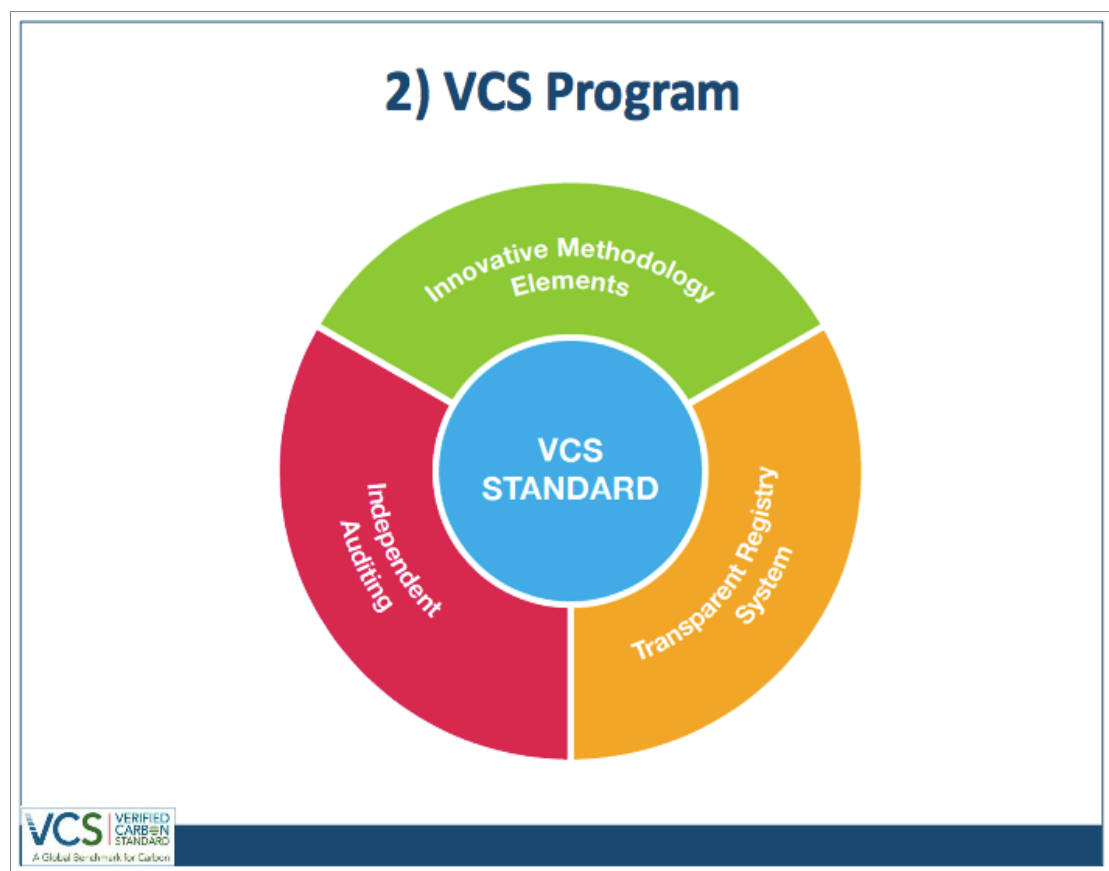
6.3.3 The Verified Carbon Standard and tag-on standards

VCS was the most popular voluntary offset standard, with 58% of the voluntary market

in 2011 and eligible in regional compliance markets (Peters-Stanley & Hamilton 2012). In their own marketing, VCS claimed to be “a global benchmark and framework for the voluntary carbon market” (VCS n.d.). VCS did not limit their aim to being the top end of the market; they look to encompass the whole market – to become the definition of offsetting – with their approach.

In the original consultation document sent out to prepare VCS in 2006 they included the suggestion that “The VCU Verification Criteria [what became VCS] requires that projects proponents demonstrate that project implementation has no negative impact on sustainable development in the local community” (IETA & The Climate Group 2006, p.19). This was not as high an aim as The Gold Standard, who sought *positive* SD benefits, but even this minimum goal was not formalised into the VCS rules when they were released in 2007. VCS became a GHG-accounting standard, with no obligations on projects to incorporate SD in their practices of offsetting.

Figure 6.8: VCS Marketing



Source: Australian Carbon Trust Webinar Series: NCOS Eligible Offsets Introduction.

In 2010-11 VCS claimed to be the benchmark or framework for voluntary offsetting. They felt able to make these claims (and consumers to believe them) without needing to include SD in the rules of what an offset must include. The official presentation of VCS did not make allusions to SD (figure 6.8).

The active choice not to codify SD requirements into their standard (with one exception, see below) demonstrates a definition of offsetting that did not inherently include SD as a feature of the assemblage. Nevertheless, VCS rules did allow for SD to feature as a possible add-on to offsetting, even if it is not constructed as intrinsic to making and certifying offsets. As explained in the 2009 version of VCS: “Additional standards such as the Climate, Community & Biodiversity Standards (CCBS) or Forest Stewardship Council (FSC) certification may be applied to demonstrate social and environmental benefits beyond GHG emissions reductions or removals” (VCS 2012, p.6). The VCS website supports the use of tag-on standards under a subheading of Multiple Benefits & Linking. They identify the potential benefit of SD for specific buyers rather than all offset customers looking to minimise risks: “VCS offers a unique tagging system that allows projects to demonstrate additional benefits to the environment and local communities. Tags are often requested by market stakeholders or government bodies” (VCS n.d.). The VCS attitude formulates pragmatic legitimacy for SD in the assemblage of offsetting. Despite not including it in their own rules, VCS do not negate the possibility of SD benefits from offset projects. Instead, they suggest that SD *could* be relevant to offsetting through the addition of tag-on standards. In this form, SD is left as an optional extra that some consumers might choose, not something inherent about offsetting that all consumers should consider. This take-it-or-leave-it approach does not engender the desirability of SD in a way that makes it morally legitimate within offsetting, as was the case in The Gold Standard marketing.

6.3.4 Carbon narratives and adjectives

Beyond the rules of standards, discourse in offset markets suggested a different arrangement of SD and offsetting was sometimes at play. Adjectives for carbon and narratives for selling offsets incorporated SD as something morally legitimate about offsetting – something that could make offsets more desirable. However, the SD that

was invoked was not necessarily the epistemologically defined, measurable SD that The Gold Standard promoted.

Gold Standard staff thought that market intermediaries talked about SD when they were trying to sell VCS (and other) credits. The following quote was from a meeting where a staff member reported back on discussions with an offset buyer:

Although we [Gold Standard] are the only ones who do SD [sic], it's still possible [for sellers] to create a story for VCS projects – a narrative, even without measures. They [the buyer] were convinced by the stories... they understood that that's [SD] not [verified in] the credit, but if you're a smart salesperson they can sell it and sell a significantly cheaper credit and create the same sense of value.

These marketing narratives were discussed by Lovell et al. (2009). They confirmed that a SD marketing strategy was more widely used by defining certain project types, producers or identifying features of projects as socially beneficial, not only projects that were verified by an SD standard. These narratives were also identifiable in market discourse, in the form of carbon adjectives that were often used independent from particular voluntary standards.

In 2007, the authors of the first State of the Voluntary Carbon Market report referred to “gourmet” and “charismatic” carbon (Hamilton et al. 2007, p.6). Paterson and Strippel (2012) also pick up on the phrase “boutique” carbon being used, and the most recent market report added “exotic” and “those 'beyond carbon' impacts” (Peters-Stanley & Hamilton 2012, p.29). These descriptions infer something special or better about the offsets they describe. Paterson and Strippel (2012) suggest this language refers to projects that created a more personal relationship between a buyer and project communities – projects that intervene directly in the everyday activities of identified groups of poor people. The project types most usually mentioned were ones such as cookstoves, water or lighting provision to poor communities, small-scale forestry, avoided deforestation, or agroforestry, which are frequently but not always small-scale. This potential for a personal relationship is the outcome of defining projects with marketing that emphasises their local social, biodiversity and economic benefits. In short, this vocabulary can be grouped together because they are used to describe projects with the suggestion of SD along with GHG emissions reductions. However, not all are

certified by standards that include SD measurement: VCS offer both cookstove and forestry accreditation, for example.

The SD features that garnered special attention are referred to as beyond carbon. As was pointed out by Kollmuss et al., this separation of SD from what was taken-for-granted about offsetting was already being enacted in 2008:

The distinction between 'minimum standard' and 'gourmet' offsets is to some extent a useful shorthand, yet it also reveals that sustainability and development benefits are no longer seen as an integral requirement for a carbon offset. This holds true for the compliance market as well as the voluntary market.

(Kollmuss et al. 2008, p.28).

As they state, is clear from this discourse that credits that are sold without invoking large or direct SD benefits are still legitimate and comprehensible as offsets. SD (whether measurable or not) was invoked as a desirable or pragmatic addition to offsetting, not something intrinsic to the creation of an offset and discussions of carbon.

The alternative to these special credit types were described in reports and discussions by market participants as “commodity carbon” (Hamilton et al. 2007, p.6), “pure carbon” (Edward Hanrahan, ClimateCare Executive Director, quoted in Peters-Stanley et al. 2011, p.45) or low-cost carbon. As it was framed by one Gold Standard staff member, these cheaper credits were cheap precisely because they did not import SD as a relevant feature: “There's also a need for just low-cost carbon. Some people just want to reduce emissions and... don't have any need... for the SD side.” (Interview 11, 2011). “Walmart carbon” (Paterson & Stripple 2012) has similar connotations. Most of these adjectives suggest price differentials and higher desirability between these different categories of offset: one would expect to pay more for gourmet or boutique items. This was borne out by average prices of project types associated with SD and SD-standard certified credits. Cookstove projects earned higher average prices per credit than other project types in 2011, even though not all used an SD standard (Peters-Stanley & Hamilton 2012). Similarly, credits certified with one of the SD-standards transacted on average at over US\$8 per credit, whereas the market norm was US\$4-6 per credit (Peters-Stanley & Hamilton 2012, p.31). This suggests a moral legitimacy for SD-related offsets, where they are more desirable, as reflected in the vocabulary and their

higher prices, even if it is still possible, legitimate and popular to buy offsets (the low-cost or Walmart versions) without these features.

However, not all of the vocabulary points to the same moral ordering of offsets with and without SD (in measured or rhetorical form). The idea of pure carbon suggests an understanding of offsets as at least less messy without SD than with it. This implies offsets that do not relate to SD might be preferable, at least for those looking for an easily tradable commodity. Gold Standard staff were familiar with this suggestion. The CEO, who had come from the banking sector and worked closely with carbon traders, pointed out: “There's a strong view in the market... that it [offsetting] should be about pure carbon, the cheapest carbon pure and simple, and not mess around with the other stuff [SD]” (Interview 10, 2011). On occasion Gold Standard staff reported on interactions with corporate voluntary credit buyers “like G-----, who just don't care about sustainable development” to other co-workers. The company in question makes concerted efforts to at least appear interested in SD in other parts of their business, but in terms of what they were looking for from a carbon offset, SD was not a consideration. For these actors, offsetting was something that they preferred to handle without any SD attached to the assemblage.

These contradictions within the discourse around offsetting are not necessarily reconcilable – or, from a post-ANT perspective that draws on the likes of Law and Mol (2004), necessary to reconcile. The evidence presented demonstrates different buyers, projects and intermediaries holding simultaneous but conflicting assemblages of offsetting as it relates to SD. For some, offsetting exists best without the less fungible mess created by attempting to include SD features or details of the local circumstances of an offset project site. For others (such as at VCS) SD could be a pragmatically legitimate tag-on, either as a measurable or non-measured activity, without necessarily implying anything superior about offsets with measured SD. For those interested in buying or promoting charisma, SD made offsets better, although it did not necessarily need to be something that was measured, or understood as something that was measurable. But even in this morally legitimate version of the relationship between offsetting and SD, carbon offsetting is still implicitly defined as a GHG reductions activity, existing without automatically implying SD benefits.

6.3.5 Agriculture, Forestry and Other Land Use

It is striking in figure 6.7 that four of the SD-related voluntary standards are applicable to a particular subset of offset projects: Agriculture, Forestry and Other Land Uses (AFOLU).³⁷ There were also several other standards that include AFOLU types that do not require SD (see Annex 3). However, it is relevant that there was one exception to the VCS exclusion of SD as a relevant matter for their rules. When AFOLU projects were added to the VCS scope in 2008 they came with an extra clause that “projects shall identify potential negative environmental and socio-economic impacts and shall take steps to mitigate them prior to generating Voluntary Carbon Units (VCUs)” (VCS 2008, p.9). This rule was not extended to any other project type. Similarly, in a description of the development of forestry offsets, Stephan noted that political negotiations over the rules of future compliance market incorporations of forest based projects include “claims about the multiple benefits... (e.g. the protection of biodiversity or indigenous peoples' livelihoods)” (Stephan 2012, p.634).

This idea that AFOLU projects, particularly forestry based credits, came with a different way of assembling SD into offsetting was also identifiable in the conversations of those working within the offset market. The following statement was made during a TAC meeting:

A hydro [-electricity project] is more or less the same in any country, but a forest [project] is always different. Even the same [species of] tree - the social structure around it is so different.

The speaker had no commercial interest in differentiating forestry credits. The comment was not subject to challenge from others present who worked with a wide range of other project types, but all with an active interest in SD within offsetting. For those at this meeting at least, it was true that the alteration of the water cycle through carbon offset activities was simply not framed as being socially or environmentally significant

³⁷ These projects go under numerous acronyms each with slightly different boundaries and debates, including REDD, REDD+, LULUCF (land use, land-use change and forestry), A/R (afforestation/reforestation) and forestry carbon. Here AFOLU has been chosen as a heading it incorporates these other categories, and reflects the boundaries of the standards mentioned (in particular, the CCB remit and the exception made in VCS rules). Forestry carbon relates to af/re/avoided de-forestation and agroforestry project types in particular, and has (often) been the site of more specific SD-related discussions. It was also the phrase most often used during discussions by staff at the Standard, hence its inclusion.

in the same way as a potential change in the biosphere. What is instructive in the quote is that this inherent relevance of SD is something supposedly related to the very tree-ness of projects (but not the water-ness of other projects). This demonstrates how SD could be cognitively legitimate in one form of offsetting whilst being simultaneously excluded from others within carbon markets, even within the same sentence.

The political opportunity structures of different negotiating streams at a UN level are most usually cited as the cause of the general differentiation between other types of offsets and forestry carbon (Stephan 2012). Land use project types had been largely excluded from the rules of the compliance market at Kyoto, having been seen as the “bogeyman” of offsetting (anonymous forestry carbon market participant, 2010) due to a mixture of technical and political debates.³⁸ Forestry carbon came to exist as its own, different type of carbon offset, and even had reports dedicated to it (Walter & Kahlert 2010; Diaz et al. 2011). These reports reflected a slightly different set of developers, standards, buyers and issues that emerged in the debates and market around forestry carbon. The State of the Forestry Carbon Markets report (Diaz et al. 2011) saw fit to include an analysis of projects by land ownership, something its sister report of the voluntary market (with one of the same lead authors, K. Hamilton) has never discussed. This relates to the differences in the definitions of SD between Plan Vivo and The Gold Standard presented above: ownership of the means of production (land tenure) was on the agenda of forestry offsetting more generally, not only within the rules of Plan Vivo.³⁹ By 2010-11, forest offsets had come to be understood by many in carbon markets as a type of offset where SD was an inherent, cognitively legitimate part of the assemblage – even if, like VCS, the actor set out to avoid officially including SD in what it meant to define offsetting more broadly. With AFOLU, VCS felt obliged to make an exception to their general, pragmatically legitimate approach to SD and include a reference to it in their rules.

6.3.6 The Clean Development Mechanism: to oversee is to overlook

A further important location to consider the relationship between SD and offsetting is in

³⁸ Technical unknowns in calculating carbon stored in soil, managing leakage and permanence, and the political advantage gained by developed countries with large forests and lots of land (e.g. Canada) if AFOLU was included were all reasons for the exclusion.

³⁹ Although other AFOLU SD standards allow private developers and commercial land ownership for their projects.

the regulatory framework that dominated the development of offsetting from 1997 to 2012: the CDM. The assemblage of SD and offsetting in the context of the rules and practices of the CDM was significantly different to the situation in the voluntary market.

Considering how much of carbon markets were not developed in the Kyoto Protocol (the word offsetting does not even feature), the appearance of SD in the aims of the CDM is of some significance. As noted previously, SD was not defined within the CDM rules, this was done by each country hosting offsetting projects. Project proponents were required to submit their proposed project to the government of the country (the Designated National Authority, DNA) where their project was situated to show that it met the national definition of SD. There was a desk-based pre-evaluation of the project, which was the responsibility of the DNA, not the UN or auditors. The DNA then produced a letter confirming whether or not the proposed project was acceptable under SD criteria. The project proponent had to show this letter to the UNFCCC when applying for compliance market accreditation. This meant that at least nominally, all CDM projects took account of SD in their project design documents and SD was present in every CDM credit. It is well documented that some DNA were more strict, interested and/or with greater institutional capacity to undertake SD-scrutinising duties than others (Newell 2009, pp.427–8). As a result, SD expectations on projects in different countries differed significantly.

Under these CDM rules, once a project was underway SD claims were not subject to any monitoring or evaluation. What this meant in practice was described frankly in an interview between two individuals both working for organisations that dealt with the CDM process, being undertaken by a research organisation on behalf of the UNFCCC:

Speaker 1: For the CDM, no one will look at it [the SD benefits of a project]... if you don't do it no one cares, or that's the wrong word, but no one looks because you've already got your letter of approval [from the host country].

Speaker 2: Yes, it's an approval at the outset by the host country and that's it.

Similarly, during my induction to The Gold Standard a staff member referred to The Standard in the CDM market as “the SD stamp on CER” which, by implication, the CDM was not giving by itself. This summary of the situation is shared in most

academic evaluations of the CDM. Holm Olsen's early but extensive literature review on the CDM and SD concluded that "left to market forces, the CDM does not significantly contribute to sustainable development" (Olsen 2007, p.59). A UN-written, report into the SD impact of the CDM damns with faint praise, concluding "most CDM projects *claim* several sustainable development benefits... there is also evidence to *suggest* that CDM projects are indeed making a contribution to sustainable development" (UNFCCC 2011a, p.5, emphasis added). The contribution was most often identified as technology transfer and the provision of jobs, rather than social and environmental benefits (UNFCCC 2012a). The attitude taken by many (buyers and project developers) of CDM credits was summarised succinctly by a TAC member: "People are complying in the compliance market because they have to, so why would they do more than they have to?" (Interview 2011). The suggestion is that practices of SD have become something that compliance projects do not have to do, and that most buyers did not look for, even if SD features in the Kyoto Protocol.

These findings test the metaphor of assemblages using Suchman's typology. SD in the CDM was in some ways cognitively legitimate: it was obligatory to codify it in all projects, proven by a letter from a DNA, and worthy of UNFCCC publications to demonstrate that it existed. SD itself was differentiated in its assemblage in different countries, not made measurable and, according to most independent reports, non-existent in project outcomes. In the daily work of offsetting evidence suggested that developers, intermediaries and buyers did not perceive SD as an intrinsic feature of compliance credits, portraying it as a pragmatically legitimate option – something they could do but "more than they have to," or perhaps not legitimate at all. Those who evoked ideas of "pure carbon" were talking as much about compliance markets as the voluntary offset market, looking for ways to remove the messy tangles of SD from a market which, from 2008-11, had enormous value for secondary trading in ways that relied on fungibility, not the uniqueness and "ethics" of offsets. So despite being made cognitively legitimate in the discourse of the CDM, practices of the CDM compliance market left great variability in how SD was practiced, and whether it was considered legitimate.

6.3.6 Quality

The different use of quality in carbon offset descriptions exemplifies and concludes this section, demonstrating the variety in the ways in which SD is assembled into and out of offsetting. The relevance of the term was seen in its wide but varied use during fieldwork, but the literature described in Chapter 2 over the influence of auditing and quantification also note its ambiguity and ubiquitousness in a range of fields (Higgins & Hallström 2007; Power 1999). The ENDS Guide to Carbon Offsets, a market-oriented publication for the voluntary market, referred to quality carbon by explicitly excluding SD considerations: “sustainability benefits can be a bonus but cannot substitute for carbon quality if the buyer is going to claim that carbon emissions have been offset” (ENDS 2008, p.7). In this understanding of carbon offsetting, quality appears to mean information on GHG emissions reductions only. SD is simultaneously identified as a potential, pragmatic feature of an offset, but affirmed as something that is not inherent to offsetting.

Published in the same year, a European Parliament committee offered a contrasting definition of quality. Proposals on the future of carbon trading in the EU referred to The Gold Standard as an ideal offset type for future EU markets: “the rapporteur proposes to accept exclusively JI/CDM credits and/or other ‘external’ credits... if they come from so-called Gold Standard-type projects” (Doyle Report 2008: Amendment to Article 28, quoted in De Sèpibus 2008, p.63). Later versions of legislation removed the direct reference to The Gold Standard, but continued to discuss high quality offsets. This was defined in one amendment as:

*Credits from high quality projects... **Such projects should support environmental and social sustainability, demonstrate an environmental benefit, avoid carbon leakage and include a transparent mechanism of validation and verification.***

(European Parliament 2008, emphasis in original).

Here, quality in offsetting was defined as including economic and social sustainability, these are not a bonus but central to what an offset was thought to contain. In the progression of EU debates, new offsets from 2012 onwards were required to come from Less Developed Countries, indicating a continued role for SD benefits from offsets,

although not in the measured way that The Gold Standard assembled SD.

At Plan Vivo, quality in offsets was something different again. Commenting on my suggestion that for other offset standards, carbon quality seemed to be identified with a focus on precise measurement, the Governance and Operations Director responded: “there is a focus on quality in Plan Vivo, but not a highly technocratic approach to measurement which trumps other things e.g. the value of getting started.” In their view, quality in the offset market should be associated more with “catalysing action” and “practical... on the ground activities,” rather than emphasising “theoretical” debates over credit robustness (Operations and Governance Director, personal correspondence 2011). In the context of Plan Vivo and their cognitive incorporation of SD into offsetting, quality was certainly linked to more than GHG emissions reductions.

Finally, a definition that rings true with the discourses of gourmet and charismatic offsets described above was also associated with quality for some. At an internal Gold Standard meeting, one staff member had wanted clarification of the organisation's tagline (high quality carbon offsets). Specifically, they wanted to know “what is quality for an end buyer?” A marketing team member who had just finished some market research for The Standard replied that for end buyers, it was “an interesting story; exotic, charismatic projects. It's actually the story people are seeing and they get to choose the project on... simple stories with photos.” This end-buyer perception of quality had to do with the incorporation of SD into offsetting, but not necessarily the measurable and verified version of SD that The Standard undertook, or their fine-grained attention to detail, measurement and quantification across both SD and GHG emissions.

Different definitions of quality encapsulate the different assemblages of offsetting that existed with and without SD, and in various definitions and practices. These co-existed within voluntary and CDM compliance practices during 2010/11, producing a multitude of offsets and carbons.

6.4 Conclusion

This chapter has focused on SD, its role and definition within The Gold Standard and

its various locations within the plurality of assemblages of offsetting. While The Gold Standard gave no codified definition of SD, decisions over standard scope and the daily technical discussions this entailed, requirements placed on projects and the procedures used by Standard staff to conduct desk reviews combined to offer an identifiable *de facto* SD at The Standard. Vitally, SD was something measurable, and that The Gold Standard routines could measure through their attention to technical detail. Making measurability took effort from Standard and project staff, auditors and local stakeholders. Their epistemological standpoint on SD meant the processes of making SD included features of what is taken-for-granted about how to make an offset more generally: measures, audits and quantifying.

SD was defined as intrinsic to the activities of The Gold Standard, what they saw to be fundamental to what makes them different to other standards, and their credits different to other credits. However, an analysis of their marketing in 2010/11 did not find SD to be presented as something intrinsic to offsetting. The way they presented their work offered SD as part of a desirable, better form of offset. This differentiation allowed offsetting as a concept and commodity to exist with or without SD as a feature. Their position associated SD with quality, but it did not seek to enforce SD as a taken-for-granted aspect of offsetting. As a result, SD was determined to be morally legitimate in the assemblage of offsetting as propounded by The Gold Standard.

In contrast, a comparison of other standards, discourses, offset types and the CDM demonstrated that there are alternative and conflicting constructions of the role of SD in relation to offsetting. For example, VCS made SD a potential tag-on attribute, but notably external to what it meant to certify an offset. In contrast, forestry credits often appeared with SD as a cognitive, taken-for-granted attribute, and Plan Vivo rules were an example of a more extensive definition of SD that included ownership of the means of production as a core consideration of the developmental benefits of offsetting. Market discourse using words like gourmet and low-cost chimed with The Gold Standard definition of offsetting as something practicable without SD considerations (measured or not), but better with them. But these were used to describe SD as something unmeasured, inherent to project types rather than only in the quantified assemblage of SD found at The Gold Standard. In the expectations of many in the

CDM compliance market but also voluntary buyers, SD could be left out of offsetting altogether. As summarised finally in the contrasting use of carbon quality, the suggestion is that concurrent versions of offsetting incorporate SD as alternately pragmatically, cognitively and morally legitimate or illegitimate. The evidence presented here suggests offsetting is being commoditised both with and without SD as a feature, in ways that do not match up, but that are both nevertheless present within offsetting practices. There is more than one way of being an offset when it comes to relating SD, and multiple co-existent forms of carbon.

The summation of this data is not a conclusion that classifies SD and offsetting into simple binary codes as externalised or internalised, entangled or disentangled, present or absent. Instead, using the vocabulary of Suchman, *how* the assemblage is connected, the strength or thickness, one might say, of the ties that are perceived to draw different actors within a network together has been explored. This provides a way of understanding assemblages by thinking not only about what is interconnected, disconnected, inside or outside the frame, but the nature, the texture of these links. Furthermore, as in the work of Mol (De Laet & Mol 2000; Mol & Law 2004), the suggestion is that offsetting exists as one activity, but multiple assemblages that co-exist although they are not consistent.

The following chapter examines how The Gold Standard incorporated and excluded other parts of the lifecycle of offset credits from their remit and their taken-for-granted activities of measurement, auditing and SD verification. This allows for reflection on what is excluded from the work of a voluntary offset standard, and a different perspective on how The Standard make SD relevant or desirable as part of carbon offsetting. This will allow for final discussions on the locations that have become the focus of attention with regard to SD in relation to offsetting, and the wider discourses of carbon.

Chapter 7: The buyer side as a given

7.1 Introduction

Up to this point, the story has followed the actors. Previous chapters focused on what was taken-for-granted in the assemblage of offsetting at The Gold Standard, with comparisons drawn to Plan Vivo and other organisations and discourses present in offset markets. Inspired by Silverman's methodological suggestion for qualitative research to contemplate the “rules of what is relevant or irrelevant within any setting” (Silverman 2011, p.49) and the Strong Programme and their search for symmetry, this chapter explores what was outside as well as inside the assemblage of The Gold Standard and their approach to offsetting. The focus turns to where the assumptions of the benefits of technical detail, measurement and SD were not applied by The Standard. That is, how they separated their “technological zone” (Barry 2006) from other articulations of carbon.

This chapter locates the work of The Gold Standard with reference to the lifecycle of an offset into three phases: production at project sites (covered in chapters 5 and 6), trading in the CDM and voluntary carbon markets, and consumption by end-buyers. The first section of this chapter describes Gold Standard involvement in offset credit trading. By 2010/11, The Standard took for granted their role in overseeing credit transactions, but unlike in offset production their involvement aimed to reduce the potential for illegal activities rather than to promote a quality version of offset trading that might include SD. Following on from this, the act of consumption is described as outwith the remit of The Standard. The Standard contact with offset consumers aimed at marketing to them rather than subjecting them to scrutiny on their GHG calculations or how their activities met SD requirements. A brief comparison with market discourses and the rules of the CDM underlines alternative constructions of responsibilities, requirements and assemblages within offsetting.

The final part of the chapter takes data largely collected through interviews. This is a consequence of trying to look at an issue specifically *not* part of the daily practice that was observable at The Standard. Asking staff, Board and TAC members about The Standard remit along the lifespan of a credit produced a variety of responses about why different stages of an offset might, should or could be included or excluded from the work of a voluntary offset standard. These are analysed by extending Suchman's typology of legitimacy to identify the differences in how respondents justified *not* assembling certain actions and actors in a way that sheds light on divergent understandings of what it means to be a voluntary offset standard, and where SD sits within The Gold Standard framing of offsetting and carbon.

7.2 The role of The Gold Standard in the carbon offset lifecycle

The Gold Standard was developed in response to CDM rules to differentiate between carbon offset projects, emphasising the SD benefits of some types of projects (see Chapter 4). Staff understood its primary role as being to monitor and scrutinise project activities as they were measured, quantified and audited in accordance to detailed rules, assuring that the offsets that were produced came from projects that respect and improve the local social, environmental and economic situation as well as resulting in GHG emissions reductions. All of this work tightly focused the attention of staff (and their technologies and texts) onto offset projects, the production of the commodity of an offset. But one staff member pointed out during my internship that this was not the only part of the offsetting chain that could be looked at:

The labelling and certification process [of The Standard] is about project activities, we aren't at carbon footprinting or business practices [or] other aspects that are further down the chain... we technically only look at one part... [but] Offsetting isn't just about [the] quality of project activities. There is a quality all along the chain that should be considered. We ensure quality in the credit, but not upstream in carbon accountancy, or downstream... [in the] market, with people offsetting.

These comments by the Technical Director drew my attention to the role of The Standard in other parts of the lifecycle of an offset, and how this was perceived and justified by staff, advisors and Board members. In their primary focus on the conditions of production, The Gold Standard are typical of voluntary social and environmental standards. As pointed out by Frizell (2009), such standards insert requirements on

(usually developing country) sites of production but are not matched by comparable demands on the (most typically in developed countries) sites of trading or consumption. But in fact, The Gold Standard involvement in the lifecycle of credits did not entirely stop at the project site. They had also developed themselves a role in overseeing the trading of offset through the mandatory tracking of their credits as they were traded.

7.2.1 Trading Gold Standard credits

Once project activities started, the project developer calculated the amount of GHG emissions reduced, and these calculations were checked by the auditors (DOE) and Standard staff. This quantity was the amount of offset credits that a project produced. Each credit (that is, each tonne of CO₂ equivalent gas calculated *not* released by the project, that would have otherwise been produced) was given a serial number. They were listed on The Gold Standard registry (issued) and became the electronic, tradable form of an offset. For CDM credits, the credits are issued (i.e. given serial numbers) by the UNFCCC, then the UN serial numbers appear in The Gold Standard registry in the account of the project proponent.

The registry was the summation of hard- and software and the data that was inputted into it by staff at The Standard, project developers, credit buyers and the private companies that provide and maintain the software. It was presented to the public in the visible form of a website, and promoted as facilitating transactions of offsets whilst assuring their legality. The registry was a set of constantly changing information held in stable (but digital, not physical) locations. The Gold Standard registry had three functions. Internally, it was used by Standard staff to monitor project progress along the pipeline and share project documents with external organisations (auditors, NGOs, developers). It was the digital site of credit issuance with serial numbers that were intended to allow the additionality of project activities, quantified into discrete tonnes of CO₂ equivalent, to be uniquely identifiable, so that the same reductions were not sold to more than one buyer (double-selling). The registry was also, principally, where credits from projects – offsets in their fully commodified form – were tracked as they were traded.

This idea of tracking credit transactions on a registry came from the CDM. In a compliance market, credits can exist as allowances/permits (given to polluting

companies) as well as offsets (bought from offset projects). The amount of credits held by each company – whether from their own allowances, or trading allowances and offsets with others – is recorded to make sure the total of GHG emitted is under the total limit that has been set for the market. As a result, these registries serve two purposes: they keep account of the carbon emissions of polluting companies (like inventories) *and* they monitor the trading of credits between different offset producers/polluters (market exchange/carbon accounting). Under the CDM, national registries were required in each country under the cap to track the trade of all permits and offsets and make sure each country met its GHG emissions target.⁴⁰ It was illegal activities in the ways credits were traded within and between these registries that created multiple scandals in 2009-11 over carousel trading and fraud (Kanter 2010; Mason 2011).

7.2.2 Voluntary market registries

In the voluntary market, there was no regulatory imperative for third party registries to be developed for inventory purposes or to monitor market exchange, but both types exist. The Gold Standard only became involved with market exchange registries. Starting in early 2008, The Standard required all transactions of Gold Standard credits to be recorded on registry software that The Standard paid for, provided by a private company called APX who specialised in “energy and environmental markets infrastructure.” The motivation of The Standard was to help to avoid double-selling in a market that traded an intangible commodity. As an internal memo summarised it “The principle function of a carbon registry is the electronic establishment (issuance) of carbon credits... an action that confirms the ownership or right to those credits.”

The Gold Standard were the first voluntary standard to institute their own registry for tracking credits (Interview 14, 2011). The Technical Director was proud of The Gold Standard's leadership, identifying it as the first of several ways The Standard had had a positive impact on the voluntary market:

[The Gold Standard set] a benchmark for quality and for credibility in this [voluntary] market compared to the situation before [when] it was more or less a jungle. We were

⁴⁰ In 2009 the European Commission decided to centralise the transaction recording into one European Union registry (known as the European Union Transaction Log), which took over from national registries in June 2012.

the first ones to come up with a registry.

(Interview 14, 2011).

Scandals about double-selling were a major concern for the voluntary offset industry in the mid-to-late 2000s, along with mixed perceptions of the trustworthiness of offset project activities. The solutions from those who were participating in offsetting were widely regarded to be standards and registries: “most major market players agree that, in the end, standards and registries will be needed in order to truly increase the legitimacy of the marketplace” (Hamilton et al. 2007, p.37). At that time other voluntary standards were already considering the idea of incorporating registries into their activities – in 2007 VCS and SocialCarbon were reported to have registries under construction, and VER+ credits were already transferable within a registry set up the same auditing company that was behind the standard (Hamilton et al. 2007, p.42). But it was not inevitable that the responsibility for (or power to) organise these registries to follow credit transactions would fall to standards organisations. The skill sets and technologies required to organise a standard or a registry were not the same. In fact in 2007, many other types of organisation were taking the lead in developing market exchange registries, including auditors, banks and project developers, and none of the standards organisations attempted to develop registries in-house. Private market infrastructure companies developed the technologies required, which were then sold as products to standards organisations.

It has been beyond the capacity of this research to track how and why the development of the market came about in this fashion with standards taking on the responsibility for registries. As described in Chapter 4, for those involved in the development of The Gold Standard the central aim was to improve the chances that offset projects would have positive SD impacts rather than design a registry to monitor voluntary market transactions. The registry came about as a secondary activity. What is clear is that by 2011, all of the main voluntary standards (including Plan Vivo) had contracts with infrastructure providers to track credit transactions. It became the standards organisations – not offset producers, market traders or consumers – who got to decide which registries their credits were tracked and bought through. They decided that this role should be part of the responsibility of being a voluntary offset standard.

By the time of this fieldwork, the tracking element of the registry was firmly entrenched and taken-for-granted within the remit of The Standard. In an informal conversation at The Standard office, a staff member commented in 2010 on how a carbon trader had told him that the carbon markets were “full of dodgy characters... less transparent and reliable than the guy who sits next to him [the trader], who works on the uranium market!” Another staff member replied they had heard people say that carbon would be “the next sub-prime market.” These accusations related primarily to the way that credits were traded rather than produced. One staff member concluded the conversation by saying “that's why we [The Gold Standard] need to be here... that's what we work on.”

When scandals broke about large-scale fraud in EU compliance market registries in 2010-11, The Gold Standard management, TAC and Board discussed their own registry security. The discussions were framed as ensuring as little room for fraud as possible within their registry systems, and to investigate what would be the limits of their legal liability in such an event. At no point during the discussions did the idea that The Gold Standard did not need to be involved in tracking credit transactions appear discussions. It was taken-for-granted that The Standard would continue to require credit trading to be conducted through their registry, and that it was within the domain of a voluntary offset standard to set such a rule. However, the inclusion of credit tracking within The Gold Standard remit was not discussed within the framework of their SD focus. There were no requirements for the same level of scrutiny of the individual offset buyers or sellers as they instituted for offset producers. During the meetings I observed, there were no discussions of placing any limits on who could trade or purchase credits, in the way that such a positive list (the standard scope) existed for producers. Their work with the registry was not aimed at producing a differentiation between higher quality traders and others, or related to the SD requirements of The Standard. Oversight of trades of Gold Standard credits was seen as a core and important part of The Standard's work in ways to make sure the market reached a minimum legal norm, but not the same halo of tighter criteria for traders that would match their approach to producers.

7.2.3 Monitoring, not scrutiny

In 2010, The Gold Standard allowed their credits to be traded through a second registry (Markit) as well as on their own, Gold Standard-only registry that was provided by APX. The Markit registry had the advantage of trading for multiple standards (including Plan

Vivo), allowing buyers to mix their purchases of offsets. It was the equivalent of allowing Gold Standard credits to be stocked in the online offset supermarket rather than only available in the small Gold Standard-only shop. The Standard's decision was motivated the additional benefits of being on a multi-standard, expanding registry and the potential increase in buyer exposure that this could bring.

The step was announced in a Markit press release, saying that the deal would bring “credibility and confidence... growth... increasing choice... operational efficiency... (and) transparency” (Markit Financial Information Services 2010). The ideas of credibility and transparency lauded by Markit are worth examination. The idea of more transparency is one of the central issues in discussions of regulating market practices in commodity markets in ways that might encourage more socially just, ethical or economically sustainable practices. Others commonly include only using exchanges (and registries) rather than Over-The-Counter sales, regulating who can access a market to avoid speculation, and limits to buyer, intermediary or seller monopolies (Maystre 2012). The Gold Standard rules oblige the first, but not the last two. The registries are programmed to alert someone (in The Gold Standard case, The Gold Standard registry manager) if the same credits appear in more than one place, or disappear altogether. Neither the Markit registry nor the Gold Standard registry give the public (or other market participants) automatic access to information about the price others have paid for credits, who holds particular credits or how many credits an organisation or individual hold. Thus the transparency that is offered is not visibility, but recognition that someone (or something) somewhere is monitoring transactions.

Furthermore, although parties have to register on The Gold Standard registry to be allowed to trade Gold Standard certified offsets, it was possible to make buyer accounts private so that other registry users or the public could not identify who held an account. This possibility came pre-installed in the APX registry software, it was not a proactive choice of The Standard, and it had rarely been activated by account holders. In a staff training day, one staff member pointed out that the feature was not transparent and potentially facilitated speculative market behaviours – something they personally thought The Gold Standard should not be encouraging. They suggested changing the

rules on The Gold Standard registry software. However, changing this feature was only possible for the infrastructure provider to do because it was built into the software. Some staff thought that it might be a good idea to exclude the option from the new version of the registry software due for installation in 2012, but one also remarked: “our position is to try not to get involved, to remain neutral.” This position was confirmed as official on The Gold Standard website in late 2012. There were media reports that inexperienced investors were being misinformed about the possibilities of using carbon markets for speculation, or mis-sold carbon credits as investment opportunities. The wording of The Standard response was careful not to argue that secondary trading in or speculating on offsets was inherently inappropriate: “Investing in carbon credits is more complex than a traditional investment, making the opportunity more difficult for individual investors to evaluate.” The Standard position was given as a recommendation, rather than a condemnation of any legal (but potentially speculative trading) behaviour: “The Gold Standard Foundation recommends that purchasers of its credits retire them in order to reduce their carbon footprint” (The Gold Standard Foundation 2012a).

The registry did allow some control over who could buy or trade credits but it was designed to reduce the possibilities for criminal activities rather than to avoid speculation in the market. On The Gold Standard registry, buyer accounts cost US\$500 and the individual must provide information about who they work for to allow for identity verification by The Standard before being allowed to trade. By 2012, this was normal practice for carbon registries, and known in the industry as Know-Your-Customer requirements (Peters-Stanley & Hamilton 2012, p.34). I observed the relevance of this information in one situation at The Gold Standard. The registry manager received an email notifying them that a re-seller organisation had fired someone for fraud. The email was to change the passwords so that the individual could no longer access their former company's account, and notify The Standard to be wary of the individual and a fake company name they had been found to be using. The registry manager checked that the sham company was not registered to trade Gold Standard credits and that the individual's email was not on any other accounts.

In summary, due to the EU carbon trading scandals and the expansion to a second registry, there were discussions about the roles and responsibilities of The Gold

Standard in relation to market transactions and the registry in 2010-11. These made it clear that The Standard remit was taken-for-granted to include the provision of software to track credits beyond their issuance by The Standard. Monitoring trades in Gold Standard credits, however, did not invoke discussions of SD, or the need for detailed scrutiny of the activities of traders against a set of criteria (beyond checking their legality) in the way that producers had to undergo in order to be deemed worthy of The Gold Standard label. The emphasis was entirely on monitoring the transactions of credits for their legality, not scrutinising their potential for SD improvements.

7.3 The consumption of Gold Standard credits

The site of consumption is a particular “site of calculation” (Latour 1999) in the case of offsets because offsetting is an inherently two-sided calculative activity: something being not-done as a precise, measured equivalent of something being done. All of the effort of measurement and monitoring that went into determining exactly how much GHG emissions were reduced at a project site was for the purpose of selling a consumer a conservative estimate that would exactly meet their own calculated GHG emissions. In offset market terminology, the consumption of an offset is when it is retired. At this point, the serial number of the particular tonne was recorded on The Gold Standard registry as being inadmissible for further transactions. Anyone could buy offsets and retire them with no obligation to pollute the equivalent amount. In these cases they are purchasing a carbon offset, but they are not actually offsetting. However in the majority of cases, the consumer of an offset has made the purchase to counteract emissions that they have or will cause. Therefore, some sort of calculation must be done by end-buyers to ascertain how many offsets they need to purchase.

Gold Standard credit buyers were both CDM compliance buyers and voluntary buyers, as The Standard certified both types of credit. As a consequence, some of their buyers were subject to a set of (CDM) rules when it came to calculating their emissions, but others – the voluntary buyers – were not automatically subject to any requirements about how they undertook their GHG emissions accounting. Furthermore, neither type of buyer was required by The Standard or CDM to demonstrate any commitment or practices related to SD. The following two sections explain the calculating activities of end-buyers, showing how they differed under CDM rules and for voluntary offsetters.

7.3.1 Compliance offset buyers

As was described in Chapter 4, The Gold Standard took its mandate directly from the rules of the CDM, looking for credible GHG emissions reductions *and* SD benefits from offset projects. However, in the case of scrutinising consumers, The Standard did not take its cues from Kyoto Protocol rules. CDM compliance offset buyers were subject national and international regulation to measure their emissions. The methods and frequency of their emissions measurements were verified by third party auditors, with documentation passed on to national authorities. Each national government submitted an annual report to the UNFCCC for scrutiny by Expert Review Teams (ERT). The ERT examined the annual GHG inventory from each capped country, investigating: “qualitative and qualitative information, such as a description of methodologies used, emission factors, activity data and emission trends and analysis thereof, uncertainties, quality assurance and quality control.” (European Commission 2007, p.10). The ERT review reports are publicly accessible. Every 4-5 years each country also had to submit an in-depth report which included more descriptive detail on their registry arrangements.

Whether or not these rules over third party scrutiny of emissions were uniformly and successfully implemented on the ground – and there are signs that they were not (Neslen 2012) – it is relevant that the procedures were codified in detail in UNFCCC documentation and national regulation. This made them similar to the processes for offset production in the level of detail and scrutiny in notable ways. Measurements and calculations were undertaken by the consumer/credit holder, then verified by auditors, then passed on to authorities who confirmed whether the measurement and auditing were properly undertaken, releasing publicly available documents that described and confirmed the veracity of calculations. The point at which UN officials were involved in the process differed on the side of offset buyers compared to offset producers. While UNFCCC scrutiny of offset producers was done on a project-by-project basis, their scrutiny of allowances and emissions by producers was conducted at the aggregate national level. However, for both parties (offset producers and offset consumers), their calculations of GHG emissions were subject to audit, monitoring and reporting.

7.4 Voluntary market buyer calculations

In contrast, there was no regulation to determine how voluntary offset consumers should calculate their activities in order to determine the quantity of carbon offsets they should buy. Furthermore, many organisations that voluntarily offset choose to do so for only part of their emissions, for example staff travel in the case of Nokia, or related to the lifecycle of particular projects at Panasonic (The Gold Standard Foundation 2011d). This is unlike CDM compliance offsetters, who had to calculate their emissions for all parts of their commercial activities and hold enough allowances for the total.

There are numerous organisations that look to advise and assist voluntary offsetters in calculating their emissions. Some are designed to help companies manage their total emissions, looking for ways to reduce or avoid emissions as well as calculating offset purchases (WWF n.d.). Another project set up by WWF (but with no formal links to The Gold Standard) looks for high profile companies (including Coca Cola, Nike and IBM) to form a “global leadership platform” towards a low-carbon economy by undergoing independent carbon audits and setting public goals and reporting for emissions reductions, allowing them to take the title of Climate Saver. Alternatively, carbon calculators estimate emissions from specific activities without scrutinising the total emissions of the organisation. They are often provided by offset traders, brokers or developers on their websites (Dhanda & Hartman 2011; Lovell et al. 2009) (see figure 7.1).

Figure 7.1: Screenshot from The Carbon Fund website

1 Select an Emission Source

- ☒ Office Emissions
- ☐ Fleet
- ☐ Business Travel
- ☐ Employee Commute
- ☐ Events
- ☐ Paper
- ☐ Shipping
- ☐ Small Business 20 or Fewer Emp

2 Calculate

First, let's take a look at your building and office space. Just fill in the boxes below. You may skip any stage.

Office Emissions Calculator

Business Name

State (abbr) or Zip (5 digit)

How would you like to calculate?

☒ Utility bills ☐ # of employees ☐ Office Space (SqFt)

--- Do you have servers? ---

☐ Yes we do ☐ No we don't

Your Office Footprint (tonnes CO₂): 0.00

Cost to Offset: \$0.00

[Select and Next Step](#)

3 Offset your Footprint.

To qualify as a CarbonFree® Partner you must offset at least your Office, Fleet and Travel. Min. \$350 donation.

Shopping List

Emission Source	Tons CO ₂	Offset Cost
Total	0.00	\$0.00

[Offset your Footprint now!](#)

Source: Screenshot Carbonfund.org 2012. "Business calculator."

This example of a carbon calculator comes from a large American NGO that acts as an intermediary and project developer in the carbon market. The flexibility of calculation and quantification is notable, and there is no monitoring or verification involved. Step Two indicates a company can skip any stage and can choose whether to calculate using bill payments, employee numbers or size of office as a metric. It is up to the company or individual to find or estimate the values they input. There are no requirements for conservativeness or considerations of additionality (how might the company have reduced their emissions if they had not offset them, for example). There is no obligation on the company to offset all of their activities (here, including Office, Fleet and Travel is enough to use their trademark CarbonFree®). This, to emphasise, is in stark contrast to the detailed lists of calculations, rules, prescriptions, justifications and monitoring plans that were laid out for producers in the methodologies and matrices described in Chapters 4, 5 and 6.

Carbon emissions accounting has also become a matter for accountants and financial auditors (Ascui & Lovell 2011), with PriceWaterhouseCoopers offering a branded,

verified calculating methodology (The Gold Standard Foundation 2011d). However, there are no internationally recognised, independent schemes to support or scrutinise the calculations of voluntary offset buyers that are comparable to the scale and attention to detail of the voluntary offset standards for offset projects. It is indicative that the annual State of the Voluntary Carbon Market report has never discussed or compared the variety of carbon calculators and other products and services available to buyers to calculate their emissions. They report on “the motivations of buyers voluntarily purchasing carbon offsets” (Peters-Stanley & Hamilton 2012, p.iii), not the multiple ways they undertake their calculations. Finally, none of the voluntary offset standards implicate oversight of consumer calculations.

In fact, the language of the carbon markets in general is indicative of a relative lack of attention to the act of offset consumption. As described, offsets are not usually consumed or used, they are retired. Before retirement, a carbon credit produced by an offset project represents a decrease in emissions that would have otherwise occurred, but it is not offsetting because it has not been associated with any tonne of emissions that has been (or will be) produced. What is interesting is that discursively what is being described in retirement is the relation of the credit to the *market* rather than its consumption by a (specified, identified) consumer and their (calculated, measured) emissions. The notion of retirement is the end of trading for a credit. It is this which merits description in the phrase, rather than calling the action offset use, consumption or some other phrase which draws attention to what the credit is becoming (the equal and opposite saving of emissions from the pollution that has been created) rather than what it no longer is (an item to be traded). What has made offsetting interesting to large parts of the carbon market – demonstrated in the way they talk about it – is that offsets are something that can be traded, rather than something to be consumed.

7.4.1 The Gold Standard and offset consumers

Despite the lack of monitoring, verification or reporting by most voluntary buyers, and the lack of SD considerations on either CDM or voluntary offsetters, The Gold Standard did not get involved in the calculations of offset consumers. Compared to the amount of contact they had with offset producers in 2010-11, they had little with offset consumers. The direct contact The Standard did have with end-buyers was for marketing purposes

rather than technical scrutiny of their calculations.

This lack of interest in monitoring offset consumers is not to say that The Gold Standard had no interaction with credit consumers. Staff responded to regular phone and email requests for information on where and how to buy credits. They spoke at events to promote offsetting, and of course in particular Gold Standard credits. The marketing team did occasional market research, and from 2010 there was a concerted effort to produce marketing materials aimed at consumers, as staff recognised “we sell ourselves to PP [project proponents] but we also need to sell ourselves to buyers.” They expanded the website and produced a small number of press releases with high profile buyers, to demonstrate how different companies were incorporating offsetting into their businesses. The Standard took a limited role to facilitate contact between consumers, intermediaries and projects (which they called carbon matchmaking in their newsletter), introducing a lonely hearts style section for buyers or producers looking to find specific credit types, funding or buyers.

In general though, The Standard interaction with offset consumers was generic and at a distance through marketing, or ad-hoc through contacts. In a rare discussion of consumers during a TAC meeting, members made clear that representing buyer interests or channelling information about consumer demands was not how they understood their role within the organisation:

TAC 1: I think the buyers will tell project developers [what they want], and developers will tell you, that's my experience.

TAC 2: I think regular meetings of governments or whoever should tell us [The Gold Standard] what they [end-buyers] are looking for, but not the tech committee [TAC].

The TAC comments make two things clear. Firstly, they understood the role of the TAC as giving informed opinions on project activities as technical experts, not to channel marketing information and buyer opinions into Standard rule-making. Secondly, buyers (re-sellers or final consumers) were in contact with market intermediaries and project developers, but in their opinion it was best that this happened directly, not via The Standard. The person with “experience” had worked for a project developer that was

also a market intermediary, a common dual role in the voluntary offset market.⁴¹ It was not the case that buyers were kept apart from organisations involved on the producer side of the market. “What they [consumers] want” was being heard by developers in other forums. But with reference to the role of a voluntary standards organisation, consumer demands were not seen as the most pertinent information for The Gold Standard TAC to be considering, and scrutiny of consumer activities (their calculations, or the additionality of their actions) did not enter onto The Gold Standard agenda.

Some of this distance was created and maintained through the technologies in use at The Standard. Given the costs (to start with, US\$500 to open a buyer account, in addition to the time and effort making purchases might require), many companies as well as individuals preferred to use a market intermediary (carbon asset managers, brokers) to conduct their purchases of Gold Standard credits. On The Gold Standard website, potential offset consumers were directed towards these organisations (a mix of profit and not-for-profit) rather than suggesting that they should attempt to buy credits themselves via the registry. The IT staff who worked on the Gold Standard registry commented that as well as the cost involved in getting an account, the design of the software made it complex for buyers. So while the registry checks the trades between buyers of credits, many of those holding buyer accounts would not be buying on their own behalf. The buyers on the registry, were often, although not necessarily, a different group to the consumers of Gold Standard credits.

When a Gold Standard credit was retired, the holder of the registry account was asked to complete a form including naming the Transferee/Honoree/Other and reason for retiring. The form is shown in figure 7.2. At the top it states that “all information below required,” but this was an informatics requirement of the registry software, not part of The Gold Standard rules. The buyer could choose whether the “retirement reason details” were visible to other users of the registry or only to Gold Standard staff. If credits were retired through the Markit registry, The Gold Standard did not receive the reason for retirement details unless they specifically asked for them.

⁴¹ Around a third of the offset suppliers that responded to a survey for the 2012 Ecosystems Marketplace State of the Voluntary Carbon Market Report (312 in total) identified themselves as project developers and wholesalers/retailers/brokers (Peters-Stanley & Hamilton 2012).

Figure 7.2: Screenshot from retirement page of The Gold Standard registry

Retirement (* all information below required) Climate Friendly Retired Credits - 548

Transferee/Honoree/Other: Climate Friendly Clients (2010)

Retirement Reason Details: * Voluntary emissions o

Email Retirement Notification (list address, separate with ";")

Make Account Name and Transferee/Honoree Public ☒

Submit Cancel

Source: The Gold Standard Registry (staff access) 2012.

In practice, the information from this form was not always informative. For example, in this screenshot the market intermediary explains that they are retiring on behalf of their “clients (2010),” for the unsurprising reason of “voluntary emissions offsetting.” In more detailed examples, buyers gave the name of a particular department or marketing campaign as well as the name of the consumer company, but not the calculations that led them to decide on their purchasing quantities. For example, a carbon asset manager being more specific than many stated that they retired credits on behalf of The State of Netherlands with the reason “compensatie van dienststreizen” (compensation of mission in Dutch). The lack of detail on this form was not a concern for The Standard because these details were purely informational, they made no claims to monitor or verify consumer data. A staff member explained that “most of the time the account holder/trader puts enough information [in the retirement form] for us to see who is actually buying the credits.” The technologies in use were designed to track the trading of credits, not for the purpose of monitoring offset consumption.

The situation was in some ways similar at Plan Vivo. They also often but not always knew end-buyers who bought their credits through re-sellers, “either through the registry public view or more often just because we communicate with the reseller and they tell us” (Governance and Operations Director, personal correspondence 2013). There was no legal obligation on re-sellers (or technical requirement within the technologies of the Markit registry) to disclose end-buyer details. Plan Vivo were

interested in knowing about buyer identities in order to advise projects on marketing, rather than conduct any auditing or verification. In contrast to The Gold Standard, Plan Vivo had a Code of Good Practice for re-sellers that asked them to “Promote ‘carbon offsetting’ as one of several measures to mitigate climate change, with priority attributed to actions which reduce emissions at source” (Plan Vivo Foundation 2011b, p.4). Thus they gave more of an opinion on the conduct on their re-sellers and end buyers. However, to purchase Plan Vivo credits there were no requirements to demonstrate how the decision to purchase had been made, and the Code was only voluntary; re-sellers could trade in Plan Vivo credits without signing up to the Code.

In contrast, the Plan Vivo website encouraged potential offset consumers to contact projects directly, as well as directing them towards market intermediaries. If buyers purchased from projects the transaction was still recorded through a registry. Plan Vivo only used Markit, they had no internally managed registry software. This direct contact between projects and potential buyers implicates a certain level of work from the projects themselves in terms of technologies (emails, computers, telephones) staff and their expertise (to be able to answer questions and conduct business, most likely in English). However, it was presented as part of the Plan Vivo approach mentioned in Chapter 4 of supporting profits going to communities rather than Western intermediaries (be they project developers or re-sellers). It was also a reflection of technological lock-in: being later than The Gold Standard to adopt a registry, they had chosen a user friendly registry software from Markit which had developed as a multi-standard system without Plan Vivo paying all of the costs of software development.

Nevertheless, despite the possibility to bypass market intermediaries being made explicit on the Plan Vivo website, it was also possible to re-sell Plan Vivo credits and there was no legal obligation on buyers in either registry or from either standard to disclose on whose behalf they were trading. Entities were free to re-sell credits as they saw fit and neither standard put a limit on the number of times a credit could be re-sold.

7.5 The remit of The Standard

The Gold Standard relationship to end-buyers is not strange. The lack of Standard

intervention on the consumer side of the market is to be expected from the literature on voluntary standards (Cashore et al. 2004; Fridell 2006). As the Chair of the Gold Standard Board put it: “It’s very important for a standard developer, who then accredits certain projects, to know its limits, and to operate in a very transparent way within those limits” (Interview 7, 2011).

For the staff member quoted in the introduction with concerns further along the lifecycle of a credit, the limits of The Standard's activities were clear. As they phrased it: “we must be careful about what we are promising.” Their input into marketing strategy meetings was to make sure that the representation of The Standard was an accurate description of exactly what The Standard did and did not check and certify. The Standard did not cover matters such as contracts made by projects, whether project financing was ethically sourced, how offsets were traded and the calculations made by end buyers. The phrase selected to promote The Standard for their marketing development in 2011 was precise in its description of what part of the credit lifecycle The Standard were making SD assurances about: “the only standard to measure, monitor and verify sustainable development criteria in all projects throughout the crediting lifetime of the project” (The Gold Standard Foundation 2011a, emphasis added).

While the organisational focus was on ensuring that the marketing demonstrated the benefits of The Standard most accurately and to its best advantage, it was apparent that for the Technical Director the idea of The Standard potentially getting involved in these other stages of offsetting was something that they could envisage: “Offsetting isn’t just about [the] quality of project activities. There is a quality all along the chain that should be considered.” When asked about the matter directly in an interview, they were clear that for them, The Standard could have a role to play:

From origination and retirement of a credit... or from over the lifetime of an activity... We should discuss and be involved in the best practice from beginning to end. Because otherwise, if you have a chain, it's always the weaker... that is problematic... I don't think it's the right way to say Oh it's not our business, let's concentrate on what we know. No, we need to be aware of the whole chain and we need to contribute to improving the whole chain, even if it's not necessarily the specific expertise [of The Gold Standard].

(Interview 14, 2011).

Their vision was not necessarily that The Gold Standard had to undertake this work directly – as they put it The Standard could “discuss and be involved” or “contribute” rather than necessarily managing these processes. However, they were clear that they saw what The Gold Standard certified in offset projects (detailed scrutiny, third party monitoring, and the relevance of SD) as important to apply to other parts of the life cycle of a carbon offset. They were also certain that these other parts of the lifespan of credits were directly relevant to the work and aims of The Gold Standard. They framed the behaviour of consumers as a potential site of intervention for The Standard, not only an unquestioned (or unquestionable) source of demand for Standard credits.

Interviewer: Do you think it [greater scrutiny of the whole chain] will happen? Do you think it's possible?

Technical Director: Yes! Eventually I think not only is it possible but it's necessary. Even if you look at this from a selfish point of view, it's risk mitigation for your own organisation. If you want to remain relevant you have to make sure that the rest of the chain is relevant.

(Interview 14, 2011).

They offered this organisationally self-interested rationale as a secondary support for their arguments to convince others (*even if you...*), but their comments suggest that this was not how they were primarily framing the matter for themselves. Their initial argument had been based on what was “right,² as a way to “contribute to improving the whole chain.” They framed the matter not as something desirable, but as something right and necessary.

When asked in an interview, another staff member at The Gold Standard could also imagine a role for The Standard further down the chain.

I certainly think that GS [Gold Standard] should consider monitoring credits afterwards; where they end up, how they are being used, how they are being exchanged with others... [a] GS Plus where offsetters should also comply with a certain GHG accounting standard. Not just accounting undeliberately [sic] and by their own capacities rather than relying or ensuring that their accounting is in line with the GHG accounting standards.

(Interview 9, 2011).

These criticisms of some buyer practices were focused on the voluntary market, as they made clear by adding: “obviously the compliance market have their own standards for

accounting, which... ensures that certain emission factors are used.” Notably, they did not identify a need for improvement of the CDM consumer calculation rules in the same way as The Gold Standard is a more restrictive (SD) version of the CDM rules for projects. Their critique was of GHG emissions calculations methods, not of the sustainability of consumer business practices. Nevertheless, they framed consumer behaviour as a plausible site of The Standard intervention through its detailed, technical approach.

7.5.1 Not our business

However, by mid-2013 The Standard had not made any public announcements on preferred carbon calculators. Since 2010-11 The Standard has extended its scope of offset projects (composting and AFOLU) and beyond offsetting, discussing both water benefits crediting and integrating CO₂ reductions crediting into other types of SD standards (Fairtrade and wood/paper products). The Standard has been willing to extend its remit into other markets, but they have not shifted their work focus to other parts of the offset chain.⁴²

When I asked the CEO directly in 2011 about the role of The Gold Standard in influencing carbon markets, he suggested that The Gold Standard had a “vested interest” in how consumers calculate, but that was outside the “core business” of a voluntary offset standard – something he had confirmed with VCS:

This is something David Antonioli [the CEO of VCS] and I have spoken about. We don't want to prescribe how people should do their offset calculations for example, it's neither our nor their core business, but we have a vested interest in it being done in a robust way... because if someone suddenly decides that everyone's been doing crap calculations, then everyone suffers.

(Interview 10, 2011).

For the CEO, he could imagine their core business expanding within carbon markets to include more tools for producers (in finding finance, enhancing projects, speeding up credit delivery) and government lobbying to ensure Gold Standard acceptance in future

⁴² Into composting as a project type in 2011, and most significantly in October 2012 with the takeover of CarbonFix standard who certify AFOLU voluntary offsets. At the end of 2012 they ran a joint side event at the UNFCCC meeting 2012 with FSC (wood and paper certification) and the Fairtrade Foundation to announce the potential for integrated carbon/other standard labelling, and a separate press release on the potential of water benefit credits.

regional markets. He could also imagine acting outside of carbon: “Ultimately what we're about... is the delivery of sustainable development benefits through a market mechanism” (for example, the inclusion of water credits). However, a move into the consumer side of the market was not on his agenda.

7.6 Not assembling offsetting

As noted above, during daily life at The Standard, I only observed consumers discussed as recipients of marketing messages rather than sites of scrutinisable calculation (apart from by the Technical Director). As a consequence, the data below on Standard interventions in consumption activities was collected in interviews.⁴³

For the Technical Director, consumer calculations and the whole rest of “the chain” were linked into the assemblage of The Gold Standard with cognitive legitimacy; it was necessary and right that they be dealt with, whether that was directly through an expansion in Standard activities or through support and collaboration with others. For another staff member, they saw consumer calculations as something that would be desirable to take a stance on, implicating the possibility of assessing the consumers themselves as “GS plus” offsetters, not just encouraging the use of more conservative calculators. The CEO saw that it would be possible for The Standard to intervene, but that it was not a priority for The Standard. In his view they did not want to intervene (not that they should not or could not) because it was outside what he framed as their core business.

In the data described below, interviewees found different ways of rationalising why consumer activities and calculations were *not* the concerns of The Standard. Mirroring the way previous chapters have described variations in how actors have been included into assemblages, there were observed differences in the ways in which these actors (consumers, and their calculations) were left out. In previous chapters, links that connected actors to be part of an assemblage were described as alternately taken-for-granted, desirable or possible, using the language of Suchman's typology of legitimacy. Here, the same categories can be used to describe and differentiate different ways that

⁴³ See section 3.6 and Annex 3 on altering the interview prompts.

actors were framed either inside or outside the assemblage of The Gold Standard. Figure 7.3 lays out more clearly the vocabulary in use, showing how activities could be cognitively, morally or pragmatically legitimate inside *or* outside the assemblage.

Figure 7.3: Suchman's typology of legitimacy extended vocabulary

	Cognitive legitimacy	Moral legitimacy	Pragmatic legitimacy
Link/assembled	Taken-for-granted	Desirable	Possible
Space/not-assembled	Irrelevant	Inappropriate	Impractical

7.6.1 Outside The Gold Standard assemblage

Comments from three interviewees indicated that The Standard intervening further along the lifetime of a credit was not something they had considered until they were asked about the matter in the interview. This was not because these individuals did not think about buyers as part of their work: two had held positions within The Standard where marketing to and interacting with buyers had been part of their remit. All thought that there was a responsibility for The Standard to make sure there was no illegality in market transactions (in line with what the registry already oversees). Beyond that, for one respondent consumers and their calculations were taken-for-granted to be *outside* the assemblage of The Gold Standard. They did not mention consumers at all when asked about extending the remit to deal with other parts of a credit lifecycle, saying “Design the rules about what’s eligible, and then there’s almost not that much more that you can do” (Interview 3, 2011). For another respondent, they could not see what role The Standard would play in “the buying and selling of those things” and did not mention consumers or their calculations as potential areas where The Standard could be involved, except in providing information about producers to consumers to allow them to take their choices:

Leave the market to the rest. Check of course that there’s not fraud and theft and anything like that, but... I wouldn’t see Gold Standard as an important player in the rest of the transactions, because then it’s just buying and selling those things [offsets].

(Interview 6, 2011).

They went on to discuss the possibilities of developments in carbon markets to integrate calculations of product emissions over their lifecycles (in their example, the CO₂ emissions of cars to include manufacturing, use and end-of-life costs). However, this expansion of calculation retained a focus on the processes of consumption rather than the decision to consume, which was left in the hands of (implicitly unscrutinised) individuals. They stated: “we are only going to get to a low carbon economy, like they like to say, if we affect the customer. The customer, the final client, has to decide what is he going to buy.” This decision was something that The Standard was implied to inform, rather than potentially something it could scrutinise and make the subject of standards.

Another interviewee also interpreted the suggestion of scrutiny further along the chain in the lifecycle of a credit as referring to The Standard helping to stop fraud by traders (Interview 11, 2011). Later in the interview, they brought up the idea that offsetting was only one part of consumer activities, saying “the thing about offsetting is that a company shouldn't just be offsetting.” But how the decision to purchase offsets might be made (in contrast to reducing emissions) was not something that they could imagine The Standard being involved in. For them, The Gold Standard had a focus on certification: “Everything we can do and work around is around our certification.” To them, this meant a focus on producers rather than consumers. None of these respondents identified consumer decisions as locations where The Standard's technical detail, scrutiny and SD mandate could or should be applied. In their responses, what they took-for-granted about the role of a standard was not explicitly argued, but it was clear that it did not involve scrutinising or questioning the act of consumption.

For other respondents, the question about The Standard expanding its scope to have more authority over the lifetime of a credit did bring to mind the calculations of end-buyers. However, it was justified to be the incorrect course of action for an intriguing mixture of pragmatic, cognitive and moral reasons. Where the Technical Director had seen scrutiny of consumer calculations as “not only possible but necessary” (by someone, if not by The Standard), the Chair of the TAC saw it as irrelevant, inappropriate *and* impractical for The Standard to take a view on consumer activities. In perhaps a telling difference, they saw buyers and producers on two sides of the market

rather than an image of interlinking chains, or flowing streams. They were adamant that it was not necessary for The Standard to get involved:

I don't think that The Gold Standard should be on that side [buyer side] of the market... I guess The Gold Standard doesn't have the skill set in its organisation to be able to do it... it would have to fundamentally change what the organisation is and how it works... I question as to there is any real value to it, what would The Gold Standard gain by doing that?

(Interview 5, 2011).

From their perspective there was a binary boundary producer/consumer, seller/buyer that The Gold Standard had no need to cross. With the core skill set at the organisation one of expertise in project scrutiny, it was perhaps true that consumer scrutiny would have been a stretch for the current team. However, one could argue that the extension to registry oversight of credit transactions had also been outside the skill set of Gold Standard staff – hence contracting the registry software from another company. Where the TAC Chair could not see “any real value,” the Technical Director had made a direct link to the organisational mandate to contribute to best practice in offsetting, as well as a self-interested position of risk reduction.

The TAC Chair's response also gave other rationales for why measurement or certification of consumers should not or could not happen. They had understood the suggestion to look downstream in the life of credits to mean judging who could or could not be a buyer of Gold Standard credits, asking for clarification on the question with the phrase, they said: “So The Gold Standard would say that Exxon can't offset using GS [Gold Standard credits]. Or you can't offset your Hummer [highly polluting vehicle] using GS [credits]?” This was not a suggestion they were keen on. For them:

It implies making some kind of judgement on the buyer, and [whether] this buyer a CSR [Corporate Social Responsibility] company or not. And if it is, does that mean we can sell it to them? Or if they're not but they're trying to do better, does that mean that we can? Or are they weapons manufacturers? Well, maybe we don't want to sell it to them! But maybe they own 5% of a company that does radar systems that also include missile interception systems or something like that? There's no one in GS who has the ability to make those judgements. I'm not sure if there's anyone globally who has the ability to make those judgements.

(Interview 5, 2011).

The reasoning against this idea is given on the grounds of impracticality: “there's no one

in GS who has the ability to make those judgements.” The situations that were foreseen were overly complex for “anyone globally,” perhaps, to be able to determine. But arguably, the difficult decisions they invoke are not so far from what voluntary offset standards do on the producer side. As described in Chapter 4, Plan Vivo differentiates in terms of business model to only allow certain types of producers (non-profit developers, community or smallholder owned land) into the offset market – not so far from putting CSR requirements on consumers. The example in Chapter 6 (section 6.2) of changes to the percentages of non-biomass showed how The Gold Standard rules for producers already entailed grappling with situations of differentiation between those who were “trying to do better” and those who were judged not to be interested in transitions towards SD.

Furthermore, the same respondent had previously advocated for some fairly similar judgement of companies by The Standard but in a different context, even using one of the same examples. During a meeting considering potential partnerships for publicity through fundraising ventures or new NGO supporters, they had raised concerns about who the organisation might partner with, and suggested caution in selecting companies:

They are going to use The Gold Standard name in every press release, so we need to be comfortable with them. WWF [are] good, Exxon not so good, and [a] huge [number] in between that we need to assess.

Of course, the scale of the endeavour was different if it meant running checks on every single buyer rather than a few potential business partners. But it was not the scale that they had objected to on the buyer side. What had been plausible to consider in regards to collaborations was being framed as probably impossible for “anyone globally” when it came to buyers. For this respondent, it appeared to be the difference between a partner and a buyer that made such an activity unreasonable or impossible to undertake, not the difficulty of the task. Furthermore, when they suggested it in relation to business collaborations, the verb used had been assessment. When something presumably similar was invoked in relation to buyers, it became a judgement. Judging is the subjective activity of forming an opinion, compared to assessment, which is a calculative estimation of evaluation. Where evaluating and differentiating the behaviours of producers (or business partners) can come within the technical remit of The Standard,

the same behaviour towards consumers puts them on the tricky, subjective ground of being seen to judge, and this fell outside the remit that they imagined for The Gold Standard. The TAC Chair finished their response by identifying firmly where they saw the role of The Standard to be: “the whole organisation is not set up to work on the buyer side. It assumes the buyer side as a given... I don't think that GS should be tooling around with the buyer side” (Interview 5, 2011).

7.7 Moral arguments

Four other interviewees also responded to the suggestion of being more involved on the buyer side with a sense that it was inappropriate (rather than simply impractical, or irrelevant) for a standard to do so. One staff member did see the possibility for The Standard to have developed or supported a carbon calculator, but only to suggest for voluntary use, not as an obligation on Gold Standard offset buyers:

There's a whole range of carbon calculators and a lot of them are not conservative. So you're offsetting but you're not offsetting what you really should be offsetting, for example... [developing] that [already] would have lent more credibility to the market and to ourselves [The Gold Standard].

(Interview 12, 2011).

Assumed – given the types of carbon calculators that are on offer for voluntary consumers – is that these calculations will relate only to the GHG emissions being produced, not to any potential SD benefits or failings that could be implicated in the different sites at which a company might be responsible for emissions. This respondent thought that individual Standard staff members should be role models, and demonstrate through their actions what should be done beyond offsetting, for example in using public transport, bicycles or less polluting types of cars. In contrast, when they thought about The Standard as an organisation, telling consumers that they should be doing things differently seemed like “preaching.”

I don't know if Gold Standard could be an advocate for a less consumptive [sic] lifestyle or if we should even be in that realm of preaching or not. I'm not sure how that would be taken by the market.

(Interview 12, 2011).

Similarly, the Chair of the Board found it moralistic to suggest scrutinising buyers and their decision-making or calculations.

[The Standard] doesn't look at where the credits go [after issuance], so not all credits from GS need to be retired right away, that's not the point of the carbon market. No, I don't think The Gold Standard – Gold Standard tries to influence that market by [being the] best benchmark. But it doesn't have to be holier than whatever.

(Interview 7, 2011).

As quoted in Chapter 6, during an internal meeting the CEO had also once said that he did not want to appear pious when promoting The Standard to consumers. Where The Standard claimed to know the best, highest quality way to produce offsets, staff did not feel they make claims about whether or how offsets should be consumed. This is compatible with the marketing of The Standard in relation to SD described in the previous chapter. Their position was to offer a more desirable choice for consumers rather than to impose a judgement on what consumers should be looking for from their carbon offset. Another respondent also stated clearly that for them, consumer activities were inappropriate locations of scrutiny for The Standard:

I don't think it's our [The Gold Standard's] place to tell people what they should do with our credits afterwards... Following issuance, you want the markets to work on their own, because that will help determine the premium for the credit. But that's my free market political philosophy. I just don't think it's our place.

(Interview 13, 2011).

The starting point of a philosophy that the market should be left to “work on its own” seemed out of cadence with the work of a standard organisation set up by NGOs to judge between projects and promote SD – arguably, to interfere with the market on the producer end. But the same respondent described the current work of The Standard as “entrepreneurial” rather than invasive, a “tool” to “raise the bar” of the market in offset production, not as an intervention. However, similar activities to differentiate between consumers appeared to the respondent as substantively different, and to their mind, inappropriate. They were the only respondent to identify a connection between a political philosophy and their view on the appropriate role for a voluntary standard.

7.7.1 The limits to being a standard

It was interesting that within the range of reasons given for The Standard not to get involved in consumer activities, none of the respondents justified their argument by

saying that it might reduce Standard sales. One was uneasy about “how it would be taken by the market,” in general, but this was not specified as the responses of individual consumers who might look elsewhere. It was also not necessarily a reflection of satisfaction with offset buyer (and non-buyer) behaviours – a sense that The Standard did not need to intervene. The person who had worried about how the markets might respond to Gold Standard interventions was deeply concerned about the lack of buyer action on other fronts:

I think it's really easy for people to say I'm going to offset with the best standard – which is Gold Standard – and then I've done my part. And I don't think that is enough, to be honest, if we want to tackle climate change.

(Interview 12, 2011).

Similarly, for the respondent who had thought of potential interventions by The Standard further down the chain only in terms of stopping fraud:

The thing about offsetting is that a company shouldn't just be offsetting... that's how it should work, that's how offsetting should be used... there are not enough companies that are even looking at their carbon footprint at the moment.

(Interview 11, 2011).

And for the TAC Chair, who thought it was impractical and impossible to “judge” companies:

At some level you have to stand back and say wait a minute, why are we trying to reform this thing [offset markets]? What we need is a fundamental change... [but] there's just too many interests in the status quo... King Coal, and banks and oil industry and so on... So I think reform is the only option.

(Interview 5, 2011).

Although they had all responded that The Gold Standard should not or could not get involved in monitoring, improving or certifying consumption, this was not because all of these interviewees were satisfied with the norm on offsetter (or wider business) behaviour and global responses to climate change.

Furthermore, none of their responses suggested that intervening on the buyer side was against the specific mandate of The Gold Standard. Being preachy or moralistic were general criticisms of judging buyers, rather than specifically related back to The Gold

Standard and its mandate. Similarly, the comment that it was “not our place” was not specific to The Gold Standard, but in general to a sense that markets should be left “to work on their own.” The CEO suggested that buyer calculations were outside the core business of The Standard, but he also mentioned agreement from VCS on this point. Intervening on the buyer side was outside the core business not just of The Gold Standard, but, in their eyes, of *being a standard*. To this extent, the attitudes of many of the respondents were what the critical literature on voluntary standards rejects about standards as a form of governance: that they are unable or unwilling to challenge the act of consumption, and satisfactorily resolve the “ethical (and practical) dilemma... [of] basing social and environmental change on consumer choice” (Goodman 2004, p.909).

On the other hand, the evidence presented has shown how in its day-to-day practices, The Gold Standard was or for some could be involved beyond the tacitly expressed agreements on the limits to voluntary standard action. Taking responsibility for the legality of trading behaviours is beyond the typical remit of a voluntary standard. Most standards concerned with certifying the conditions of production have had little to say about the chains of buying and selling in which their commodities enter (Fridell 2009). Although, as has been described, the registry oversight of market trading did not implicate the SD mandate of The Standard or monitoring and detailed granular scrutiny with multiple third parties and measurements in the same way as at project sites, by 2010-11 it had still become taken-for-granted by staff and the Board that The Standard had a legally implicating function in monitoring the transaction of credits. Plan Vivo went slightly further and advocated certain end-buyer practices to prioritise emissions reduction over offset consumption, but these were suggestions, not requirements, and they implicated none of the taken-for-granted monitoring or verification from the standard organisation.

Furthermore, two staff at The Gold Standard *could* imagine involvement for The Standard to differentiate between consumers, to assess (or judge) their practices of calculation and decision-making. They could see this as within the remit of being a standard because for them, the work of The Gold Standard was “to contribute to improving the whole chain [of offsetting].” The Technical Director could imagine the procedures, rules, techniques and requirements of The Standard still functioning and

contributing in different contexts within the patchwork of compliance and voluntary markets that were developing in 2010-11.

I advocate for Gold Standard to be involved in non-purely market mechanisms as well, so it can contribute... We don't necessarily need a unit that will eventually be traded and go from one hand to another... We look at best practice, and how you implement best practice, stakeholder consultation, SD monitoring and evaluation.

(Interview 14, 2011).

This description matches the description given in Chapter 4 of the work of a voluntary standard: focused on technical detail and supporting others to engage in their processes. They saw the a standard is a filter, a set of principles and expertise. For the RM who could imagine GS plus consumers, they understood a fundamental part of The Standard's role as sharing their knowledge:

Ensuring that such international know-how, knowledge enters those countries where it's most needed. So I think so long as GS is also building on the capacities of local NGO, local experts, that would have a kind of snowball effect in the long run, where the standards will be higher and higher... We have RM so we can directly interact with stakeholders and share our knowledge.

(Interview 9, 2011).

This seems like a radically different notion to what a standard is – it no longer requires a commodity or a market. It is the application of granularity, auditing, and their on the ground expertise with no automatic cut-off created by the market-based mechanisms within which the standards work. The process of creating an arena of expertise at the same time as constructing claims to be expert (Jasanoff 2003) is visible in the difference between the comments of those who saw buyer activities as part of a chain compared to those who saw it on the other side of a binary divide. Pertinently, those who connected buyer activities to their own work saw a relationship between the carbon produced at the site of buyer calculations and those produced by offset producers, potentially including SD. However, most of the staff did not such a similarity in the carbon being counted at these different locations in the chain of offsetting.

7.8 Conclusion

This chapter has explored the lifecycle of an offset credit as a way of examining what is included and left out of the assembling of offsetting at a voluntary offset standard. The

summation of this data is a description of a standard that remains strongly focused on the producer side – within the typical remit of a voluntary standard, with contact to buyers driven by attempts to increase their consumption of Gold Standard credits rather than challenge their need to or methods of consuming.

However, looking in detail at the everyday work of The Gold Standard demonstrated how the definition of what it meant to be a standard had been stretched to cover monitoring transactions of credits. When registries were first being developed in voluntary offset markets in 2007-8 it was not obvious that standards organisations would be the responsible parties for registries. The technologies and practices required are not the same as for the work of checking and monitoring projects, requiring the contracting of other companies to set up and run registry software. Nevertheless, by 2010-11 Standard staff and Board members took their obligation to provide registry oversight for granted as part of their role as a standard in the voluntary offset market. As other voluntary standards have taken on similar positions, providing monitoring and assurances against trading fraud has become constructed as part of the definition of what it means to be a voluntary offset standard.

At the same time, it was observed that this work did not form part of the same intrinsic Gold Standard assemblage of SD, technical details and third party scrutiny of individual parties that was taken-for-granted within their work with producers. Buyers were not expected to uphold any norms beyond the legal minimum, The Standard made no attempt to differentiate between any potentially quality and normal traders or market practices, and preferred to remain neutral on the issue of speculation. Monitoring and registry oversight were taken-for-granted as what it meant to be a voluntary offset standard in general. They were not a way that The Gold Standard in 2010-11 saw to differentiate between consumers by enforcing higher requirements on traders or involve themselves in judging the sustainability of the business practices of end-buyers or resellers in the way that they did for offset producers.

The Standard did not impose any requirements on credit consumers in terms of the calculations of their emissions or potential alternative courses of action (reducing emissions rather than offsetting, for example). This differentiated them from the rules of

the CDM under the Kyoto Protocol, where auditing of buyer calculations was required. Where The Standard had taken on the CDM twin goals of SD benefits and robust GHG calculations at project sites, and mimicked the idea of a registry to guard against fraud in transactions, the interventions on the sites of calculations of consumers was outside the activities of The Standard.

Whilst consumers were incorporated into Standard activities as the recipients of marketing, one staff member also identified end-buyers as sites of potential Standard scrutiny. Exploring how they and other interviewees identified and justified how The Standard should be involved in consumer calculations suggested differences in their desired role for The Gold Standard and the meaning of being a standard. For some involved in The Standard, consumer activities were impractical to consider on matters of cost or the quagmire of judging companies. For others, consumer calculations were not even on the agenda of The Standard. A third group were identified with responses that insinuated that consumer activities were in some way inappropriate for The Standard to approach.

Within these justifications for not including consumer calculations in the assemblage of what must be (or could be) scrutinised by The Standard, a tacit definition of what it meant to be a standard emerged. For the majority of interviewees, this meant not intervening on the buyer side – whether with the incorporation of SD commitments or GHG emissions calculations scrutiny. But for the Technical Director, and to extent one of the RMs, being a standard was about contributing expertise and best practice (understood as technical requirements, methods of measurement and monitoring, applicable to GHG reductions and SD benefits) to any part of the chain, and even irrespective of the existence of a market.

The following chapter draws together these findings with those presented in the preceding chapters to discuss what was assembled as inside and outside the daily work of The Gold Standard, offering insights on the work of voluntary standards and the practices and multiplicities of offsets and carbon.

Chapter 8: Discussion

8.1 Introduction

In order to understand more about “the complex social life of carbon” (Paterson & Strippel 2012) this research took the offices of voluntary carbon offset standards as ethnographic sites. The research adds to new carbon economy literature by examining a previously unstudied site and engages with both STS and literatures on voluntary standards about the edges of the “technological zones” (Barry 2006). These locations are a constituent component of wider debates, practices and conceptualisations of carbon, and the realisation of activities aimed at avoiding or mitigating climate change.

The previous four chapters have attended to the development and work of The Gold Standard, and to a lesser extent Plan Vivo, in order to understand what offsetting as a concept and commodity includes and excludes when it is articulated through the work of voluntary social and environmental standards, and what standards make relevant or desirable about offsetting in their daily practices. The detailed ethnographic approach taken to the study offers insight into to what is controlled, maintained and measured when we talk about carbon through the filters of markets and standards, and what is allowed to escape or disappear. This discussion first summarises the findings presented in the previous four chapters to respond to the research questions in Chapter Two and reiterated below. This is followed by an exploration of the contribution of the research to academic debates in this area. Drawing the answers to the four research questions together provides insight into offsetting and voluntary standards and supports reflection on the current natures of carbon. The final two sections of this chapter reflect on the theoretical adequacy of the framework of post-ANT and Suchman's typology of legitimacy that were developed in this empirical case. Finally two recommendations oriented towards those who work in voluntary carbon offset standards and those who may work with them in the creation of carbon are presented as outputs from this project.

8.2 Research Questions

The research questions identified for this project were:

1. What is a voluntary offset standard and what work does it do? (Chapter 4)
2. What does The Gold Standard's work take-for-granted about offsetting? (Chapter 5)
3. How is sustainable development assembled by The Gold Standard? How is it assembled into offsetting? (Chapter 6)
4. What is placed beyond the remit (outside the assemblage) of The Gold Standard as a voluntary offset standard? (Chapter 7)

This section summarises the answer to each question in turn, drawing in perspectives from the literature reviewed in Chapter 2. The contributions of these findings to identified debates over voluntary standards, carbon markets and carbon are considered thereafter.

8.2.1 What is a voluntary offset standard and what work does it do?

The location of voluntary standards was identified as a gap in the empirical literature from a new carbon economy perspective and in relation to its significance for those who argue that standards can be influential in the ontological construction of commodities (Webster & Eriksson 2008; Busch 2011). In this case, the commodity in question is carbon – a concept of significance (Bridge 2011; Barry 2012). The two organisations observed were initiated by different constellations of NGOs, governments, industry and academic institutions. Nevertheless, by 2010-11 they had equivalent processes of auditing, producing and checking documentation and in their adherence to rules and procedures identified as the obligatory points of passage in registrations, validations, verifications and issuances. The combinations of these activities made the organisations identifiable as voluntary offset standards, with roles they each developed inside the wider production of offsets and carbon.

In the description of The Gold Standard it was clear that a standard may be conceptualised as a stable and unitary actor. However, using post-ANT descriptions of

contingency and articulation, it can also be perceived in ways that demonstrate the ephemerality of an organisation constantly reproduced within the daily life of its staff (c.f. D.E. Smith 2001). The internal organisation of The Gold Standard existed through the work of small staff groups in many different geographical spaces, joined together through telecommunications networks and a shared mandate. The harmonization of their internal activities (as mentioned in Chapter 6) required explicit work and investment, rather than developing automatically as the result of being a standards organisation. Different rules existed in multiple documents and procedures for different project types, or even within the same project but at different times and in different rule versions. Over the course of The Standard's organisational lifetime, five standard texts were produced, each with adjustments and exceptions to achieve the stabilisation of an overall mandate that incorporated GHG emissions reductions and SD. Thus, being a standard entails an ongoing effort of “tinkering” and adjustments to rules producing evolving and co-existing sets of texts, instructions and practices..

8.2.1.1 Robustness and relationships

Chapter 4 emphasised two features in particular in the daily work of both standards; the central importance of attention to the detail of project activities through documenting, measuring and quantifying and the considerable amount of contact that this required with people and technologies from outside the organisation. For The Gold Standard, it was the former that was highlighted in their descriptions of themselves in their “robust” and “granular” approach. In their advertising both standards made use of their connections to NGOs and their status as non-profit organisations as ways to represent their trustworthiness and identify their independence from financial interests in offsetting (c.f. Shapin 2004). However, at The Gold Standard staff emphasised more frequently their quantification, monitoring and attention to calculative detail in order to gain credibility within carbon markets and their rules weighted auditing oversight more heavily than NGO participation in the certification process.

The Standard “led by example,” and the example they provided was epistemologically determined: carbon in the form of offsetting (including SD) is a measurable, quantifiable activity and commodity. Likewise Plan Vivo produced and monitored the detail of their tech-specs, which Chapter 5 demonstrated also included high levels of

precision and documentation, requirements for audits and a hierarchy of measurement that privileged those external to project sites. At Plan Vivo, their vision of themselves as a resource centre placed more emphasis on the supportive relationship they attempted to maintain with projects. However, the daily work at both standards combined both features. The standards gave projects support and assistance and sought to facilitate project improvement and “bring them [projects] into the family” without experiencing this as a contradiction in their capacity to be independent and credible. Being a standard was at times a matter of supporting projects so that they could achieve the prescriptions of the standards as well as an ex post determination of whether or not the activities of a project met the rules and could be approved.

8.2.1.2 Standards, governments and the CDM

The idea that standards, and the voluntary market as a whole, is merely a “shadow” of government decisions in compliance markets (Lederer 2012) ignores the complex and at times conflicting details of their work and the differences in positions of different state agencies. As identified in Chapter 4, in the cases explored here the standards were in part funded by and acting under the direction of government agencies: they received grants from the German (at The Gold Standard) and UK (at Plan Vivo) governments directly, and, in the case of The Gold Standard, indirectly from European governments via the NGO REEEP. At the same time, the voluntary standards considered here did not simply operate as the long-arms of state agencies. For example, there were situations in which government priorities were not shared by The Standard, and their income sources were diversified beyond state funds.. Governments were only one (albeit a significant) part of the story, influencing but not controlling the activities that both standards undertook. Funding from NGOs and market participants (developers and buyers) via fees and percentages of credit sales also were determinants of standard directions. Even though the liberal environmentalist literature acknowledges that the boundaries between voluntary standards and states are not straightforward in carbon offset markets (Levin et al. 2009), the term “Non-State Driven Mechanisms” continues to be used in this literature as though a clear division could be made. The details of daily practice presented in this project suggest that such nomenclature may not be accurate, and that, as in other areas, its use may hide the complexity of the interrelationships between public, private and charitable money and actors in offset markets (Gulbrandsen 2008;

Boyd & Salzman 2011; Hale & Rogers 2013).

Chapter 4 noted the cross-hatching institutions of the CDM and other voluntary standards as they engaged with and shaped the activities of the standards in ways that were not always intentional on either side. In particular, The Gold Standard relationship to the CDM was not straightforward. They adopted the same mandate but intentionally differed in practices and rules as a way of critiquing CDM procedures and finding a market share (and therefore sources of finance) that was independent of the UN. The suggestion that this relationship was benignly “symbiotic” (Levin et al. 2009) hides some of the tensions inherent in this need for voluntary standards to differentiate themselves in order to maintain economic viability. Although not the primary subject of this thesis, this can be further observed in the shift in carbon markets since 2011 as the CDM faltered and failed. Without the CDM, the assemblage of carbon offset markets has been significantly weakened. The Gold Standard has had to find ways to continue by applying its granularity, robustness and approach to SD in new regulatory spaces. Nevertheless, despite their obvious shakiness, carbon markets have not vanished overnight. An ANT approach, attentive to connections and networks as they are enacted, is able to capture this fragile persistence in a way that may be more difficult for an institutionalist approach focused on intergovernmental relations (c.f. Lederer 2012).

8.2.1.3 Assembling an expert and a site of expertise

Standards became experts as they determined rules to cover what they could know about. This was described in Chapters 4 and 5 as an interactive and iterative process, requiring updates, new versions and clarifications on a regular basis. As Barry (2012, p.327) identifies “transnational forms of knowledge production” are not straightforward to create or maintain. Those who undertook offset projects were consulted and encouraged to suggest changes to the rules that governed them, whether under the CDM (Chapter 5) or a voluntary standard (Chapter 6). The standards had to take decisions about what documentation could capture in the details of project documentation and auditing. Individuals who worked for project developers as well as other agencies active in carbon offsetting (NGOs, governmental organisations) were sought out to participate in the Technical Advisory Committees of both standards. As argued by Mitchell (2002, p.52), the creation of expertise and authority in voluntary standards could be seen as

unfolding as a “hybrid, not an exterior intelligence applied to the world” of carbon offsetting. Thus, in the case of a transition to biomass (Chapter 6), the standard's technical experts could not find a way to know whether an organisation was acting because of a belief in SD. However, they could find out about percentages of fuel used and shifts over time, in a hybrid including non-human as well as human actors. Offset projects, with their bumpy road access and diverse ecosystems went part of the way in shaping how and where standards could be expert.

8.2.2 What does The Gold Standard's work take-for-granted about offsetting?

Auditing and interventions by third parties, codified methodologies, measurement and quantification had previously been identified as important in undertaking offsetting (c.f. Lohmann 2005; Lovell et al. 2009; Bumpus 2011). These activities are not unique to offsetting. They can be seen across modern institutions and practices (Power 1996; Busch 2000; Hatherly et al. 2005; Ascui & Lovell 2011). In particular, they represent the “technological zone” described by Barry (2006) that shares metrology and qualification standards, even though it does not share a geographical space. Chapter 5 described in detail how the non-human actors identified were embedded in the processes of two voluntary standards. The evidence presented in Chapter 5 did not set up a normative argument over the inclusion of practices and technologies into offsetting. Instead, it looked to demonstrate that these parts of what was enacted were taken for granted in the assemblage of offsetting by showing the effort that went into maintaining them within the assemblage of carbon in the site of voluntary standards.

The extent of auditing, methodologies, quantification and measurement and additionality in the enactment of offsetting at both standards produced a version of carbon that was “rendered technical” (Boyd 2010; Li 2007). The sum of producing offsets in this way is a highly complex system of calculation and practice. It required expert technical knowledge to translate project activities into something meaningful (that is, economically valuable) within carbon markets. Carbon was formed from the daily activities of projects, but only through the passage points of multiple measures, quantifications and audits. Through these actors, project activities – cooking, producing

electricity, and growing trees – were recognised by the standards as being offsets and asof producing a case of carbon. The activities of The Gold Standard and Plan Vivo indicated some support but also a contrast to the perspective of standards outlined in the findings of Lovell and Liverman, who previously argued:

Voluntary offset production and consumption involves establishing a direct connection between consumers of offsets and a particular offset project (see Lovell et al. 2009) and this is how credibility is obtained, rather than through complex abstract processes of calculation audit and measurement.

(2010, p.266).

Plan Vivo, with their focus on building relationships and the importance of producer participation, put somewhat less emphasis on the rules and laws of calculation and measurement configured into their offsetting practices. As mentioned in Chapter 7, they encouraged consumers to buy credits directly from projects, producing a short chain of production-consumption. But this was alongside not “rather than” the “complex abstract processes of calculation audit and measurement.” Auditing, measurement and quantification and detailed “tech-specs” were still fundamental within their procedures, even if they were not highlighted as the main sources of brand credibility in their marketing. At The Gold Standard, measurability and quantification were central to their robustness and the granular detail that made them feel useful in carbon markets. My study suggests that auditing, calculation and measurement have become cognitively legitimate in the assemblage of offsetting – both compliance and voluntary – as reflected and maintained in the activities of voluntary standards.

8.2.2.1 The wobbles that demonstrate cognitive legitimacy

As the focus in Chapter 5 on the manipulation of these actors illustrates, the status of these non-human actors as inherent, cognitively legitimate attributes of offsetting was made visible when they were being challenged or undermined by activities of the standards or others. Tinkering could and had to happen, but from a post-ANT perspective this was identified as part of the normal work to maintain an assemblage rather than being viewed as a destabilisation of something that ought to be fixed or stable. There were constant wobbles, complaints and uncertainties resulting from the continuous need to revise and adjust practices. However, these did not result in more

fundamental challenges to the role of measurement, quantification, codifying methodologies, auditing or additionality by those who worked with them every day.

In the practice of carbon offsetting at the site of standards, a separation was maintained between trust in the processes that culminated in the making of an offset and the uncertain and fallible (organisations, technologies, people) actor-assemblages that undertook them. The work of individual auditors was subjected to double and triple-checking, with individual professional accountability instituted and training provided by The Standard for auditors. Standard practices were designed to acknowledge the possibility that auditors were not necessarily robust or reliable. Even so, as a staff member put it in a meeting: “we need them,” and their role in the production of a Gold Standard offset was explained in detail in marketing materials. In offsetting, as in other domains (Porter 1995, Power 1999, Shapin 1995a, Hatherly et al. 2005), it was not clear that auditing, quantification and measurement made trusting any easier. Nevertheless, as Power (1999) points out these practices altered who it was that consumers were expected to trust: standards, and, by proxy, auditors, instead of producers. This shift in trust, articulated through the marketing and rules of standards, was taken for granted across voluntary carbon markets with almost all credits being subject to a standard by 2010.

8.2.2.2 Local acting at a distance

One answer for why these attributes were cognitively legitimate within the assemblage of offsetting found in voluntary standards comes from the ANT perspective on scale and standards (Castree 2002; Higgins & Lerner 2010; Barry 2001). The production of “local” definitions of SD incorporated sites of projects and their human and animal inhabitants, but also the offices of offset developers that potentially stretched the local to include multiple localities around the world. The activities on project sites had to be translated into measures and metrics that could translate to act at a distance. This was not to global levels, but to other local sites: to the offices of a standard. The data that was collected at projects by developers or auditors had to arrive at the offices of the standards in formats (tables, matrices, figures, equations, photographs, scanned evaluation forms) that could be interpreted by standard staff (in appropriate languages) and machines (with the

correct digital file types, all boxes on website forms had to be filled). In this way, individual claims could be transformed into collective knowledge about a project (Shapin 1995a). Standard staff did not visit project sites regularly, so project information had to be translated and transported, folded and assembled across time and space (Murdoch 1998; Collinge 2006) by these human and non-human intermediaries.

8.2.3 How is sustainable development assembled by The Gold Standard? How is it assembled into offsetting?

Taking a lead from one of the debates present around carbon markets and offsetting, this research focused in particular on the relationship between voluntary standards, the assemblage of offsetting and the idea of sustainable development. In contrast to much of the literature on the CDM, The Gold Standard and SD (Gupta et al. 2008; Muller 2008; Drupp 2011; Kollmuss et al. 2008) the aim was not to determine whether or not offsetting – or any particular certified version of it – was successful at including (or excluding) SD into individual offset projects. Instead the purpose was to consider how SD might be variously included and/or excluded in the assemblages of offsetting as a practice, understanding the variability of meanings that could co-exist but then be black-boxed as an offset and ultimately perform their inverted, equivalent relationship to carbon emissions. To achieve this, a post-ANT approach that interpreted offsetting as an assemblage was augmented by the introduction of Suchman's typology of legitimacy. This enabled a differentiation between the assembling described in Chapter 5 (suggested to be cognitively legitimate) and the descriptions of the diverse ways in which SD was assembled within offsetting detailed in Chapter 6. SD at the site of The Gold Standard was identified as different from how SD was enacted by Plan Vivo, although it shared epistemological features, and carbon markets offered a variety of enactments of the relationship between offsetting and SD.

8.2.3.1 Defining SD at The Gold Standard

Academic discussions of SD, both complimentary (Sneddon et al. 2006) and critical (Banerjee 2003) have shown how the term encompasses a substantial diversity of meanings and activities. Despite maintaining the concept as central to their work, The Gold Standard team did not to codify a definition of SD. Nevertheless, The Standard rules and procedures shaped where projects, observers and buyers considered SD as a

relevant topic and how they defined it. The decision at the outset of The Gold Standard to accredit only certain types of projects (renewable energy and energy efficiency) was an attempt to identify and define SD within offsetting, so any changes to the scope of this engagement (e.g. the decision to include composting) had to be made with a definition of SD in mind. In the rules for particular project types the implications of SD had to be determined even if it was not defined. The activities of each applicant had to be placed either inside or outside The Gold Standard's articulation of offsetting and their understanding of SD. The Standard incorporated SD into the activities of offset production, but did not articulate it as a relevant feature of offset transaction or consumption.

As in the tea standards in Tanzania described by Loconto (2010), standardising the same commodity to measures of SD did not necessarily mean producing the same performance of SD in the case of offsetting. There were no requirements at The Gold Standard about profit-sharing or ownership of the means of production. Economic sustainability was defined primarily as providing jobs and training for employees. In contrast, Plan Vivo made business models and profit sharing a fundamental part of their definition of SD. Nonetheless, both standards defined SD as something that could be measured through their procedures.

8.2.3.2 Epistemological definitions

Along with certain ontological boundaries on SD, the work of The Gold Standard presented a clear epistemological standpoint. Wynne (1996, p.70) argues that “science controls only to the extent that it manages to achieve the exclusion of all the factors it does not control, including those of which it is ignorant.” SD needed to be controlled through measurement at project sites with quantified, auditable processes. This epistemological control worked to exclude the problem of ontological certainty over what SD should be in producing carbon offsets.

Whatever ways a project developer chose to interpret SD, they had to offer proxies that could be measured onsite and checked by an auditor in order to verify their claims. Through the consecutive rankings and scorings required by the texts of The Standard, a simple, quantified confirmation of SD benefits for each project was offered. The

obligations and inscriptions of texts brought project activities together into epistemologically comparable forms that could present enough uniformity in procedures for The Standard to certify their activities.

Included in these thinning, quantificatory processes, standard staff saw spaces for reflection and the interpretation of intentions. Review staff suggested they could get “a feeling” about a project from its documentation. The Do No Harm Assessment was designed to make project developers “brainstorm” about complex topics such as gender equality, livelihoods of the poor and their national balance of trade, even if these would later appear only indirectly as points scored in matrices of documentation. A critical gaze could focus on the impoverishment of reducing nebulous and immense social issues into simplistic numbers (Lohmann 2006). However, quantification and measurement could also assemble such issues into offsetting (c.f. Barry 2002). The work of The Standard was transforming social and political concerns into participants in their articulation of carbon – ontological politics (Mol 2002) were at play in their activities within offsetting.

8.2.3.3 The assembling of SD into offsetting

Suchman's typology of legitimacy integrated into a post-ANT approach helped to explore how SD was assembled in offsetting. The conclusions from Chapter 6 were not that SD was either categorically disentangled or entangled within offsetting. There were multiple versions, but these were not perceived as “colliding” problematically the way that Ascui & Lovell (2011) found with differences in the accounting of carbon. Instead, I suggested that unreconciled versions of the assemblage of offsetting were co-existing. As outlined below, all three types of Suchman's legitimacy were found to be articulated in different locations in carbon markets to relate SD into offsetting.

Six voluntary standards defined SD as relevant to offsetting. However, as argued by Bumpus (2011) the majority of voluntary credits that are traded do not incorporate SD as a vital attribute of carbon offsetting. The concept of tagging-on SD standards made it clear that voluntary offsetting could occur with or without SD features being invoked or necessarily incorporated in a measurable way. The market discourses of pure and low-cost carbon versus boutique or charismatic offsets confirmed that for many, offsetting

was inherently a matter of GHG accounting, with SD a potential (but unnecessary) add-on feature in voluntary markets. In this rendition, SD was pragmatically legitimate within offsetting. On the other hand, there were spaces in the market where SD was found as a cognitive, inherent part of offsetting. In expectations of AFOLU credits, SD was an intrinsic, taken-for-granted part of what it meant to be doing offsetting – or at least that sort of offsetting. For a Gold Standard TAC member, forest based projects could not be imagined without the social structure that existed around each tree, even though hydroelectricity projects could apparently be disentangled from the social and ecological interdependencies that might exist around a river. The UN still invested resources in evaluating SD impacts, even though the market participants agreed that the CDM rules meant SD was something that could be fixed with a letter at the start of a project and then overlooked. In these articulations, SD formed a cognitive part of the assemblage of offsetting.

Another co-existent articulation produced offsetting with SD excluded entirely: SD was something messy that some market participants identify as relevant to offsetting. These multiple understandings were maintained simultaneously within the daily practices of carbon offset markets in 2010-11. In 2008, Kollmuss et al. argued that the separation of SD from the intrinsic meaning of voluntary offsetting was well underway. The description presented here suggests that an understanding of voluntary offsetting as *being* “more holistically about SD and not just carbon” (Lovell & Liverman 2010, p.269) no longer rings true. The incorporation of SD into discourses of quality, price differentials and options available to consumers in voluntary and CDM versions of offsetting reflected the commoditisation of SD co-benefits (Bumpus & Newell 2012) but not to the point where voluntary offsetting always had to incorporate SD.

Chapter 6 showed that The Gold Standard presented a morally legitimate form of assembling SD into offsetting. The marketing approach of The Standard in 2010-11 was to present their credits as “better” and “lower risk” with SD benefits included. The Standard presented their credits as a choice based on quality in ways that left room for a pure, low-cost, GHG-only version of offsetting to co-exist. As such, although it was taken-for-granted that SD went hand-in-hand with The Gold Standard, this was not necessarily due to how they defined offsetting, but with what they saw themselves as

offering within a (legitimately) differentiated market.

8.2.3.4 Quality

The diversity within assemblages of SD and offsetting were summarised in the use of quality by different carbon market participants. As in Dunn's (2008) case, the creation of standards produced a (moral) hierarchy between different versions of offsetting, evidenced by introducing the discourse of quality. However, in contrast to her example, in offsetting there has not been the achievement of the disciplining that she describes in the case of Polish meat. For some within the market, including EU regulators, “quality” was a synonym for SD benefits, but for others quality carbon referred to a sole focus on GHG emissions reductions. There are still multiple versions of quality co-existing in discussions of carbon offsets, resonating with Power's identification of the “chronic but functional ambiguity” of the term as it comes attached to the activities of auditing (Power 1999, p.58-59). In the case of carbon offsetting, invoking notions of quality through the creation of quantities has not (at least not yet) enforced agreement on what should count or be counted. This variety was perceived by some as a problem in market functioning, viewed as creating mess and potential incommensurability of offsets. On the other hand, it demonstrated the differentiation as well as standardisation that is inherent to the activities of standards and market discourses (Schaeffer 1993; Busch 2001; Boyd & Salzman 2011; Salzman & Ruhl 2000).

8.2.4 What is beyond the remit of The Gold Standard as a voluntary offset standard?

The Gold Standard and Plan Vivo focused their attention on the producer side of offsetting. However, The Gold Standard's leadership in incorporating registry responsibilities into the activities of voluntary offset standards pushed this boundary further along the offsetting chain. In 2007-8 they included trading oversight as part their work. Rather than this becoming deemed the responsibility of other organisations active in voluntary markets (banks, auditors, developers, re-sellers), the transportation of credits (electronically) also became part of the remit of a voluntary offset standard. Other voluntary offset standards followed The Gold Standard expansion of remit to also create contracts for online registries, making it a norm for the market. These registries were defined as useful in reducing the chances of fraud in credit transactions and

increasing the general credibility of the voluntary offset market.

The legitimacy of this move – whether in Turner's (2001) terms that they had a broad public backing, or for Colins and Evans (2002) were deemed sufficiently experienced in contributing to the field of offset transactions as well as production – was not the matter in question for this research. Instead, the discussion focused on observing the acceleration and intensification of agency (Barry 2006, p.241) to see how the standard articulated its role in “what subsequently counters as being self-evident, universal, and necessary” (Foucault, 2000: 226–7, quoted in Barry 2006, p.243). By 2010-11 it was taken-for-granted that The Standard managed a registry and that it could oblige all trades of Gold Standard credits to be logged on that registry.

However, in The Standard discussions over the registry in 2010-11 this activity was not related to SD as an organisational goal. The use of a new registry company with different software was argued as something to assist buyers in accessing Gold Standard credits, not for any potential SD benefits. As a consequence, offset trading oversight could be within the remit of a standard, but extending their articulation of SD to this sphere of carbon was not articulated as part of their work.

8.2.4.1 Consumers

The Gold Standard's identification of their role as to ensure robustness and SD was not applied to those who retire credits. This is in contrast to the CDM, where consumer allowances must be calculated and audited to specified rules. However, even the CDM rules differentiated in their expectations of consumers compared to offset producers. The CDM rules did not require consumption decisions to privilege SD benefits alongside cost efficiency on GHG emissions reductions. Where The Gold Standard had seen it as their role to incorporate stronger SD concerns on the side of producers, they did not choose to make the same intervention on the side of consumers of offsets. This is similar to the role that Fridell (2009) described in the case of the Fairtrade standards for coffee.

However, there were interventions with buyers by third parties in carbon markets. Some re-sellers and NGOs provided software and advice to buyers about what they should be

doing with regard to offsetting and SD. Plan Vivo saw it as within their capacities to suggest that Plan Vivo credit re-sellers should encourage buyers to reduce before offsetting, although they did not make this a mandatory constraint on re-selling their credits or monitoring end-buyer activities. The Gold Standard, on the other hand, took no official position on who could re-sell their credits and with what purpose (speculation or consumption), or on what considerations end-buyers should reflect upon when purchasing offsets. Chapter 7 demonstrated how end-buyers were externalised to the activities of The Standard, through technical assembling (software that does not record end-buyer identities) as well as the lack of discussion of end-buyer calculations on the agenda of Standard meetings.

The literature on voluntary standards predicted The Gold Standard's lack of engagement with buyers. Although consumers are argued to be disciplined by standards (Dunn 2008; Loconto & Busch 2010), there is agreement that voluntary standards are not designed to subject consumers to scrutiny (Goodman 2004). In the case of carbon markets, this lack of engagement with consumers was visible in market discourses. The vocabulary of the carbon offset market refers to retirements rather than consumption and buyers rather than consumers. Consumption (managing GHG emissions) is of less interest than trading, in the case of offset markets. In this way, carbon markets are closer to the descriptions of financial markets offered by Preda and others (Knorr Cetina & Preda 2005) than the consumer goods markets for coffee, fish or wood products that are focus of the voluntary standards literature (Cashore et al. 2004; Ponte 2012; Fridell 2006).

8.2.4.2 Beyond the technological zone of standards

The justifications of different staff for The Standard's position towards buyers indicated that beyond this boundary of standard assemblage was a multifaceted space.. From the administrative offices the “different perspectives, and uncertainties and anxieties” (Barry 2006, p.52) could be detected at the end of the technological zone produced by a voluntary standard. Thus, comments during meetings by one Gold Standard staff member indicated that for them, buyer calculations and activities were within the remit of The Standard to influence, even if not to take direct action in monitoring, verifying and certifying. Their vision of the role of a voluntary standard was that it provided “tools” that enabled detailed monitoring of any activities in order to assure best practice

(which included SD) “along the chain” of offsetting. This put SD considerations inside the black box of carbon in the calculative space (Mitchell 2008) of consumption. Similarly, another staff member envisaged a “GS Plus” category of offset consumer. This employee prioritised The Standard's role in sharing and improving best practice in offset project host countries, irrespective of whether this included increasing consumption of credits as an outcome. However, even these perceptions of the role for The Standard in engaging with consumers were not articulated in a manner that posed a direct challenge to consumption.

In contrast, most interview respondents implied that voluntary standards had no place in scrutinising the act of consumption of offsetting, or the production of carbon-as-consumption rather than offsets. None said that the lack of scrutiny of buyers was due to concerns about reducing demand for Gold Standard credits: for some the idea of monitoring buyers simply never crossed their minds. For others, when the question was posed directly, practical difficulties, such as a claim of a lack of expertise in the field of assessing consumers were identified as a problem - even when, arguably, fairly similar issues could occur and were apparently overcome when it came to producers or business partners. They did not experience the conundrum of “meta-expertise” posed by Turner (2012): they claimed they could see from their perspectives as experts on offset project monitoring that offset consumer monitoring was beyond their capabilities. Others interpreted it as inappropriate and moralistic to take a stance on how offsets were consumed in ways that mirrored Gold Standard interventions on how they were produced or traded. This was not to say that they *could* not do it, but the stronger argument was that they *should* not. As Fridell (2009) suggested for Fairtrade, for these staff it was a (non)decision not to intervene rather than a perceived inability to do so. Respondents stated that it was “not our place,” not due to the specific mandate or expertise of The Gold Standard, but implicitly due to their identity as a voluntary standard.

Having summarised the answers to each of the research questions, in the following section I draw out what the current research can offer to debates over voluntary standards, carbon markets and Bridge's (2011) research agenda for carbon.

8.3 Contributions to academic debates

Whatmore and Thorne, describing globalisation in the late 1990s, argued it was a “socially contested rather than logical process” of “performative orderings (always in the making) rather than systemic entities (already constituted)” (Whatmore & Thorne 1997, p.289). Approaching voluntary offset standards from an ANT perspective, analysis of the findings of this study suggests something similar for carbon. This project did not seek to resolve the debate over whether voluntary social and environmental standards are appropriate or legitimate in their activities (Dolan 2010; Bernstein 2002). Nor did it set out to demonstrate the influence (or not) of a voluntary standard within the market (c.f. Busch 2011; Hanseth et al. 2006). However, the study data adds a detailed ethnographic description of standard work from the perspective of the standard administration; a novel position alongside the literature attentive to sites of implementation (e.g. Dunn 2008; Loconto 2010; Loconto & Simbua 2010).

The following sections synthesise the research findings to identify the contributions made to some of the debates outlined in Chapter 2. Specifically, these sections attend to the roles and activities of voluntary social and environmental standards as identified in the literature review compared to the cases under scrutiny; the implications of using The Gold Standard as a proxy for SD in carbon offsetting discussions; and the multiplicities of carbon as articulated within carbon offset markets.

8.3.1 Being a standard

Being The Gold Standard in 2010-11 meant giving an enormous amount of attention to the fine-grain detail of making project activities measurable. Staff at voluntary offset standards “construct an arena amenable to management and calculation” (Li 2007, p.28) focused on documents to be applied to and produced by offset projects, but also extending their obligations to monitoring the legality of transactions through the software of credit registries: a technological zone (Barry 2006). By making claims about the detail of their rules and rigour of their multiple rounds of auditing (c.f. Porter 1995; Power 1999) The Gold Standard suggested that consumers should trust them. They also highlighted their NGO genesis in publicity materials – significant for trustworthiness in terms of what it implied about their moral character, in line with the arguments of

Shapin (1995a). These actions may be interpreted as attempts to build and maintain legitimacy, as Preda (2005a), also using an ANT approach, discussed in relation to other market actors.

What was notable from the data collected here but less visible in earlier literature on voluntary standards was the significance to standard staff of how their work facilitated and supported projects, as well as scrutinising and judging them. Disciplining activities (Dunn 2008; Guthman 2007; Dolan 2010) were undertaken – accusations of fraudulent form-filling; meticulous attention to the names, numbers and comments of participants; minutely precise measures of electricity produced to meet minimum requirements. But this research indicates that they sought interactivity, not only docility (Barry 2001, p.241). Staff provided encouragement, assistance and advice to projects, seeing themselves as a resource and as facilitators, not only as inspectors. This may not have been how all projects experienced validations and verifications (c.f. Bumpus 2009; Loconto 2010; Dunn 2008), but from the point of view of standard staff it was central to how they understood their daily work. This nuance in the social life of standards is a relevant part of “how what is thus named [as an organisation] comes into being out of the located ephemeral of people’s everyday” (D. E. Smith 2001, p.163). The standard's capacity for action-at-a-distance on a daily basis was experienced as a sense of helping projects, in addition to acting as disciplining authorities in the imposition of a “zone of qualification” (Barry 2006, p.240).

8.3.1.1 Cognitive standards and the moral glass ceiling

In Chapter 2 it was noted that the liberal environmentalist approach to understanding the work of voluntary standards asserts “the ultimate goal of such [standards] systems is to establish governing mechanisms with sufficient legitimacy to be recognised as authoritative in the sector or policy domain in question” (Auld et al. 2009, p.7). Levin et al. (2009) had posited that this would be the most desirable outcome for The Gold Standard, and assumed that this was the aim of The Standard. However, in the daily work of The Standard in 2010-11, and in the aspirations of many of its staff, this goal was not always evident. Some dreamed of a carbon market where “really if your project’s not a Gold Standard project, well then go home.” However, the possibility of becoming the default baseline for a market was recognised as a distant threat for a

voluntary standard as it would make their accreditation redundant (Watanatada & Mak 2011). Such a goal did not feature in the projected outcomes of the actions taken by The Standard on a daily basis. They aimed for the position of a high-end niche, not to take over the baseline of defining offsetting. This goal of occupying a niche rather than becoming the cognitive baseline was visible in The Gold Standard assemblage of SD into offsetting. Articulating a morally legitimate position for SD in offsetting whilst placing it centrally within their own remit meant that in their daily activities staff did not advocate that SD become a taken-for-granted, cognitively legitimate part of what it meant to do offsetting.

Evidenced by a marketing approach that sought to convince consumers to buy credits with arguments of reducing risk rather than choosing what was right or ethical, Gold Standard activities shied away from presenting the organisation as one that wanted to hold authority on what was the just, ethical or the cognitively legitimate way of assembling offsetting. The ways in which many interviewees described why The Standard did not intervene on the consumer side of the market displayed this unease with claiming moral authority. One worried about being seen to be “preaching,” another that it as inappropriate for The Standard to be claiming to be “holier than whatever”. The CEO wanted to avoid being perceived as “pious.” These religious allusions were used pejoratively by the speakers because of a perception of religious people as making knowledge claims about the good, and judgements on the right way to live. In addition, religious organisations often propound a cognitive legitimacy for their own stance rather than offering their worldview as a choice amongst many (also valid) options. In this respect, The Gold Standard were different from social and environmental standards in other markets where claims are made to represent and persuade consumers to enact ethical values such as justice or fairness (e.g. Jaffee & Howard 2010). In this way, the standard positioning produced articulations of carbon disengaged from arguments about right and wrong, good and bad, and couched instead in discussions of individual consumer choice.

However, if maintaining the possibility of consumer choice is privileged (or taken-for-granted), moral legitimacy – aiming to be the best choice available – becomes a glass ceiling for a voluntary standard. Within this frame, the norms and values that are

propounded within the rules and activities of the standard cannot be presented as 'the right way' but as one of many potentially right ways to be an offset (or to live a moral life). This is not a politically neutral position: it bears the hallmark “thinking inside the neoliberal box” (Guthman 2008). It is the privileging of the identity of consumer (rather than worker, electorate, government or another group) and the domain of consumption as the location in which social, political and environmental choices are to be made (Barry 2012; Goodman 2004).

Although this freedom-to-choose position was the summation of the activities observed at The Gold Standard, the data suggested that it was not inherent to the role of being a voluntary standard. As Levin et al. (2009) suggested, other voluntary offset standards (notably VCS) aimed for market dominance. VSC sought to establish their assemblage of offsetting as *the* assemblage of offsetting, with the consequence of SD as a possible add-on, but not inherent feature of offsetting. In a different way, Plan Vivo's marketing identified themselves as an *ethical* standard organisation and made explicit claims to knowledge about the right way to live (and consume), more similar to the positioning of voluntary standards such as Fairtrade (Fridell 2006). Both of these standards still leave the final decision-making to consumers, but Plan Vivo incorporate “the insertion of moralized meaning” (Goodman 2004, p.901) by making use of explicitly ethical arguments to influence consumer choices. The Gold Standard articulation of consumer choice with multiple valid forms of offsetting was only one possible way of being a standard.

These findings offer a justification for a close examination of the ways in which ethics and quantification intermingle in specific cases. Even if it seemed inevitable that a voluntary social and environmental standard would be engaged in an explicit moral project (c.f. Goodman 2004), albeit as part of an attempt to rationalise and potentially de-politicise the debates at hand (Barry 2012), the practices of voluntary standards were demonstrated to be diverse, complex and intriguing. There were significant differences in the moral projects articulated by the discourses and techniques of The Gold Standard and Plan Vivo and the extent to which they were willing to be explicit about the moral work they undertook. Nevertheless, in common with the broader sociological literature on standards, this study demonstrated that even those voluntary carbon offset standards

who did not make explicit ethical justifications for their work implicated and enacted sets of moral norms and normative values (Bowker & Star 1999; Busch 2011) in shaping discussions over appropriate development, desirable levels of (suppressed) consumer demand, and the balance between carbon offset consumption and carbon emissions reductions.

8.3.1.2 Standards and consumption

Being a voluntary offset standard for The Gold Standard and Plan Vivo did not mean intervening with end-buyers. Tautologically, this was because both standards clearly specified in their mandates that they were standards of offset projects; neither claimed to be scrutinising or certifying the entire supply chain or life cycle of an offset credit. According to the anti-neoliberal voluntary standards literature, voluntary standards do not get involved in scrutinising consumption because standards are designed to maintain consumption rather than to challenge it (Guthman 2007; Dolan 2010). However, during this fieldwork comments from staff in interviews and during their work suggested a less clear-cut differentiation at the boundaries of this technological zone.. As predicted by Barry, there were “different accounts of where the ends exist and whether or not they are solid or permeable, contestable or non-negotiable” (2001, p.52-3).

Determining the limits to their own expertise included a mixture of judgements on their access to knowledge *and* on the normative role they thought a standard should perform. Both standards incorporated themselves into overseeing the trading of credits without any attributions of SD. Some staff indicated that they saw the activities of a standard within a much broader remit than the maintenance of neoliberal interpretations of markets. At Plan Vivo they encouraged re-sellers to promote reduction of emissions before offsetting. At The Gold Standard one staff member in particular viewed the central features of being a voluntary social and environmental standard (promotion of best practice and detailed measurement) as transferable to any parts of the offset chain, irrespective of the identities of producer or consumer. The taken-for-granted attributes of being a standard within these personal understandings reflected a radically different assemblage, and one that was not automatically formed in strict relation to market-based production and consumption.

For two Gold Standard staff members, a standard had the potential to ensure that measurement and quantification of a commodity occurred in line with “best practice” however this was defined. Their motivation was not to protect consumers, as Jaffee & Howard (2010) described, but to meet the overarching goals of carbon markets to respond to climate change. The accounts provided by these staff brought to mind Veblen's suggestion that engineers are true revolutionaries because they care more about efficiency than about markets (Veblen 1963 [1921]). In their case (and indeed they were both engineers) this was at least potentially so. For them, the limits to standard involvement did not set up a clear demarcation between producers and consumers. Instead, they envisaged their place within an interconnected chain of activities (in their words), “focusing on its [a commodity] total trajectory” (Appadurai 1986, p.13). This is a different interpretation of market activities than provided by the dominant binary metaphors of buyers and sellers. It suggests that this dualism is contested in “how knowledge actually flows, how it actually aggregates” (Turner 2007, p.46) within the daily work of offsetting as well as in academic debates (Appadurai 1986; Goodman & Bryant 2004; Lovell et al. 2009).

Nevertheless, The Gold Standard and Plan Vivo, despite their differing moral engagements, maintained their primary focus on production and narrowly defined interventions in trading during the timeframe of this fieldwork (see policy recommendations below). In the following section I propose that this study demonstrates that assumptions about the role of standards and the lack of attention to the multiplicity of assemblages of offsetting and SD may be determining and limiting academic and participant discussions of offsetting – a case of “how aggregation [of knowledge] fails” (Turner 2007, p.46).

8.3.2 Standards as informational infrastructure

As noted in Chapter 2, The Gold Standard has been adopted in other academic research as a model of offsetting that includes SD. It appears in policy discussions and within the offset market as an adjective describing SD-related projects. This use of The Gold Standard as an off-the-shelf operationalisation of SD in offsetting for (fairly) neat comparative analysis presents an interesting example of the transportation of a voluntary standard as a “symbolic system” (Bourdieu & Wacquant 1992, p.14) *or* “ontological

device” (Whyte & Thompson 2010, p.81). It invites consideration of the idea of voluntary standards as “information infrastructure” (Bowker & Star 1999) that alter perceptions of people, goods, and the relationships between them. The adoption of The Gold Standard as a proxy for SD entails a “structuring of relations... but one that does not necessarily take a disciplinary form” (Barry 2006, p.241). This discussion exemplifies how the assemblage of carbon becomes represented in unitary and, in some cases, inaccurate description through the translations of activities of standards.

At first sight, the use of The Gold Standard as a topic for discussion or model for comparison in policy circles and UN comparative analysis chimes with the “Non-State Market Driven” interpretation of voluntary standards (Cashore et al. 2004; Levin et al. 2009) who suggest that standards are capable of spreading their norms and influencing wider agendas. But the NSDM assertions overlook the fact that most of these translations ignore what The Gold Standard themselves define as crucial about their definition of SD: that it is something that can and should be measured. The CDM analyses by the UNFCCC (2011a; 2012a) and academic works (Drupp 2011; Nussbaumer 2009; Sterk et al. 2009) make use of The Standard as a comparator or dummy variable for assessing the impact of the CDM. Their method is to compare project documents – but not measured, quantified, audited project outcomes – with respect to SD benefits. The lack of information about outcomes (rather than unverified, ex ante project developer promises) is one of the main criticisms of the CDM that The Gold Standard was set up to overcome. As others have recognised (Drupp 2011), comparing two sets of promises from project developers, only one of which will have their implementation monitored in any way is a significant defect in some study research designs.

It is fairly clear why The Gold Standard gets chosen as a proxy: ignoring their concern that SD be measurable, they offer a relatively large sample size with a range of project types. However, narrowing “SD in offsetting” to mean The Gold Standard not only transforms The Standard's assemblage of SD, it also ignores the other types of SD that co-exist in voluntary offsetting practices. Plan Vivo's insistence that projects are not-for-profit, and that the means of production are owned by those who work on a project determines that the vast majority of CDM or EU compliant offset projects would simply

fall at the first hurdle in any comparative analysis. This undeniably makes for less interesting applications of quantitative methods in research. However, by not conceiving of this definition of SD within the discussions over measuring or evaluating SD in offsetting, writers are marginalising discussions on the overall goals of offsetting and carbon markets more generally, on more radical alternative definitions of SD and on responses to climate change. The decision to take a macro, quantitative approach may lead to the preclusion of space for reflection on the variations of SD that exist in carbon offset markets.

This critique does not apply only to academic work; “Gold Standard-like projects” as advertised by market intermediaries can mean that projects’ site-specific social, environmental and economic benefits are highlighted, but not necessarily measured – the central, defining feature of The Gold Standard’s approach to SD. What those who invoke The Gold Standard are describing or suggesting, and what The Gold Standard themselves propound can be considerably different. Even the EU ETS interest in promoting SD, which was done with reference to The Gold Standard as a model (see Chapter 6) performs a very different sort of SD assemblage than that articulated by The Gold Standard. *The new EU rules* have not taken on the epistemological definition for SD offered by The Gold Standard. Instead, they have reduced the definition of offset project host countries to the UN’s list of Least Developing Countries. By contrast, The Gold Standard is happy to accredit projects in China, Turkey or even the USA. The important variable for The Gold Standard definition is that SD is something that can be measured, irrespective of the project location. Thus while the EU narrowing of definitions might be linked to The Gold Standard in that it indicates a greater interest in making SD relevant to offsetting, the definition of SD that is assembled in the EU rules is significantly different. The present research can clarify of some of these differences and remind practitioners and academics to pay careful attention to divergences in definitions that have been and may continue to be glossed over, especially with something as nebulous and contested as sustainable development.

These translations of The Standard into academic and policy tools (whether in something more closely resembling their original form, or in nomenclature only) in texts and calculations is indicative not only of the alterations that an actor undergoes as

it is translated from one context (the offices of a standard) to another (the offices of the UNFCCC, or an academic institution). It also raises the question of the slippery nature of SD as a concept. In this thesis, shortening it to the acronym SD has allowed the actor a semblance of consistency, whilst Chapters 4 and 6 demonstrated that even within offset markets it can be summoned to describe a wide range of activities, quantities and worldviews. Chapter 7 identified that relating SD in offsetting solely and directly to The Gold Standard reduces the space within offsetting debates where SD is being made relevant to the sites of producer activities, not the act of offset (and carbon) consumption. Others might make use of Gold Standard as a synonym or proxy for SD because it offers a minutely detailed, already validated (although not defined) operationalisation of SD in relation to production activities in offset markets. At the same time, it might be a short cut to avoid entering into the sometimes inhospitable, and always difficult terrain of reflecting on what kind of development is being sustained and what kind of carbon is being produced, and as Banerjee puts it, “for whom?” (2003).

8.3.3 Carbon

By focusing on one location, this research extends Lane's (2012) discussion of efficiency in carbon markets. He identified the work that goes into defining policy alternatives and promoting one as the best solution. This research opens out another set of questions to consider how the aims of such policy debates are formed and delineated. Inevitably discussions of efficiency in carbon markets are obliged to assume closure on the matter of 'at doing what?' In line with Barry (2012) this study engaged with standards as “a catalytic surface on which knowledge controversies emerge” (p.328) rather than as the closure of debates about carbon. The location of standards also assists in filling a gap in the new carbon economy literature as voluntary standards had been identified as relevant players in carbon markets (MacKenzie 2009; Paterson 2009; Bernstein et al. 2010) but not studied in detail. A descriptive approach was chosen to help undermine the objectification of offsets and carbon and instead draw attention to their achievement as concepts and consumable (although intangible) objects. A post-ANT framework offered the possibility of imagining carbon as an assemblage, enacted in un-reconciled and co-existing forms. As such the study forms part of a wider project to understand and scrutinise carbon in its “role... as a cultural object and its increasing centrality to the organization of social life” (Bridge 2011, p.821).

At the location of voluntary carbon offset standards carbon was found to include:

- 1. Measurement, quantification and auditing which, as with other commodities, shift but do not replace trust.*

Offsetting is future-focused, quantifying the impact of future actions as a consequence of what is decided in the present. Activities (cooking, growing, saving energy) become economically translated and meaningful as carbon-as-offsetting by their capacity to be measured and quantified. In the case of offsetting, the pivotal role of additionality makes quantification vital. An inability to quantify the future removed the present value of an activity. Carbon in this context is formed through its calculated alter-ego of non-existent future emissions in order for offsetting activities to be considered as responses to climate change. In turn, this incorporates methodologies (rules for translating) as taken-for-granted within the assemblage of carbon-as-offsetting (c.f. Bumpus 2010).

As argued in reference to other scientific and economic activities (Shapin 2004; Porter 1995; Power 1999; Hatherly et al. 2005) measurements, quantifications and auditing do not avoid the need for trust. Through these practices, trust is encompassed and located in the assemblage of carbon. Carbon-as-offsetting involves distributed trust across technical agencies and many intermediaries. Auditing and voluntary standards capture and relocate trust that could be placed in offset producers or offset project workers. Amongst themselves the range of voluntary standards available for offsets compete for the trust of consumers, and in this research The Gold Standard demonstrated through its rules and pronouncements a severely circumscribed level of trust towards auditors. Software for tracking carbon as it was transacted also acted to draw trust towards voluntary standards, this time away from re-sellers. This shifting of trust around offsetting effectuates the need for many intermediary organisations in the creation of carbon-as-offsets. This in turn performs transportable, translatable features as necessary within carbon: the creation of meaning in quantities and measurements.

- 2. Within The Gold Standard and Plan Vivo assemblages, sustainable development was included in carbon as a quantifiable, measurable object.*

Carbon in the assemblage of these voluntary carbon offset standards incorporated SD. This enacted a version of carbon that was situated in specific locations, articulated as containing social and environmental (and to some extent economic) features. The standards presented some boundaries around what SD should include – notably with the exclusion of economic distribution considerations from offset projects at The Gold Standard, in contrast to Plan Vivo. Both standards allowed for SD to be flexible in its assembling so long as it was epistemologically constant through the production of measures and monitoring.

At The Gold Standard, SD was not framed as intrinsic to what it meant to do offsetting or enact carbon. They articulated SD as something that reduced risk and made an offset more desirable, rather than something that was inherent to offsetting and carbon more generally. The Gold Standard approach preferred to present offsetting as a commodity that could come in varying forms. They presented these alternatives as a hierarchy with their own SD-related version as a better form of carbon. Thus although the local social and environmental features of carbon were made relevant through their work, they also limited this relevance by indicating that these features did not need to be taken into account in order to produce an offset and to define carbon.

3. In other locations, SD was assembled with different degrees of legitimacy or sometimes excluded from the assemblage of carbon.

Comparing the stance of The Gold Standard to other enactments of offsetting demonstrated that there were a multitude of articulations of the link between offsetting (and therefore carbon) and SD. In a review of Barry's (2001) explanation of technological zones as constitutive parts of political machines, Callon explains: "if standardization leads directly to politics, it may do so in different ways: either by bringing out new issues or, in contrast, by reinforcing existing codings" (2004, p.130). Both of these possibilities were visible in the multiplicity of the assemblage of carbon within offsetting. Carbon offsets could be defined with no relation to SD, and any attempt at making a link rejected as "mess." The CDM rules also presented an assemblage where SD was name-checked, but did not require actions to include local

impacts in any measured or non-measurable sense. VCS and other standards engaged in tag-on definitions that allowed offsetting to maintain coherence without SD and did not participate in the construction of a hierarchy of carbon in which SD formed a more desirable version. Alternatively, SD is widely held to be intrinsic to the meaning of some offsets (e.g. forestry carbon). Similarly Plan Vivo, while they accepted that other versions of offsets were available, made claims to an ethical justification for their inclusion of SD. The latter presented SD as not only making a better type of offset, but of making the right type of offset. In their articulation of offsetting, carbon should mean the consideration of the social, environmental and economic impacts to a locality, and should include more far-reaching challenges to the capitalist status quo (e.g. ownership of the means of production).

In this description carbon is a multiplicity: all of these assemblages of offsetting were qualifying as carbon in market practices during 2010/11. Although some articulations attempted to denigrate others, they all co-existed as commodities in carbon markets. The post-ANT approach of this research drew attention to this co-existence by its rejection of the need to interpret data in order to present one version of carbon as holding the monopoly on defining SD-offsetting relations. The practices of voluntary offset markets make carbon a Heideggerian thing that is sometimes measurably equivalent to activities that include more than the quantification and auditing of GHG emissions. This produces carbon as a differentiated currency with significance in its immediate context, not only as something to be made fungible and aggregated for measurement in global terms (Salzman & Boyd 2000). This is important because in political discourse, the currently dominant understanding of carbon-as-offsetting is as the quantity of GHG at global/national levels (Boyd 2010). In such a framing, attention is focused on how emissions of gases should be reduced, but is largely separated from concerns of the uneven local impacts of emissions or broader SD (or alternative, non-GDP growth-focused) agendas. A discussion that assumes that GHG emissions reductions is the only activity that carbon offsetting is designed to achieve misses important features of what it means to do offsetting and to make carbon.

By engaging with the possibility of the multiplicity of carbon this study extends the debate over what is or should be relevant or important in responses to climate change:

the “political situation” of carbon (Barry 2012). Conversely, the purification of the concept (Latour 1992) acts to remove explicitly normative debates from discussions of offsetting and many operationalisations of carbon. This serves to negate the articulations that already exist and that present more fundamental challenges to the status quo than the quantified GHG-reductions version offers. That this might occur is not surprising. A post-ANT approach is designed to show where and when it does occur and is occurring (Mol 2010a; 2013). By describing the permutations present in assemblages, decisions over which to operationalise and which to discard become more noticeable as political acts and avoid being shut down as “technical decision-making” (Wynne 2003 c.f. Collins & Evans 2002).

4. Carbon in voluntary offset standards and carbon markets excludes challenging consumption.

The practices of offsetting arrange consumption as something that incorporates consumers in the “redistribution of calculative capacities” (Sjögren & Helgesson 2007). To offset, the consumer has to undertake calculations to work out how much GHG emissions they have produced in order to know how many offsets they need to buy. However, the attention of voluntary carbon offset standards did not stretch to include these calculations in their remit; something to be expected from the literature on voluntary standards (Goodman 2004; Fridell 2009). Perhaps more surprisingly, The Gold Standard seemed unwilling to make explicit moral judgements of offset consumers by avoiding ethical arguments to differentiate offsets, let alone challenging the desire to consume. The Gold Standard were not the only ones to pay less attention to consumption. The vocabulary of carbon markets confirms a central concern with the transaction of credits (between buyers) rather than with where they end up (retired by consumers). .

By attending to the potential for multiplicity, Plan Vivo were observed as willing to identify their work (and therefore the choices made by consumers) as “ethical” and suggest reflection from consumers on their offset needs. Within The Gold Standard, staff boundaries of what could be considered in their articulation of carbon differed one

from another.. For some, the production of offsets was not necessarily limited to or by markets, and social and environmental best practice could be integrated throughout the lifecycle of the commodity of carbon. However, where the multiplicity of carbons for sale was seen as significant, even if not equally weighted, the chinks in the construction of carbon-as-offsets to include a challenge to consumption were small. Indubitably standards are not neutral: the demand for offsets is not something that is designed to be challenged by voluntary standards or the creation of markets. As Callon (2004, p.130) captures it: “They [standards and measurements] are... political through and through.” But in terms of shifting the grounds on which carbon and climate change discussions could take place, “their politics is that of... repetition and not of... invention” (p.128). While sometimes participants could articulate the connections between carbons and “stand back... [to see] King Coal, and banks and oil industry and so on” (Interview 5, 2011), their engagement in offset markets and the types of carbon they produced were not directed at challenging these other carbon assemblages. The evidence in this thesis suggests that the enactment of these standards and markets has left little room to think about such measures or perceive the connections in the locations created by offsetting and standards. As noted by Bridge (2011), political or academic discussions that focus on carbon-as-offsetting pass over other types of carbon (produced in emissions, not in the production of non-emissions) and enforce the separation between responding to climate change in ways that could direct action towards a reduction in “old” carbon (extraction of fossil fuels) rather than the creation of “new” carbon (managing GHG in the atmosphere).

This research has zoomed in on one small part of the assembling of carbon and offsetting through voluntary standards, but it is ultimately connected to the wide-ranging, undomesticated and unpredictable discussions over carbon as a preoccupation of 21st century Western lifestyles. The domination of carbon markets as an internationally organised response to climate change, and the lack of challenge that this presents to consumption emphasises the omission in current debates that use carbon to manage responses to climate change. However, using a post-ANT approach I argue that the definitional debates over carbon are still (and perpetually) in the making. Attending to and talking about co-existing assemblages of variations, disaggregations, ruptures and alternative definitions is a way of bearing witness (MacKenzie 2009) to the

constructions of offsetting and carbon markets. It notes and challenges what gets absorbed or excluded in debates about carbon. The varieties of carbon articulated within offsetting indicate some of the diversity that is already present. Carbon is multiple and unreconciled in the activities of carbon offsetting, alternately including and excluding SD in importantly different ways. The space for public intervention, more radical challenges to the political and economic status quo and challenges to consumption are small – but present – in these spheres. Attending to these variations, the fractal nature of socio-technical assemblages of carbon as they are already happening, and not only as they could be imagined otherwise, has been the aim of this project.

8.4 Theoretical adequacy and potential

The following sections reflect upon the theoretical framework that was constructed through this empirical case. A combination of a post-ANT approach with the innovative addition of an adapted version of Suchman's typology of legitimacy allowed for detailed differentiation of the types of links that were observed within the assemblages of offsetting in this research. A desire to look beyond the assembled actors resulted in an extension of Suchman's typology to reflect his categories of legitimacy in comparable forms of illegitimacy. This section describes the theoretical path taken, noting its achievements and potential and also the difficulties and hazards in such an approach.

8.4.1 Actor Network Theory

The theoretical framework of this research adopts and adapts ANT to describe dynamic, multiple, co-existent assemblages, close to the post-ANT approach advocated by Mol (Mol 2002; Mol & Law 2004; Mol 2010a). In applying post-ANT within organisational settings, D.E. Smith's work (2001) encouraged me to see the world from different standpoints, as intermingling sets of systems and processes, people and things, rather than static constructions and unpopulated organisations. As in Mol's work, the findings represent fractal assemblages of offsetting and SD that interconnect with differentiations and interferences to make more than one but less than many assemblages of offsets and carbon (De Laet & Mol 2000; Mol 2013). A post-ANT framework did not require the data to be ordered into a description of a winning assemblage of offsetting. Instead, it offered space for this research to recount and compare the co-existent articulations of offsetting that were visible in carbon markets in 2010/11.

Using a post-ANT approach allowed for an agnostic position towards offset standards – something that could be criticised (Saldanha 2003) or welcomed (Mol 2013). It would have been possible to rank the assemblages of offsetting that were found, to present an argument for why some should be viewed as superior. However, in this project I have chosen to map out the differences and focus on the multiplicity of carbon. Rather than establish my preferences for offsets, I choose to emphasise how the multiplicity of offsetting helps understand what has been created in turning carbon into a commodity, and the multiple possibilities that are already co-existent in responses to climate change. However, I go further than some in arguing that this variety in carbon (but still not any particular variety of carbon) should receive greater attention. Gad & Jensen misappropriate a quote from Mol (2002) to suggest that discussion in post-ANT research “cannot be separated from the intervention: talking is an intervention” (2010 p.67). I push a post-ANT approach a small step further than Mol (2010) to describe the lack of attention to the multiplicities of carbon as an omission in debates over responses to climate change (c.f. Larner 2003).

8.4.2 Conceptual innovation

This project looked to adopt a post-ANT approach that would emphasise the multiplicities and co-existence of assemblages. Ideas of translations and resistances came in useful, but the ideas from classic operationalisations of ANT of irreversibility and obligatory passage points were, for the most part, too static for the fluctuations observed in carbon and carbon markets. Post-ANT explorations of what was left out of assemblages (Law & Mol 2001) and different ways of assembling (Mol & Law 2004), along with an openness to novelty in descriptions and cases (Mol 2010a) provided an appropriate theoretical framework from which to build this research project.

It proved difficult to maintain a focused gaze on the spaces in-between actors (human, organisational, and otherwise) without a specific set of words to describe the differences that were observed in these links and spaces. Certain ANT terms that have been used for market descriptions (in particular: entanglement, overflows and framing) have caused controversy (c.f. Miller 2002; Callon 2005; Holm 2007) and did not fit the experiences and observations I was trying to describe. Ideas and practices did not often appear as

entangled like a messy ball of wool, but there were ideas and actions that were firmly placed within an assemblage in ways that made them seem inherent and automatic. Metaphors of framings and overflows bifurcated and homogenised the subjects, making it difficult to venture into and explore assemblages as they were observed.

To meet these challenges I introduced and extended Suchman's typology of legitimacy to complement ANT. Using this innovative approach supported the description of features that were taken-for-granted, desirable or possible within an assemblage as well as those that were deemed impractical, inappropriate or irrelevant outside it. This set of vocabulary differentiated between connections and encouraged development of a greater understanding of how assemblages were formed, reformed and open to new and co-existent formations without suggesting that more stable connections should be understood as inherently different. The theoretical synthesis presented here suggests an ANT approach that moves away from total flatness to a more modulated perspective on the world. This height is not found by raising up some actors in levels of importance, or by privileging networks that occur across more extensive topographies or contain more actors. It is from identifying the differing thicknesses of the links in-between actors and finding differentiability between the forms of network that we can describe and examine in detail.

The more straightforward operationalisation of legitimacy would examine the legitimacy of standards as organisations and as market devices, similar to the work of Preda (2007b). He explored the case of financial chartists where the legitimacy of the actor is under dispute, as is the case with voluntary standards, and used his descriptions of legitimacy to comment on the constructions of legitimacy of the wider financial markets. This appeared during the research process as the simpler path to take, as it is how Suchman's typology was designed to be used (1995; Suchman & Deephouse 2008). In addition it could engage with other work looking at the legitimacy of different voluntary standards (Cashore et al. 2004, Gulbrandsen 2008, Boström & Hallström 2010). However, the intention to focus on assemblages of offsetting and carbon as a more central concern than the assembling of the standard led to the decision not to orient the research in this way. By purposely shifting the focus from the construction of legitimacy in a standard, it was hoped that more attention would rest on the multiplicity

observed in the construction of assemblages of carbon.

8.4.3 Illegitimacy and the spaces between actors

Expanding the typology of Suchman had not been a goal of this research. However, the data on end-buyer activities seemed to require further tools to make this aspect accessible. Hence I developed the vocabulary of impracticality, inappropriateness and irrelevance (outside the assemblage) to mirror the pragmatic, moral and cognitive legitimacy of relationships between actors inside. Identifying these types of illegitimacy and words that seem accurate to describe them made it easier to comprehend and analyse the data presented in Chapter 7, and proved an interesting space for reflection. The theoretical window that the difference in responses opened was too intriguing not to include in this research and provided a small insight on the shadowy domains of the politics of inaction and latent conflicts – what Lukes (1974) called the second and third faces of power – that can be so easily missed.

Exploring what is *not* happening as well as observing what is, is the magical sleight of hand of a good ethnography. For ANT research, it can expand our vision beyond the immediately obvious, to catch sight of the spaces between actors and in between networks. This is not the first time that ANT inspired reflections have interrogated what is not being included in a network (Star 1991; Brown & Lee 1994; Law 2001). Considering the outsides of metaphorical assemblages seems an important step within post-ANT research, perhaps just as much as laying out the assemblages themselves. Law offers one possible description of such an approach, drawing on an imagery of topologic Euclidean and network spaces, fluidity and alterity (Law 2002; Law & Mol 2002). In this work, extending Suchman seemed a more appropriate avenue as it allowed for a more straightforward “ordinarily reliable kind of faithfulness” (Smith 1992, p.94) to what interviewees were describing, as well as a theoretical matching between descriptions of outside and inside an assemblage that created a more sturdy frame for analysis. However, even though effort was made to understand what was beyond assemblages, the temptation to draw these outsiders into a network was difficult to resist (see recommendations from research findings).

One set of observations within the fieldwork that proved more difficult to describe through these frameworks was the idea of SD as made present in the CDM obligations for ex ante confirmations from host governments, but without further monitoring or emphasis from projects or most consumers. This situation nominally incorporated SD into offsetting activities, but, potentially in ways that were not much more than lip service. There was no obligation for measurement, and few with any interest – apart from the UNFCCC itself (2011a; 2012a) – in creating a story around this formation of SD. Whether to classify this as assembled or not assembled, and how to manage the definition of SD that it presented was tricky within the chosen theoretical approach. In re-examining the data and trying alternative theoretical tools I was not able to capture a satisfactory description beyond an idea that SD as presented in the CDM was made cognitively legitimate in name, but with such a small, shadowy assemblage that it seemed hardly to be present. Perhaps it is a sign of a weakness in an ANT-based approach (or at least in how I have managed to implement it) that where concepts rest as a discursive performance (a letter that says SD is present makes it present), with almost no ties into the physical, tangible doing of an offset project, there are not enough actors for an ANT description to get a strong theoretical grasp – something that incorporating more influences from performativity (MacKenzie 2006; MacKenzie et al. 2007) might have remedied. However, I was unable to achieve this in any parsimonious way that could make the data comparable with the rest of an analysis based on ANT and Suchman.

8.5 Recommendations for carbon market participants

Beyond the general call for consideration of the variation in carbon, there are two specific recommendations directed at the standards involved in this research and others active in carbon markets I wish to suggest. The first, and most concrete, is for The Gold Standard. Although this was an ethnography of, not for, the organisation (Neyland 2008, p.9), such sustained study of an organisation and its assemblages inevitably allowed for reflection on how it does what it does, and how it could do it better. The second part of this section orients the theoretical approach and analysis of this research towards the support of those working to shape carbon offsetting and situates it within the broader debates of carbon and climate change.

8.5.1 The Gold Standard and end-buyer calculations

In this research, the lack of articulation of an organisational opinion over end-buyer calculations came to be seen as a gap in the assemblage of The Gold Standard. The majority of the interviewees did not see this as a problem, and for the majority of my time at The Standard I also took it for granted: there was no space to see. However, the arguments of one staff member about supporting best practice along the whole chain of offsetting made The Standard's inaction intriguing. In my observations, The Gold Standard staff undertook their work with dedication and a concern for ensuring the best possible practice within their mandate. This commitment to making carbon offsetting as sustainable and effective as possible would seem to be met by expressing an organisational opinion on consumer calculations for offset purchasing.

Making a public statement recommending particular models of calculation for offset consumers would benefit the organisation for strategic reasons. As the CEO bluntly pointed out in an interview: "If someone suddenly decides that everyone's been doing crap calculations, then everyone suffers." Having a public opinion on which of the available carbon calculators or consultants might offer better ways of calculating offset needs fits into The Standard's morally legitimate strategy of offering choice, but expressing some choices as better than others. In the same way as oversight in trading through the registry has become taken-for-granted within the role of being a voluntary offset standard, I think offering suggestions on best practice for calculations could fairly easily (and cheaply) become normalised, as an extra page on their website that either directs customers to specific calculators/consultants, or lays out some principles of calculation (e.g. to look for ways to reduce emissions through energy efficiency measures before turning to offsets, be conservative in estimates and calculations). I would suggest that supporting an approach to calculations based on the energy hierarchy understanding of offsetting as part of a wider energy reduction and renewable energy use strategy (c.f. Lovell et al. 2009, p.2372), would neatly match the organisational aims of encouraging energy efficiency and renewable energy more broadly.

This recommendation does not go so far as to suggest a similar level of scrutiny of consumers as The Standard implements on producers, or impose requirements on buyers,

merely to suggest best practice. Any such a move would be an incongruous action for a standard that has structured its work around offering choice and avoided taking moral stands on the right or the good. The proposal above offers more coherence within the chosen organisational approach to offsetting and managing climate change.

Although I can see benefits for The Standard from taking this step, I ponder on the theoretical implications of this recommendation. As outlined in the literature review, an ANT perspective perhaps has the flaw of needing everything to be part of a network and privileging a winner who can enrol and link to others as a measure of their success. An unintended consequence of my approach has been to identify an outside, and then offer ways to make a (pragmatic/moral/cognitive) link to neutralise or dissolve it into the assemblage. Intellectually habituating myself to see the world as constantly linking perhaps has this downside, but nevertheless, I stand by the recommendation for The Standard.

8.5.2 Sustainable development and offsetting

The theoretical insights provided by describing offsetting as an assemblage of legitimacy can offer some reflections for further practical application. At the time of writing, carbon markets have lost a considerable amount of their sheen in policy and financial circles. However, without any particular alternative finding support at international negotiations, market-based mechanisms may yet prove resilient. Furthermore, there is a core of expertise and faith in offsetting as a concept and carbon markets as a principle that has built up over the last decade from those working inside the market. These individuals, in addition to technologies and assemblages have a vested interest in seeing carbon offsetting or at least their progeny (biodiversity markets seem a possibility) continue. In this case, future resurrection will open the definitional boundaries and assemblages for (re)negotiation. Whether or not and how SD remains on the offsetting agenda, or takes over to become the primary goal of offsetting – leaving GHG emissions as something that become re-conceptualised as more efficiently dealt with through other types of legislation – are, in my view, open for debate. In any of these scenarios, those lobbying and making policy should consider not only whether they include SD (or other) actors, but what *type* of legitimacy their rules or arguments give to different actors, and the implications this has for how offsetting, SD and carbon

more broadly are assembled.

Moral legitimacy arguments allow issues to appear on the agenda and be seen as valid (desirable, but optional) choices, whereas cognitive legitimacy arguments look to present one option that everyone should be implementing. In this case, The Gold Standard offer SD as a choice within alternative offsetting practices, rather than insisting that SD should be inherent to the definition of offsetting. Those who think that SD should be an intrinsic attribute of offsetting – or carbon markets, taxes, and post-carbon futures more generally – might find it relevant to reflect on this difference. Presenting actors in discourses of moral legitimacy (so-called quality or better versions of the same commodity) may assist in getting matters onto the agenda. However, it might not bring them closer to being taken-for-granted within the definitions of offsetting or carbon. As Suchman (1995; Deephouse & Suchman 2008) précised, the act of building moral legitimacy may even remove cognitive legitimacy: once something is seen as a desirable choice for some, it is no longer an obligation for all. SD seems to have become associated with AFOLU offsets in cognitively legitimate ways, but as forestry is increasingly integrated alongside other types of offsetting the outcomes in terms of the legitimacy of SD within the new definitions of offsetting that emerge are not predictable. Others have raised these concerns (e.g. Stephan 2012), but the analysis presented here using the ideas of legitimacy and assemblages offers a conceptualisation of the situation as something relevant across all types of offsetting.

At the same time, those who look to exclude SD from a cognitive role in offsetting might find that they can work more easily alongside those who present SD as a morally desirable (but not intrinsic) feature than first sight might suggest – as VCS have found by embracing tag-on SD standards but maintaining the fundamental definition of offsetting as something related to GHG emissions reductions. A useful metaphor could be one of lego bricks or a Rubik's cube. Lego bricks are discrete objects. They are made to be able to fit neatly together, but they can also be taken apart without anything being broken. On a Rubik's cube, in contrast, each side must be taken into account and completed for the game to be finished. It may be useful and important for The Standard, but also other campaigners and market participants to clarify whether their aim is to make it possible for SD (pragmatically or morally legitimate and Lego-like) to be built

into offset markets, or to make SD a taken-for-granted aspect of offsetting – for SD to be a side on the Rubik's cube of a carbon offset. This could help in choosing the right allies for those campaigning on or working in the market. Either way, what SD would look like – how it would be assembled – is another site of contestation and variations, with, as has been shown in this research, both ontological and epistemological cleavages.

8.6 Conclusion

The cases examined in this research allowed for insight into the work of voluntary standards as well as a novel standpoint from which to understand more about the new carbon economy. The findings were produced by engaging in ethnography of organisations that paid attention to “the located ephemeral of people’s everyday” (D.E. Smith 2001, p.160). Analysing the data using a post-ANT perspective left space for the recognition of multiplicities in the assemblage of offsetting. There was also an enhanced attention to the variations evident in the ongoing work of articulating organisations and commodities. Combining this with Suchman's typology of legitimacy produced a theoretical framework that could describe the differences found in the assemblages of carbon-as-offsetting in the work of two voluntary standards.

The assemblage of a standard was described as a continuous accomplishment rather than a static construction, as new rules, interpretations and clarifications had to be considered, integrated and adapted through on-going work. Their activities highlighted what was made necessary in the socio-technical production of offsetting: measurement, quantification and auditing in order to produce additionality with the help of methodologies. But in their daily work, standard staff saw themselves as facilitators as well as inspectors – something less visible in the literature on voluntary standards. In addition, it was notable that their assemblage of a standard was articulated through interactions with other organisations: auditors, governments, the UN, developers and NGOs, and not necessarily always in a subservient or disciplined role.

The Gold Standard and Plan Vivo were shown to have different articulations of what SD might include, and how it could or should relate to offsetting. They were contrasted with other standards to demonstrate how the moral work of voluntary social and environmental standards was not always in the form of an explicit normative project.

The Gold Standard adoption of a quality standard as an identity, avoided an ethical projection of their aims but presented them with a 'moral glass ceiling' as they looked to be a high-end niche rather than a baseline for offsetting. Although their activities nevertheless contained tacit normative pronouncements, the assumption that all voluntary standards seek cognitive legitimacy may be unfounded (Levin et al 2009; Auld et al. 2009).

The differences in the ways in which SD was defined and measured by different standards called for reflection on how The Gold Standard has been translated and used as a proxy for SD in offsetting in academic evaluations, legislative developments and market discourses. In this study it was identified as only one of various assemblages of SD, and only one of multiple ways of assembling SD as part of offsetting. The moral legitimacy given to SD as a part of offsetting by The Gold Standard, combined with their flexible definition of SD meant that they do not present a challenge to the “coding” (Callon 2004) of neoliberal interpretations of capitalism. Other assemblages found to be present in the market – whether through Plan Vivo's attention to the distribution of economic benefits, or AFOLU credits and the integrated position of local social and environmental concerns – offer and oblige more extensive debate over the politics embedded in offsetting, not just its apparently technical implementation.

As expected from the literature on standards and carbon markets, the assembling of offsetting focused attention on the details of production, rather than the appropriateness of consumption (Guthman 2007; Dolan 2010; Goodman 2004; Lohmann 2005; Lovell et al. 2009). However, the work of standards in this setting went further than the literature on voluntary standards would presume: they were involved in the oversight of trading, not only in circumscribing the processes of production. Nevertheless, the carbon produced through the rules of voluntary standards was detached from actions that might challenge the extraction and consumption of carbon (Bridge 2011).

These descriptions of the activities of voluntary standards allowed for contributions to the broader discussion of carbon. Significantly, carbon was identified as being assembled in multiple ways through the articulations of offsetting. Although it is most usually called upon to describe GHG emissions, in fact its daily use in the location of

offsetting at times encompassed more than only GHG reductions. Whether or not carbon should have an intrinsic place for SD was left open, but it was emphasised that in some discussions, it is already present. In important respects carbon is not a homogenous, standardised commodity and the practice in offsetting markets (through the engagements of differentials like voluntary standards) are not producing it as one.

Despite these differences, there were also similarities in the carbon-as-offsetting that was observed. Carbon was produced as something that required detailed measurement, quantification and auditing, requiring the intervention of many intermediaries who relocate trust between them (Porter 1995). Furthermore, carbon-as-offsetting was not mixed with carbon-as-consumption in the activities of voluntary standards, or the discourse of offsetting. Consumers were of less importance than buyers in market discussions, and the consumption of a credit was its retirement from the part of its life that market processes are set up to be interested in. The voluntary standards did not engage in scrutinising the calculative capacities of their customers, nor suggesting (or requiring) SD qualifications from them. Although at first glance this was taken-for-granted by most of those in The Standard, the end to their “technological zone” was not automatic (Barry 2006). It had to be constructed by staff, and their varying responses to the possibility of engaging with consumers demonstrated that keeping consumption outside of their assemblage of carbon was a diverse and discordant affair. It retained information not only about what they felt they could do, but notable omissions and inclusions of normative statements on what they felt they should do. Some saw it as part of their role as standards to implement SD and granular best practice. For others, their political philosophy included upholding consumers as those granted the right to choose.

The practitioner recommendations from this project to The Gold Standard make an attempt to neaten the current edges with regards to consumers, whilst recognising the relevance of their morally legitimate positioning when it comes to finding partners and setting a future course for their own work. The second recommendation applied not only to The Gold Standard: thinking about which assemblage(s) of carbon are being promoted, and whether these include or exclude SD, carbon consumption or other elements of responses to climate change can apply equally to academic work on carbon and to policy making. Suggestions for further research possibilities presented from this

project are included in the next chapter, along with a review of the arguments that have been presented and reflections on the research process.

Chapter 9: Conclusion

9.1 Introduction

Through growing concerns about climate change, political discussions – in the UK at least – have thoroughly incorporated carbon as an apparently known and knowable feature of the environment and economy (While et al. 2010 REF). This carbon discourse features the concept in its “new” form; counted in units of GHG emissions, to some degree commensurable across time and space, and “very likely” to be worrisome at an aggregate level (IPCC 2007, p.39). This carbon is a largely separate socio-technical and political entity from carbon in its “old” form: fossil fuel resources (Bridge 2011). The fragmented connections between these two forms of carbon, as well as to other past, present and future controversies (capitalism; globalisation; security; post-colonialism; neoliberalism) take shape through how carbon is assembled. The combination of ubiquity, multiplicity and controversy makes carbon an important focus for sociological examination. This research is an exploration of what has come to reside inside and outside the black box of carbon – what is assembled within the “nuts and bolts” (MacKenzie 2009, p.454). Observing the administration of two standards organisations has offered the possibility of unpicking some of the apparently tightly sewn seams of being a standard, making offsets, and assembling carbon.

The project did not set out to describe or evaluate the legitimacy of the standards in question or voluntary social and environmental standards in general. Instead, this project was aligned with alternative engagements in expertise studies and ANT research that looks through experts to trace out what they articulate as the subject of their expertise (Jasanoff 2003; Mol 2002; Lane 2012; Wynne 2002). This conclusion summarises the key findings and reflects on the theoretical and methodological approaches of this

research. The orientation of the findings reflects the project aims with insights into voluntary standards discussed alongside attention to the enactments of offsetting and assemblages of carbon. This is followed by a discussion of some of the theoretical implications of the research and comment on the benefits and difficulties of the methodologies used in undertaking ethnographic research. Finally, I describe the shifting research environment of this project and offer suggestions for future research in directions that became visible and intriguing during the course of this work.

9.2 Key findings

Certain techniques and expertise have been hotheaded in the conditions of a market for carbon. When interpreted through the formulation of standardised offsets, climate change is a highly complex, technical problem whose solution requires considerable expertise, in particular in measurement, quantification and auditing. If all of this seems obvious to those involved in carbon markets, the challenge from the new carbon economy literature has been to open spaces for the possibility that it is not inevitable. These processes do not happen naturally or automatically it takes effort and time from those involved to enact such realities of carbon.

This research contributes to a growing field of new carbon economy literature that focuses on the socio-technical, daily construction of carbon at various sites. It adds voluntary offset standards to the list of locations studied in depth. This provides original input to the alternately idealised and demonised broader discussions of what voluntary standards and carbon markets are (supposed to be) doing, and relates the daily work of standardising carbon offsets to wider reflections on what has come to be known as carbon. The following sections summarise three key outputs from this project, related to the work of voluntary standards, the assemblage of offsetting and the implications in describing the assemblage of carbon.

9.2.1 Voluntary social and environmental standards

In this research voluntary carbon offset standards were examined as “technological zones” (Barry 2006) that had the potential to maintain or challenge market practices and

responses to climate change “either by bringing out new issues or, in contrast, by reinforcing existing codings” (Callon 2004, p.130). The research set out with a neutral position within the broader debates over the legitimacy and impact of voluntary social and environmental standards (Dolan 2010; Guthman 2007; Bernstein 2002).

In line with the perspective of D.E. Smith (1996; 2001) on organisations, being a standard was found to be simultaneously stable and complete in the recognised existence of an organisation, but multiple and dynamic in the processes of rule updates, clarifications and project reviews, assembled within offices and activities all over the world. What it meant to be a standard was held onto as both an accomplishment as an assemblage (Chapters 4 and 7) and a coherent actor (Chapters 5-6). The institution of a voluntary standard was achieved through robust and granular quantified detail, but also through interactions, facilitation and feelings. The latter aspect, that of standard life from the perspective of those who organise and run standards, has received less attention in the literature debating voluntary environmental and social standards.

The standards were independent in the sense that during my research I did not observe any inappropriate bias for or against a project or organisation. At the same time, the standards were intertwined in relations with a range of public, private and charitable institutions that participate in carbon markets in ways that were compatible and cooperative as well as competitive. The standards could be critical of state activities and had economic motivations to differentiate themselves from the CDM status quo, not only acting “symbiotically” within the UNFCCC mandate (c.f. Levin et al. 2009). However, they also received significant funding from certain governments through grants and as consumers (see Boyd & Salzman 2011). They relied on project developers (private companies or NGOs) coming to them, achieving their certification and paying their fees. Staff looked for ways to support and facilitate developers in reaching the levels that would be assured by their labelling. In their daily work the standards were neither distant from nor uninterested in the fate of projects and other institutions and organisations in carbon markets.

9.2.1.1 *The moral life of standards*

The sociological literature on standards has demonstrated their normative position

(Busch 2011; Bowker & Star 1999; Timmermans & Epstein 2010) - and voluntary social and environmental standards in particular have explicit normative projects (Goodman 2004; Dolan 2010; Bernstein 2002). However, it was a surprising finding of this research that The Gold Standard shied away from “the insertion of moralized meaning” (Goodman 2004, p.901) in their work. The Gold Standard approach promoted their “quality” brand in a way that broadly encouraged an idea of customer choice and neoliberal expectations making consumers sites of authority over what offsetting (or any other commodity) can or should look like. This positioned them as a niche brand, creating a moral glass ceiling on how far they imagined themselves prevailing in offset markets. However, this was not necessarily present in other voluntary offset standards, who looked to present their rules as, alternately, “ethical” choices (at Plan Vivo) or a minimum “benchmark” for the whole market (VCS). This suggested that thinking “inside the neoliberal box” (Guthman 2008) was not necessarily inherent to being a voluntary standard and that the aims of voluntary standards should not be assumed.

Nevertheless, work at The Gold Standard involved profoundly political and philosophical debates. This was visible to a sociologist observer, but it was also discussed openly as part of operating the standard. The details of determining individual rules for specific project types could telescope out to regard a wider “political situation” (Barry 2012), for example when wondering whether a project was demonstrating SD as a guiding principle in their (the project, but also The Standard's) work. Such conundrums reappeared in market-wide debates over the value of endless quantified detail (materiality) and the pessimistic prognoses for development of some regions (suppressed demand) that filtered into the work of standards. The responses presented by both The Gold Standard and Plan Vivo were enacted using what was taken-for-granted about offsetting: altering methodologies, re-defining what would be considered as additional, turning to measurements and quantifications and incorporating more third parties. This “rendering technical” (Li 2007) did not appear, at close quarters, as an attempt to obfuscate the political and social complexity of the issues at hand. Instead, it transpired as attempts to respond to difficult questions with the set of tools most readily available to those trained in orthodoxies of offsetting.

9.2.1.2 Ends of technological zones

It was intriguing to observe how standards made themselves simultaneously pertinent and peripheral to different parts of the lifecycle of a commodity (c.f. Fridell 2009). Voluntary carbon offset standards focused their attention on the sites of offset production. In a shift since 2007/8, by 2010 involvement in the rules of credit transaction via registries had become taken-for-granted as part of the role of The Gold Standard and other standards of voluntary offsets. Further along the chain, scrutinising offset consumption was deemed unsuitable or inappropriate for the intervention by most of those involved in The Gold Standard. However, this was not a universal view, indicating that the ends of the technological zones produced by voluntary standards are uncertain and contestable (c.f. Barry 2001; 2006).

At The Gold Standard two staff in particular understood the core activities of a voluntary standard to be detailed monitoring and measurement and the implementation of best practice, irrespective of whether this involved them in activities of production or consumption, or even outside a market framework altogether. Described in this way, a radically different notion appeared of what a voluntary standard could do. For some staff at least, their technically rendered approach to tackling climate change had only a limited relationship to market based mechanisms. I would posit this as one small example of the multiplicity within grand narratives such as capitalism - “non-coherence... elements of structuring, ordering, that only partially hang together” (Law 2008, p.641). Such insights demonstrate the value of a detailed, located approach to understanding broader discourses (c.f. Mitchell 2002; Larner 2003).

9.2.2 Offsetting and sustainable development

There are ongoing practitioner and academic debates as to whether different types of offsetting should, can or do incorporate SD (Boyd & Goodman 2011; Liverman 2010; UNFCCC 2012; Drupp 2011; Gupta et al. 2008). My approach was to explore the differences in assemblages of offsetting in relation to SD, searching out particularities and variations in current practice rather than generalisations or recommendations for the future. The work of standards is an ongoing epistemological project, and, I have argued, a site that held ontological implications for offsetting and SD. The suggestion is that ideas of SD – local social, economic and environmental features, not just gas emissions

measurements – were being assembled in offsetting, but differently by different actors, resulting in co-existent, fractal assemblages of carbon.

In 2010/11, SD was being made relevant to offsetting by some involved in carbon offset markets, but without a unified definition of SD within offsetting practices. SD was articulated in different versions that could range from quantified, measurable forms, to qualitative meanings that took fetishised shapes as photos and stories, through to definitions that challenged the possibilities for the accumulation of capital through NGO management and smallholder participation. This variety was not necessarily a problem for all those involved carbon markets; The Gold Standard used it to their advantage to build a niche within the market. Different customers and producers were looking for different versions of offsetting, and choosing to understand what should be relevant to carbon in different ways.

Important in this research was the recognition that when SD was being incorporated into activities of offsetting, there were differences in how this assemblage was articulated. For some, concerns for SD were made intrinsic to the process of producing offsets, presented as a necessary feature of the commodity (cognitively legitimate); for others, SD was marketed and discussed as a feature that could be desirable, forming a “boutique” offset, but not automatically inherent to the activity of offsetting (morally legitimate); alternatively SD was sometimes offered as a possibility but not necessarily as a better type of offset (pragmatically legitimate); and finally it could be dismissed or avoided as adding “mess” to “pure” carbon (illegitimate). These differences suggest that it is important for those who are campaigning on offsetting or designing market rules to pay attention not only to how they define SD, but also to how they assemble it within carbon. It was possible, as in the case of The Gold Standard and VCS, to make SD relevant to offsetting at the same time as excluding it from being taken-for-granted as intrinsic to offsetting, carbon and responses to climate change.

9.2.2.1 *Standards translated*

The exploration of multiplicity in carbon offsetting has implications for the use of voluntary standards as proxies in academic and practitioner discussions of offsetting. Firstly, the detailed description of what SD means for The Gold Standard indicated that,

on many occasions, their assemblage of SD with its emphasis on measurement and auditing was ignored (e.g. Gupta 2008; De S  pibus 2008). Furthermore, using The Gold Standard to refer to offsetting that includes SD (e.g. Drupp 2011; Gupta et al. 2008; MacKenzie 2009) overlooks other definitions of SD within offsetting, and other ways of assembling SD as a more (or less) legitimate feature of what it means to offset. Such work might make use of the existence of an SD-focused voluntary standard as a presumption of closure over what SD and offsetting have come to mean within carbon markets. However, as Barry (2012) has argued, such enactments of transnational governance can be understood as ongoing sites of contestation, not a symptom of closure, and cannot be presumed to achieve domination over definition-making (Hanseth et al. 2006). Using one standard as a descriptor for offsetting with (usually The Gold Standard) or without (usually VCS) SD is a useful shorthand in academic and policy debates. However, this research has demonstrated that it elides the heterogeneity that exists within offsetting and potentially closes down important discussions about the purposes and achievements of carbon markets and responses to climate change.

9.2.3 The multiple assemblages of carbon

Carbon has become the metric through which we measure, regulate, discuss and find meaning in climate change and other contemporary political debates (Bridge 2011). In describing different enactments of carbon and noting their capacity for simultaneous co-existence and discontinuity within offsetting, this research has emphasised some of the multiple socio-technical meanings and measures inside of carbon.

The conclusion is that in the present, within the restrictions of offsetting orthodoxies, we already can find and acknowledge heterodoxies within carbon. The work of The Gold Standard was to try and convince buyers that offsets could be something better if they had particular qualities of SD, viz. concerns of site-specific and longer term, as well as global and immediate import found within a tonne of CO₂e. Particularly in the niche occupied by Plan Vivo and some others in forestry carbon, the assemblage of an offset (and therefore of carbon) included attributes that challenged basic assumptions of capitalism and the benefits of private ownership and profit-making. These different assemblages were not only future aspirations or the imagined alternatives from critics. They were existing forms, enacted through the “orthodox” procedures and practices of

carbon markets – auditing, measurement, quantification – and co-existing within the daily practice of carbon market assemblages.

These variations are important to note in future reformations of offsetting and within wider political debates that invoke carbon. What gave carbon its economic value, what made it more attractive to consumers and more amenable to work with for auditors, developers or standards was not the same in all places. What was assumed to be included or excluded by academics, NGOs and governments was not always the same, and was not stable within offset practices. For some, carbon was more desirable when it incorporated site-specific concerns and social issues, but for others, carbon quality meant GHG emissions only. Offsetting could be about definable ex-post calculations with an immediate result (most commonly, projects such as industrial gas reduction filters) but it could also be about ex-ante payments on activities that were supposed to lock communities, businesses or governments into changing longer term decisions (on land use, renewable energy sources etc). The significant conclusion in this research is that carbon is enacted as all of these possibilities within contemporary carbon offsetting practices. Despite being taken-for-granted as a fungible concept, carbon already means different things to different people.

From within the realms of carbon offsetting, exploring the co-existence of these multiplicities of carbon encourages and supports reflections about what is, by definition, not questioned: that which is taken-for-granted. Suchman describes a form of cognitive legitimacy as one that “submerge[s] the possibility of dissent” (1995, p.583). In this regard, what the standards took for granted about offsetting led to the exploration of assemblages that were articulated and enacted, but they were also observed for their complexities and “submerged” relations. Plan Vivo, even though they encouraged producer-producer networks and direct consumer-producer contact for buying offsets, still involved themselves and auditors in authenticating the value of offsetting. In this sense, they participated in shifting definitions of expertise and trust away from producers and towards intermediaries in carbon markets. Even though The Gold Standard were committed to promoting SD, in 2010/11 their work operationalised it as a differentiator for their brand within offset markets, not as something that all offsetting should include. These complex articulations of carbon within their daily enactments of

offsetting may not be captured by a more generalised overview.

In highlighting heterogeneity, it is important to pay attention to where some of the various and multiple definitions submerged what was made to fit together and what was being held apart. For both standards, the incorporation of local impacts and alternative, less polluting versions of activities was only related to carbon at the site of offset production. Consumers were outwith the purview of voluntary carbon offset standards and market discourses indicated they were not a primary site of interest for carbon market participants more generally. Voluntary standards as informational infrastructure in discussions of SD in offsetting play a role in focusing debates over SD onto sites of offset production rather than considering offset consumption. However, as was demonstrated in this research, such limits to discussions or “technological zones” (Barry 2006) are not stable, but permeable boundaries. For some standard staff, it would be unbecoming for a standard to interfere with consumers, for others it just never occurred to them, but for a couple there was no binary separation between production and consumption that standards were obliged to maintain. This research has identified how even when such boundaries appear taken-for-granted and solid, they can be multiple and should not be considered as resolved and unchangeable.

9.3 Theoretical reflections

The theoretical framework adopted in this research has been one of assemblages: looking at how things that might be taken-for-granted as wholes (organisations, commodities, concepts) are made up of a variety of constituents – actors – which must be brought in and made to fit together, or left out and made to separate. I have created a theoretical synthesis between Actor Network Theory and a vocabulary based on Suchman's typology of legitimacy to draw attention not only to whether assemblages were being formed and maintained, but the different ways – perhaps varying thicknesses – that could be found in the links between actors. My description has offered an attempt to understand abstract concepts in their uncoordinated, everyday assemblages. This section reflects on the difficulties of matching data and theory in this project, as well as some of the benefits of the novel theoretical synthesis. It concludes with a consideration of the political implications of such an approach.

Identifying and stabilising actors and assemblages within the data was a difficult and at times treacherous task. Some reduced as they were observed (buyers into end-buyers into end-buyer calculations) others largely dissolved under a critical gaze (SD in the ex-ante confirmation of outcomes from CDM projects), some were juggled as actor-assemblages, at times unified, at times multiple and internally bricolaged (The Standard as it moved between an 'it' and a 'they,' an institution and an achievement). "Sustainable development" was particularly difficult to formulate for use. It mutated through multifaceted, undefined and not only fractal but fractious assemblages and dis-integrations of discourses, measurements, practices and ideological principles. The Gold Standard approach made SD an 'it' that could be talked about (and measured). Other apparitions of the phrase within offsetting were related to significantly different and contradicting understandings of the concept and practices. Some of the academic critique on SD presents it as chimerical and a sham (Banerjee 2003). Maintaining a grasp of SD as an actor/assemblage was, at times, an imposition of unity for the sake of clarity. However, by including both discussion of the assemblage of SD as well as invoking it in actor form in Chapters 4 and Chapter 6, I hope that the balance of description and analysis allows the reader to appreciate the consolidation of SD that I observed within offsetting practices, as well as times when the phrase could only be related to a tenuous, nebulous shadow. I have tried to render both present in this document as both were found to be present in ethnographic observation.

A significant challenge to this approach was working out a way of describing the CDM assemblage of offsetting and SD. The approach in the CDM texts was described as offering SD as cognitively relevant to offsetting, but with SD as a shortened assemblage referring mainly to a letter granted before any activities on a project site. Many working with CDM credits acknowledged that SD was not a particular (or for some, any) concern or relevant to their assembling of offsetting. Given the scale of the CDM market up to 2011 and its influence on all later markets (compliance and voluntary) it is an important case to be able to discuss within this analysis. At the same time, it was not the central focus of this research as many perspectives of CDM interpretations of SD have been covered previously (Nussbaumer 2009; Gupta et al. 2008; Drupp 2011; Lansing 2011). The theoretical framework selected was chosen as the most illuminating for my central focus on standards, although I acknowledge that it may not provide as

detailed and nuanced description of the CDM approach to SD.

As noted in the Discussion, a more orthodox operationalisation of legitimacy would have been to look at the legitimacy of organisations or groups (c.f. Preda 2005a; Cashore et al. 2004). However, incorporating it within post-ANT to focus on different types of assemblages has been a fruitful development in allowing and supporting a nuanced description of the assemblages that were observed in carbon offsetting. Furthermore, the use of Suchman's terms to describe assembling proved valuable in explaining my findings to a range of audiences in comparison with the vocabulary available from ANT and post-ANT research. Thus, whereas “entanglement” was not an image that resonated with carbon market actors and led to the impression that I was describing their work as uncoordinated or messy, making things “taken-for-granted” did not prove such a linguistic barrier. Suchman's choice of the term “moral” for one type of legitimacy was trickier to negotiate and explain, but using the word “desirable” made this category easier to understand. This was especially the case when talking to people within carbon markets, many of whom were uncomfortable with the term “moral” (because it was sometimes interpreted as moralistic) being applied to their work. In this sense, adding Suchman's typology gave heuristic benefits as well as offering greater nuance to an ANT approach, although it had to be adapted for its audiences.

9.3.1 Politics and post-ANT

The criticism that describing construction, multiplicity and fragility is not enough of a political act has been raised directly against post-ANT (Saldanha 2003, p.427) as well as of course more generally by Marx (n.d. [1845]). Nevertheless, this research maintains an “oblique” rather than explicitly normative position in keeping with the post-ANT framework used. The approach taken refrains from assigning causality and, therefore, responsibility for the nature of assemblages. Mol describes the capacity for political impact from her research as “analysing the norms embedded in practices while interfering in them through adding a novel, oblique analysis” (2013, p. 381). Such a stance comes across all too easily as being circumspect, but it upholds the STS and anthropological position that in identifying how “it could have been otherwise” (Star 1991; Woolgar & Lezaun 2013) in the present, academics can make a difference to the future.

However, I suggest that this research and other post-ANT work that attends to fractal assemblages and multiplicity generate a stronger political stance than offering hypothetical alternatives. By concentrating on multiplicity, the project produced evidence of how situations were *already otherwise* within the materialities of carbon offset markets. This is an important statement because it challenges assumptions about the immutability of market processes, what gets labelled globalisation, neoliberalism or capitalism (c.f. Mitchell 2002; Larner 2003). I argue that there is a significant and empowering difference between presenting alternative realities that are already enacted and offering only plausible imagined alternatives.

9.4 Reflections on an ethnographic method

Undertaking this study as an ethnography was a challenging and exciting aspect of the research experience. I conclude here on the benefits of such an approach for this research, as well as the difficulties it entailed in terms of managing interview data along with participant observation, and the hurdles of confidentiality.

The direction of research was strongly shaped by understandings gained from the preparatory work of literature reviews in the process of standard-making, carbon markets, and debates over sustainable development and during on-site participant-observation. Although the focus in Chapter 7 reflects some academic critiques on voluntary social and environmental standards' emphasis on production rather than consumption, in this research the topic became a matter of interest directly as a result of comments heard around the office, rather than texts read in the library.

An organisational ethnography was especially valuable in studying an activity such as offsetting, with its few publicly visible outposts. I think it would have been harder to identify important features of the work of standards and the state of the art in offsetting in 2010/11 had I not gained an insider's perspective. Being able to listen to technical staff and the TAC work through new rules and discuss alternatives and implications allowed me to understand regulations and methodologies in ways that would have not have been possible by reading rule updates and clarifications on The Gold Standard

website. At the same time, the work of The Standard is carried out through intermediaries at locations all over the world. As Barry (2006, p.244) and D.E. Smith (2006) have noted, a physical location is only one facet of the life of such institutions and “you could not be sure in what sense you had actually found the [organisation] in whatever building houses the head offices of the corporate entity” (D.E. Smith 2006, p.19). Hence the need to pay attention to the relations with others and with texts in Chapters 4, 5 and 7. This research captures one – but only one – aspect of standard activities and complements other work that scrutinises their sites of implementation (e.g. Loconto 2010; Dunn 2008; Fridell 2009).

While Barry (2006, p.244) is sceptical about the insights to be gained from inside standard organisations, the scarcity of physical locations from which to view the daily interactions of carbon markets (rather than offset projects) made it a worthwhile location. The data showed that Barry (2006) was correct to suggest that there would be topics – such as consumers – that were unrecognised by The Standard, but this did not mean that such issues were unrecognisable from an ethnographic perspective. Intentionally noting and exploring what was *not* being discussed was one useful strategy for considering what was missing in the perspective of this location.

On the other hand, there were particularities to an ethnographic approach that presented challenges as well as benefits. Working inside an organisation over a period of nine months made it easy to forget that my goal was a PhD that had to materialise from the daily experiences, rather than getting caught up in the work and responsibilities of being part of a team. Despite not being paid by The Gold Standard, I found I had to try consciously to stop feeling guilty if I was reading academic literature or observing other people work instead of doing the tasks assigned to me as an intern. Going part-time for the final months of the internship helped refocus my attention on academic analysis, although it still took some months to reformulate the experiences and tacit knowledge that I had gained during the internship as data for the PhD.

I might have asked more questions during my time at both standards, but sometimes I felt uncomfortable and false in pursuing a conversation with the knowledge that I was thinking of it as data-gathering whereas for others it was probably seen as a casual chat.

Engaging people in their working lives, and adding actants alongside humans in theoretical frameworks, does not alter the humanity of an ethnographic project and the consequent difficult balances of respect, fairness, intellectual critique and honesty that this must imply. One way I resolved this was to conduct semi-structured interviews with some of my co-workers near the end of my fieldwork. This in part explains the weighting of data in this thesis towards interview quotes (especially in Chapter 7).

There are some debates about whether interviews within ethnographies should be considered as mixing methods, or if interviews form part of an ethnographic experience (Neyland 2008). In this case, I feel that the interviews provided a distinctly different type of interaction between myself as a researcher and the interviewees, but one that was only realisable within an ethnographic project. I think it was immensely valuable to offer my colleagues the explicit, identified time and space (and one-to-one confidentiality) provided by an interview to discuss more abstract questions relating to offsetting and their work. For those with whom I had worked closely, conducting interviews felt a more respectful way of including their opinions as data rather than using notes from conversations where they were not always thinking of me as an observer of their world, but as a participant in it. Interview responses generally confirmed the understandings already gained of how different individuals were thinking about the topics we discussed, but the interviews gave them the opportunity to formulate and clarify their rationales more explicitly – or think about their arguments from different angles for the first time.

At the same time, the relationships and rapport I had built up with these individuals through my internship was significant – the value of these interviews cannot be abstracted from their location within a wider ethnographic project. I cannot know if a stranger asking the same questions (or me, before the start of my internship) would have elicited the same responses, but I am certain that I would not have posed the same questions, or understood their answers in the same detail and context had I not also worked alongside them inside the organisation. As a result, I prefer to think of these interviews as a core element of my ethnographic experience, but one which offered a respectful formalisation of the interaction between the observer and observed in the co-production of data.

9.4.1 Ethnographic confidentiality

Part of the risk of an ethnography is that, assuming access is granted, the data collected may be unusable. Initially I feared that this might happen because I did not know how to make what I was seeing “academic” or interesting enough. These fears proved to be unfounded, but the matter of confidentiality turned out to be more of an issue at late stages in the production of this thesis. As I had been given access to meetings, events and discussions, the responsibility for taking decisions over where the boundaries of confidentiality lay was left for me to test as I started writing up. My contract included significant financial penalties and legal liabilities in the case of publishing confidential data. These factors were as much a psychological barrier as a financial one when it came to exploring some parts of the data (see Annex 5). Perhaps other researchers would have taken this in their stride, and it implied no criticism of Standard staff who were simply doing their job in writing contracts and protecting Standard interests, but fear of pushing too far made me unwilling to broach some topics which could have made for additional insights and analysis. However, there was so much to discuss of great academic interest to me that I do not feel that I have done a disservice to my data.

My hesitancy was validated somewhat when the use of internal comments, discussions and texts in this thesis was minutely scrutinised and had to be negotiated in detail with both The Gold Standard and Plan Vivo. The particular sensibilities of organisations who work in commercial contexts became notable during these negotiations. They had confidentiality agreements with other entities that had to be respected, as well as their own views on what they wanted highlighted about their work and what they deemed inappropriate for others to know about their internal discussions and processes. The negotiations helped to improve the quality of my prose, confirm information and provided useful final feedback on my analysis of their work, but also led me to remove quotes and information that I would have liked to include, but that were deemed to be too sensitive to publish.

The process of negotiation made me reflect on the amount of information about the public as consumers, policy-making and implementation through market mechanisms that are not in the public domain. As I argued at the start of Chapter 3, the value of social scientists is not necessarily that we are more capable of *having* insights than

people directly involved in a situation, but that we see the value of and have the means to reflect on and *share* these insights. At various stages of negotiations we considered putting 1, 5 or 10 or more year blocks on my thesis publication as ways to allow me to submit the thesis for examination. As more and more of public services and “the commons” move into public-private partnership and private ownership, the data produced and the analysis that this can receive is harder to access and undertake for the public good rather than for private, profit-making interests. Gillian Tett has pointed this out in relation to US consumer data on spending habits and poverty (2013). Locating my (publicly funded) research in the context of a wider issue of public access to information made me choose a negotiation strategy with an aim of early publication, even if this meant delays and alterations to the final work. I am satisfied that the changes have not impacted on my analysis and my greater awareness of the scale and impact of privatised barriers to the development of academic research and public understanding have been a fruitful outcome of this final hurdle.

9.5 Interesting times for carbon

In this final section I reflect on the changes that have occurred in carbon markets and international responses to climate change during the course of this research and identify the implications for this research and for future investigation.

This project had the backhanded blessing of taking place during interesting times in carbon markets. As a project idea it began in late 2009, when carbon markets were central to more-or-less concerted efforts by the UN to bring about a global agreement to tackle climate change. As the work continued, the phrase “post-2012” came to take on sinister significance not just as the end of my PhD funding, but the end of any global agreements on a cap for greenhouse gas emissions and the rules of the carbon game. I and everyone else in the CDM market were working to the same deadline. During the course of the fieldwork, the price of carbon declined steadily and then dramatically. Researching carbon markets began to feel like it might be an esoteric footnote to the appendix of broader environmental discussions. By the time writing finished, carbon markets still existed but only as fragmented shadows of their former bullish selves. In early 2013, EU activities set to last until 2020 mean it is still possible to talk about a large, regional compliance market, although even this has become increasingly shaky

and under attack. Ongoing legislative work in California, China, Japan, New Zealand, South Korea and Australia allow, for the moment, further discussions of regionalised carbon markets. Market participants still see (or hope for) the possibility of a phoenix market rising from the ashes of UNFCCC failures to renegotiate grander international commitments. But gone are the days when it seemed even the United States was close to regulating carbon offsetting at a federal level and an international, integrated and booming carbon market was just around the corner.

However, as a researcher specifically interested in the contingency and construction of economic, political and environmental interactions, I am the last to be allowed to complain about a shifting research environment. Where I had pitched the project as looking at the reform of a relatively (though always dynamically) stable system, the developments in inter-governmental negotiations overshadowed and overwhelmed even those explicitly aiming to reform the carbon markets. During the course of three years, I was witness to the demise of activities, institutions and beliefs that had seemed relatively sturdy when I started. Participants' faith in measuring, auditing, standards and offsets when other apparent certainties (regulations and regulators, caps and international agreements) were being shaken became easier to spot and all the more fascinating to study. The speed of change inevitably dates this research, as references to the CDM, for example, are much less relevant than they were when the project started. Time will tell whether this work comes to resemble a contemporary account of seventeenth century Dutch tulip bulb-buying, or whether it marks something more akin to the first abortive attempts in aviation. But in either case, contemporary accounts of change are useful when the cases in question are identified as part of larger debates. With this in mind, I have situated my project within the wider discussions of carbon and climate change.

The battles over the definition of carbon are ongoing and fierce, although not always immediately perceptible. In the UK, energy debates now focus on low/no carbon rather than renewable energy, to the advantage of the nuclear power industry and an emerging oxymoronic clean coal lobby. If we are now working in a “carbon economy” (Newell and Paterson 2009) and Western political systems can be described in terms of “carbon democracies” (Mitchell 2009), attending to what is being included and excluded, and

assembled in variously cognitively, moral or pragmatically legitimate ways within and outside the multiple definitions of carbon is of utmost importance.

9.5.1 Further research

The shifts in the landscape of carbon markets sounds the horn for future researchers to go out into the (battle)fields and see what has changed, although this now seems to mean visiting multiple markets in different regions (California, New Zealand, South Korea) and more comparative work than a UN-led second phase would have entailed. At this point, these analyses may be looking at the different causes of market failure in contrasting socio-technical and political contexts rather than how markets are successfully enacted and adapted.

More specifically, end-buyers appeared in this project as a ghostly presence largely outside the realms of the standards. What was glimpsed of them was intriguing, in their presence and absence within the frame of this research. Lovell et al. (2009) pointed out the dearth of conceptualisations of “ethical consumers” as corporations rather than individuals. Taking one step further, Levin et al. (2009) and Boyd & Salzman (2011) have suggested that it has been governments acting as buyers (rather than regulators) who have driven the demand for SD related offset credits, a suggestion somewhat supported by market data (Peters-Stanley et al. 2012). Governments-as-consumers are a curious feature of offset and other public-private hybrid (pseudo)markets. In the UK and in other neoliberally dominated and austerity-bound countries, governments are playing this consumer/regulator dual role in a growing number of policy areas. The implications of this on how decisions get made, the forms of expertise and socio-technical assemblages that it produces would be a fascinating area to bring to greater attention in ethnographic detail, assuming that access was allowed and the probably very large hurdles of confidentiality agreements could be overcome. These latter factors also relate to the discussion above about public access to data. I think academics have a profoundly important role in explaining and scrutinising the quotidian detail of these increasingly private spheres, and ensuring that such knowledge remains a public good.

From a disciplinary perspective, I would join many others (noting MacKenzie (2009) as the most personally motivating) in emphasising the value of social science engagement

with the debates over climate change. Detailed socio-technical, politically aware research is still comparatively rare in discussions of climate change and policy, as I discovered personally when talking about my work in academic settings. By and large, sociologists, anthropologists and human geographers welcomed my qualitative approach, but more often had quizzical expressions when I explained that I had chosen to study those in charge of rather than affected by carbon markets. However, I was told by economists and positivist political scientists (my conference co-presenters on carbon markets) that the combination of my approach and empirical interests were “courageous!” but “not academically valid” because I intentionally mixed technical matters and explicitly political debates. Research that probes the assumptions and framing of debates rather than facilitating the roll out of policy directives or modelling and evaluating success on the terms already taken-for-granted seems sorely needed as part of a global response to climate change. This type of empirical work can give pause for thought over what has become tacit, closed and submerged (Suchman 1995) in debates about climate change and what is being measured, controlled, or maintained when we talk about carbon and markets. I hope that this research can contribute to such an effort.

Chapter 10: Bibliography

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Annex 1: Consent forms

Consent form for research participants

Project Description

I am a PhD student in Science and Technology Studies at Edinburgh University with funding from the UK Economic and Social Research Council. They fund my fieldwork with the Gold Standard.

The preliminary outline for my research project is about voluntary standards in carbon markets and how they manage the balance between reform, destabilisation and legitimacy in carbon markets. My theoretical interest is in how organisations build legitimacy and balance attempts at reforming systems (for example, by introducing or altering standards) with maintaining the stability of the market and confidence in a complex commodity such as carbon. In practical terms, I am interested in understanding and taking part in the processes of decision-making and implementation of the Gold Standard.

Data Confidentiality

The data I gather and produce will be used solely for my PhD and related academic writing or presentations. PhD are published in the public domain. My data will not be given or sold to any commercial or not-for-profit organizations.

I have already signed a Non-Disclosure Agreement with the Gold Standard Foundation which means I have agreed that I will not disclose any information I receive from the Gold Standard Foundation or any staff members, written or orally, if it should be regarded as confidential unless I have the express prior written consent of the Gold Standard Foundation. All information shall be regarded as confidential even if it is not marked or declared confidential at the time unless it is undoubtedly in the public domain or it becomes part of the public domain.

Consent Form A and B

Part A

Alongside the Non-Disclosure Agreement, I would like to ask each GS staff member to sign a **consent form** to show that they agree to participate in my research. This is to indicate that everyone has

- 8 read and understood a description of my project (above)
- 9 had the opportunity to ask any questions about the project, now or at any time in the future
- 10 are aware that their employment activities and comments made in their professional capacities may be used as part of my research
- 11 understand that they will not be named in my research, but their job titles may be used to identify statements made or authorship of documentation that is referred to where it is deemed relevant.

I have read the above statement and agree:

Name:

Signature:

Date:

NB For practicalities (and the environment) this form can be signed with an electronic signature. I will also be able to use an email response from your GS account with your name typed in. I will take a screen shot of the email showing the address it was received from and the data received and save it to show that consent was given.

Part B

I would also like to ask all staff members to allow me to mention some personal details if I feel they are relevant to my research. This may include for example; previous work experience, academic background or nationalities. This information will not be automatically included in my work, only where I see it to be relevant to my data analysis. This would not include, for example; private comments made about other staff members, private comments about the organization or about issues unrelated to Gold Standard and my research that could be damaging to the staff member involved.

Before I use any such personal details I will ask the person in question to confirm they are happy for the precise information to be included.

If anyone has further questions, feels concerned or unsure about this issue, please feel free to sign only the first statement and contact me or discuss with other colleagues the use of personal details. I will of course respect any decisions that individuals take to opt out of this section, and will therefore use information about them only in their professional capacity.

I have read the above statement and agree:

Name:

Signature:

Date:

Thank you
Corra Boushel
Research Intern

Copies of email that accompanied consent forms

Copy of email and text sent to all Gold Standard staff who worked at the Foundation during my fieldwork. All responded and signed Parts A and B.

Dear all,

For my research I am asking all staff members to sign a consent form. I already have consent from the organisation as a whole to undertake the research with GS, but as individuals you also have the right to declare (or withdraw) your consent to be participants in my research. It may seem strange, but I am obliged to do it for my university, and I also think hopefully it's a sign of my respect for each of you as people, not just GS employees!

Below there are 2 places to sign, if you agree to the statements.

Thanks for your time,

Corra

Copy of email sent to all Board Members and TAC members present (in person or via

Skype) at meetings that I observed. No queries or concerns were raised by any members.

Dear all,

As part of the research I have been undertaking with Gold Standard I have made notes at Board and TAC meetings. I already have consent from the organisation as a whole to undertake the research with GS, but as individuals you also have the right to declare (or withdraw) your consent to be participants in my research. I am obliged to ask for this as part of my research ethics agreement with my university, and I also see it as a sign of my respect for each of you as individuals as well as within your professional relationship with Gold Standard.

If you disagree with or have concerns about any part of the following statements, do not hesitate to get in touch with me.

Thanks for your time,

Corra

Copy of consent form for semi-structured interviews

This email was sent in advance of all interviews:

I agree to be interviewed as part of Corra Boushel's PhD in Science and Technology Studies. I understand that the interview will be recorded and stored as confidential data, which may be attributed to me in my official (present or past) role in relation to The Gold Standard. I understand that I will have the right to see a copy of the transcript of the interview and be free to add comments or corrections, but will not gain editorial control over the analysis given to data collected. I am aware that I can choose not to answer any questions and withdraw from the interview at any time.

Signed:

Any information given during this interview that could be considered commercially sensitive by The Gold Standard is already automatically protected due to the Non-Disclosure Agreement signed by the researcher with The Gold Standard. For further information please feel free to ask questions or request a copy of this Non-Disclosure Agreement.

All interviewees were asked again at the start of the interview if they minded being recorded; all accepted. One interview was only part-recorded due to technical difficulties. All interviewees were sent transcripts of their interview for their correction or clarification.

Annex 2: List of Interviewees and Interview Questions

List of Interviewees

	Organisation	Role	Date of interview	Interview type
1	Plan Vivo	Operations and Governance Director	June 2010	In person
2	Gold Standard	Former CEO (2004-2010)	March 2011	Skype
3	Gold Standard	TAC Member (A)	April 2011	Skype
4	Gold Standard	Board Member, Initiator	April 2011	Skype/phone
5	Gold Standard	Chair of TAC, Board Member	April 2011	Skype
6	Gold Standard	TAC Member (B)	April 2011	Skype
7	Gold Standard	Chair of Board	April 2011	Skype
8	Gold Standard	Board Member	April 2011	Skype
9	Gold Standard	Regional Manager	May 2011	Skype
10	Gold Standard	CEO	June 2011	In person
11	Gold Standard	Marketing and Communications Manager	June 2011	In person
12	Gold Standard	Head of Stakeholder Engagement	June 2011	In person
13	Gold Standard	General Counsel and Director of US Markets	June 2011	Skype
14	Gold Standard	Technical Director	June 2011	In person

Interviews have been listed in the order in which they were undertaken. 'Organisation' refers to which organisation they are linked to in this research. Board members, TAC and the former CEO were working for other organisations at the time of their interviews, but they were being asked to respond from their role within (or previously with) The Gold Standard.

Interviews were semi-structured although some in a different order as was judged appropriate to clarify previous responses and smooth links between questions. Prompts differed depending on the interviewee and their responses, but attempts were made to maintain consistency over examples used where interviewees asked for elaboration of a question.

Interview Questions

(Confirmation of my role, recording interview, confidentiality of responses).

(For Staff: what does your role/work involve?)

How did you get involved in GS? And how did that continue?

What impact do you think GS has made on carbon markets?

Can you give specific examples? Any downsides or negatives?

What makes GS credible in your eyes? Respectable? Effective?

How has the organization managed that? How could it be more credible in your eyes?

†How much do you think GS can or should be responsible for when it comes to projects, credits and the broader carbon market?

*At the moment it's the project lifespan from design to the end of issuance. But up or down-stream or the carbon markets as they attach to other markets or other issues, where do you think what are the limits to the GS authority or where could they be different?

Given the uncertainty in post-2012, how do you think GS has the potential to be effective?

Working with others? Doing carbon? What do you think it 'should' be doing?

How do you think GS fits into environmental movements more broadly?

(Offer interviewees chance to ask questions about my research. Confirmation that they would receive email of transcript, welcome to add to or clarify their answers).

† Question not asked in interview 1.

* Prompt added from interview 3 onwards (missing in interview 8 due to time constraints).

Annex 3: Table of voluntary offset standards

The standards listed include SD-only and national or regional specific standards.

American Carbon Registry: ACR Standard (Version 2.1 2010)	
Founded in 1996, backed by an American NGO Winrock International. Has three simultaneous standards in operation; ACR Standard, Forest Carbon Project Standard and ACR Nested REDD+ Standard. It has submitted for eligibility under a future California compliance market.	
Scope	
Forestry, agriculture and clean energy (includes improvements to fossil fuel energy processes)	
Carbon accounting only (allows tag-on SD).	
<i>Average credit price All years: 2011 (US\$)</i>	\$4 : \$5.8
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	34.7 : 2.9
<i>Number of Projects Validated</i>	68

Brasil Mata Viva (2011)	
Developed in 2011 as a Brazil-only, forest carbon standard on a Payment for Ecosystems Services model for rural areas.	
Scope	
Agroforestry, avoided deforestation in rural areas.	
Carbon accounting and SD benefits.	
<i>Average credit price All years: 2011 (US\$)</i>	\$12 : \$25
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	14.84 : 4
<i>Number of Projects Validated</i>	14

CarbonFix Standard: CarbonFix (Version 3.2 2011)	
Developed in 2007 by an independent NGO, based in Germany. In October 2012 The Gold Standard took over CarbonFix.	
Scope	
Afforestation, reforestation, natural regeneration and agroforestry.	
Carbon accounting and SD benefits.	
<i>Average credit price All years: 2011 (US\$)</i>	\$13.6 : \$17.5
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	0.7 : 0.04
<i>Number of Projects Validated</i>	5

Chicago Climate Exchange: CCX (Several publications 2003-12)	
Developed by economists and traders, CCX ran as a voluntary cap-and-trade scheme until 2010 with its own trading platform, credit units and membership (American). Offsetting was allowed alongside the trading in allowances. Since 2011 there has been no cap, but an offset standard has been developed under the same brand.	
Scope	
No set scope. Currently includes AFOLU, clean and renewable energy, methane capture, gases, fuel switching and others.	
Carbon accounting only.	
<i>Average credit price All years: 2011 (US\$)</i>	\$1.5 : \$0.1
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	89 : 24
<i>Number of Projects Validated</i>	339

Climate Action Reserve: CAR	
Established in 2008, an NGO registry and standards organisation. Four of their methods have been accepted for pre-compliance under the Californian compliance market.	
Scope	
No set scope. Currently includes AFOLU, methane capture (including from fossil fuels), gases.	
Carbon accounting only.	
<i>Average credit price All years: 2011 (US\$)</i>	\$6.9 : \$7.3
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	21 : 3
<i>Number of Projects Validated</i>	126

Climate, Community & Biodiversity Standards: CCB (2nd edition 2008)	
Partnership between NGOs begun in 2003. SD-only standard only applicable to AFOLU. The standard rules do not require a carbon accounting standard to be used alongside.	
Scope	
Land-based activities.	
SD only.	
<i>Average credit price All years: 2011 (US\$)</i>	\$5.4 : \$4.7
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	(not available) : 0.5
<i>Number of Projects Validated</i>	44

The Gold Standard (Version 2.1, 2009)	
Conceived in 2001 with the backing of WWF and other NGOs. There have been three versions of the standard, and it applies to the voluntary offset and CDM compliance market.	
Scope	
Energy efficiency and renewable energy. Composting since 2011.	
Carbon accounting and SD.	
<i>Average credit price All years: 2011 (US\$)</i>	\$12.1 : \$10.4
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	8 : 5
<i>Number of Projects Validated</i>	145

ISO-14064 (2006)	
Launched in 2006 to provide a “policy-neutral” accounting standard. It provides definitions and procedures for GHG accounting, but does not prescribe specific criteria for additionality, only general guidelines. It was proposed as a protocol on which other standards could base their programmes, but is also used as a stand-alone programme.	
Scope	
All.	
Carbon accounting only.	
<i>Average credit price All years: 2011 (US\$)</i>	(not available) : \$5
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	(not available) : 3
<i>Number of Projects Validated</i>	(not available)

Japan's Offset Credit Scheme: J-VER (2008)	
Launched and managed by the Japanese government, but not a compliance scheme. Meths based on ISO-14064.	
Scope	
AFOLU, fuel switching, methane capture, clean/renewable energy.	
Carbon accounting only.	
<i>Average credit price All years: 2011 (US\$)</i>	\$115 : \$115
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	(not available)
<i>Number of Projects Validated</i>	180

Korean Verified Emissions Reduction Program: K-VER (2005)	
Administered by the Korean government since 2005 and only applicable for projects in Korea, but not a compliance scheme.	
Scope	
(unknown), use CDM meths or develop meths based on ISO standards.	
Carbon accounting only.	
<i>Average credit price All years: 2011 (US\$)</i>	\$4.5 : \$5
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	12 : 7.4
<i>Number of Projects Validated</i>	717

New Zealand Permanent Forest Sink Initiative: PFSI (2006)	
A government initiative to register land permanently forested after 1990 to attempt to claim credits under the Kyoto Protocol, voluntary registration.	
Scope	
AFOLU.	
Carbon accounting only.	
<i>Average credit price All years: 2011 (US\$)</i>	\$17 : (not available)
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	0.3 : 0.05
<i>Number of Projects Validated</i>	43

Pacific Carbon Standard: PCS (Version 1 2011)	
Voluntary offsetting standard established by the state government in British Columbia, Canada for projects within the state.	
Scope	
Fuel switching, energy efficiency and carbon sequestration (forestry).	
Carbon accounting only.	
<i>Average credit price All years: 2011 (US\$)</i>	\$25 (started this year)
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	1 : 0.4
<i>Number of Projects Validated</i>	29

SOCIALCARBON (Version 4.2, 2011)	
SD-only standard that began as a Brazilian forest carbon only standard, but is now applicable to a wide range of projects and since 2010 has projects validated outside of Brazil. It is only valid when used in conjunction with a carbon accounting standard.	
Scope	
Potentially all projects that use a voluntary carbon accounting standard. Currently only fuel switch and clean/renewable energy projects validated.	
SD only.	
<i>Average credit price All years: 2011 (US\$)</i>	\$7.3 : \$6.3
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	3.3 : (not available)
<i>Number of Projects Validated</i>	50

Plan Vivo (Second edition 2008)	
Developed as a standard in 1998, now an independent charity.	
Scope	
Community-based land management and agroforestry.	
Carbon accounting and SD.	
<i>Average credit price All years: 2011 (US\$)</i>	\$ 7.7 : \$7
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	1.1 : 0.8
<i>Number of Projects Validated</i>	7

VER + (Version 2.0 2008)	
Developed by auditing company TÜV SÜD using CDM methodologies for projects that are not eligible for CDM or JI.	
Scope	
Same scope as CDM (no nuclear, large hydro or HFC). AFOLU are acceptable. Currently mainly clean/renewable energy, methane capture.	
Carbon accounting only.	
<i>Average credit price All years: 2011 (US\$)</i>	\$5.7 : \$15.7
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	4 : 1
<i>Number of Projects Validated</i>	34

Verified Carbon Standard: VCS (Version 3, 2011)	
Launched as the Voluntary Carbon Standard in 2007, backed by a mixture of NGO and carbon market organisations including the International Emissions Trading Association.	
Scope	
Broad scope including clean/renewable energy, methane capture, fuel switch, and since 2008 AFOLU, since 2011 REDD.	
Carbon accounting only (allows tag-on SD).	
<i>Average credit price All years: 2011 (US\$)</i>	\$4.8 : \$3.7
<i>Total Volume (Million tCO₂e) Verified: Retired</i>	92 : 15
<i>Number of Projects Validated</i>	738

Adapted from Peters-Stanley and Hamilton (2012) with additional information from Peters-Stanley et al. (2011) and standard websites.

Annex 4: The Gold Standard do no harm assessment

Annex H

Guiding Questions for “Do No Harm” Assessment



- 1. The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.**
 - Are human right abuses common in the country and/or region?
 - Does the project respect life, liberty, and security?
 - Does the project respect personal and political freedom?
 - Does the project respect economic, social and culture freedoms?
 - Does the project respect cultural property?
 - Does the project respect the uniqueness of indigenous people?
 - Is one of the project participants an arms producer or distributor?
 - Is one of the project participants a land mines producer or distributor?
 - Has the Host government ratified the relevant conventions on Human rights?
 - Does the Host country have its own legislation in place prohibiting the violation of the principle?
 - Does the Host country actively enforce the compliance with this principle?

- 2. The project does not involve and is not complicit in involuntary resettlement.**
 - Does the project result in any person's relocation?
 - If yes, has the project sufficiently demonstrated that these people can stay or move voluntarily after project implementation?
 - Is the project area limited in access to people which previously had access?
 - Will the project have an economic or other impact on people living nearby?
 - Has the project sufficiently demonstrated that any limitations caused by the project will not force people to relocate?
 - Has the Host government ratified the ILO convention 169?
 - Does the Host country have its own credible legislation in place prohibiting involuntary resettlement?
 - Does the host country actively enforce the compliance with the principle?
 - Is involuntary resettlement common in the country and/or region?

- 3. The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage**
 - Does the project alter, damage or remove tangible property and sites having archaeological, paleontological, historical, cultural, artistic or religious value?
 - Does the project alter, damage or remove tangible property and sites with unique natural environmental features that embody cultural values?
 - Does the project alter damage or remove intangible forms of culture, such as cultural knowledge, innovations, and practices of communities embodying traditional lifestyles?
 - Has the project sufficiently demonstrated that the cultural property will not be impacted negatively?
 - Has the Host government ratified the relevant convention?

- Does the Host country have its own credible legislation in place prohibiting damage of cultural property?
 - Does the host country actively enforce the compliance with this principle?
 - Is alteration, damage or removal of cultural heritage common in the country and/or region?
- 4. The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights**
- Are employees' freedom of association and right to collective bargaining violated in the project?
 - Has the Host government ratified the ILO convention 87(freedom of association) and 98(right to collective bargaining)?
 - Does the Host country have its own credible legislation in place enforcing the right of freedom of association?
 - Has the project demonstrated that it will not limit freedom of association and right to collective bargaining more than required by law?
 - Does Host country actively enforce the principle?
 - Is employee association and collective bargaining common practice in the country/region?
- 5. The project does not involve and is not complicit in any form of forced or compulsory labour**
- Does the project involve any type of forced or compulsory labour?
 - Are all employees offering their services on a voluntary basis?
 - Are employees free to quit their services without the menace of penalty?
 - Has the Host government ratified the ILO Convention 29 and 105 on elimination of forced and compulsory labour?
 - Does the Host country have its own credible legislation in place prohibiting forced and compulsory labour?
 - Is forced or compulsory labour common in the country and/or region?
- 6. The project does not employ and is not complicit in any form of child labour**
- Does the project employ or intend to employ children below the age of 15 in regular work or hazardous work?
 - Does the project employ or intend to employ children below the age of 18 in hazardous work?
 - Has the Host government ratified Convention 138(minimum age) and convention 182(worst form of child labour) under the ILO Declaration on Fundamental Principles and Rights at Work?
 - Does the Host country have its own credible legislation in place prohibited child labour?
 - Does the host country actively enforce the principles of Child labour?
 - Is Child Labour common in the country and/or the region?

- 7. The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.**
- Does the project's employment policy district, exclude or prefer people based on race, colour, gender, religion, sexual orientation, political opinion, national extraction, social origin or physical or mental disability?
 - Has the Host government rarefied Convention 100(equal remuneration) and convention 111(Discrimination in employment/occupation) under the ILO Declaration on Fundamental Principles and Rights at Work?
 - Does the Host country have its own credible legislation in place prohibiting discrimination?
 - Does the Host country actively enforce the principle of Discrimination?
 - Is discrimination at work common in the country/region?
- 8. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.**
- Has there been a credible and sufficient investigation to identify potential hazards for workers?
 - Are workers exposed to hazardous chemicals or other material?
 - Are workers involved in processes which are potentially dangerous?
 - Have other hazardous been identified?
 - Has the risk of sexual harassment and abuse of women been considered sufficiently?
 - Is there an emergency action plan in the case of accidents for every site?
 - Is there an insurance or pension system for workers in place in case of health impacts?
 - Has the government ratified relevant convention?
 - Does the host country have its own credible legislation in place enforcing the principle?
 - Does the host country actively enforce the principle of work environment?
 - Does the Host country actively enforce the principle?
 - Are unsafe work environments common in the country and/or region?
- 9. The project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle.**
- Does the project include any planting, agricultural or similar activities?
 - Does the project involve invasive species likely to cause harm?
 - Does the project produce chemicals that are excessively dangerous to the environment?
 - Does the project deliberately use genetically modified organisms?
 - Does the project involve large mono-culture plantations?
 - Does the project produce hazardous waste?
 - Has the Host country ratified all conventions relevant to this project?

- Does the host country have its own credible legislation in place enforcing the principle?
 - Does the Host country actively enforce the principle of precautionary approach?
 - Are violations of the precautionary principle common in the country/region?
- 10. The project does not involve and is not complicit in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value, or (d) recognized as protected by traditional local communities.**
- Is this a Greenfield project or does additional lands need to be used for project purpose?
 - Are there critical natural habitats located at or close to the project site?
 - Could project activities create increased stress on this site through activity displacement or invasive species introduction?
 - Did the project consult protected area sponsors and managers, local communities and other local relevant stakeholders for the protection of critical habitats?
 - Has the Host countries ratified all conventions relevant to this project?
 - Does the Host country have its own credible legislation in place enforcing this principle?
 - Does the Host country actively enforce the principles of critical natural habitats?
 - Are violations of the critical natural habitats common in the country/region?
- 11. The project does not involve and is not complicit in corruption.**
- Is the project known to employ practiced where entrusted power is abused for private gain?
 - Has the Host government ratified the UN Convention against Corruption and the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions?
 - Does the Host country have its own credible legislation in place enforcing this principle?
 - Does the Host country actively enforce the principle?
 - Is this project prone to potential corruption opportunities?
 - Is corruption common practice in comparable projects in the region?

Annex 5: Non-Disclosure Agreement

NON-DISCLOSURE AGREEMENT

by and between

The Gold Standard Foundation, a Swiss Foundation (registry no. CH-270.7.002.975-6), 79 Avenue Louis-Casai, CH-1216 Geneva-Cointrin,
hereafter referred to as "**GSF**"

and

Corra Boushel, an individual, Chemin Franconis 16, 1290 Versoix, Switzerland
hereafter referred to as "**Boushel**",

together hereafter referred to as "**the Parties**"

Whereas

- *GSF intends to hire Boushel as an Intern for a period of one year;*
- *GSF acknowledges and understands that the purpose of Boushel's internship is to facilitate her further research into the carbon markets for the purpose of researching and publishing her PhD thesis;*
- *For the purpose of Boushel's internship, the Parties have exchanged or will exchange written data, electronic data, business information, know-how, discoveries, inventions or other intellectual property; and*
- *Such data and information are deemed to be confidential and consequently subject to the conditions of this Agreement.*

Now therefore it has been agreed as follows :

ARTICLE 1 : DEFINITIONS

For the purpose of this Agreement, the following terms shall have the meaning hereby assigned to them :

- 1.1** "Receiving Party" refers to either of the Parties receiving data and/or information.
- 1.2** "Disclosing Party" refers to either of the Parties supplying data and/or information.
- 1.3** "Confidential Information" shall mean any data and/or information of whatever nature, electronic or otherwise, supplied by the Disclosing Party to the Receiving Party pursuant to this Agreement, regardless of whether such

information is delivered in writing or orally, regardless of whether such information is specifically disclosed in the form of data, documents, drawings, or any other form, regardless of it being marked or declared « confidential », « secret » or « proprietary » by the Disclosing Party or not.

The following information shall not be considered "Confidential Information":

- any information which was undoubtedly in the public domain prior to its delivery by the Disclosing Party to the Receiving Party or which becomes part of the public domain otherwise than as a consequence of a breach by the Receiving Party of its contractual obligations.

In case of conflicting opinions, any information disclosed shall be regarded as "Confidential Information" unless proven otherwise beyond any reasonable doubt, by the Receiving Party.

ARTICLE 2 : SCOPE

- 2.1** The Receiving Party hereby agrees to strictly hold secret the Confidential Information.
- 2.2** The Receiving Party undertakes not to disclose, communicate or transmit any Confidential Information to any third person, whether an individual or legal entity, without the express prior written consent of the Disclosing Party.
- 2.3** The Receiving Party is authorized to communicate Confidential Information solely to those academic advisers or academic affiliates requiring such information to carry out the Receiving Party's academic functions. The Receiving Party acknowledges and understands that it is liable for any unauthorized disclosures that result from authorized disclosures made under this Provision 2.3 to academic advisers or academic affiliates.
- 2.4** All Confidential Information communicated to the Receiving Party under this Agreement, together with all copies of said items, shall remain the property of the Disclosing Party and shall be restored to the Disclosing Party within thirty (30) days of receipt of a written (email) request to do so from the Disclosing Party.
- 2.5** The Receiving Party agrees to use of the Confidential Information only for the purpose of the Discussions and internal analysis in connection with the Discussions.

ARTICLE 3 : OBLIGATIONS OF THE RECEIVING PARTY

- 3.1** The Receiving Party shall practice the reasonable diligence expected from a professionally run, internationally active enterprise in maintaining secret the Confidential Information, in particular by obtaining all necessary agreements from its employees and third persons and taking adequate measures against unintended disclosure.
- 3.2** The Receiving Party shall inform the Disclosing Party of any unauthorized disclosure of Confidential Information and shall take all reasonable steps to prevent any further disclosure. Such information about an unauthorized disclosure does not cure the unauthorized disclosure and all rights of the Disclosing Party remain reserved.
- 3.3** For a period of 2 years, Receiving Party will submit to GSF a full and complete draft of any papers, reports, publications or any other written work product that include any information derived from the research or study with Disclosing Party for its review. Receiving Party shall disguise or excise from this material any data that Disclosing Party identifies as too sensitive for disclosure.

ARTICLE 4 : COMING INTO FORCE, DURATION; EXTENSION TO AFFILIATES, etc-; PENALTY

- 4.1** This Agreement shall become effective on the date of signature by both Parties.
- 4.2** The provisions of this Agreement shall remain in effect for a period of two (2) years following the termination of Boushel's employment with GSF.
- 4.3** The Parties agree that this Agreement shall apply to all legal successors, affiliates, subsidiaries, licensees and/or assignees who receive Confidential Information. To this extent, the Parties will take the necessary steps to extend their respective obligations to their legal successors, affiliates, subsidiaries, licensees and/or assignees.
- 4.4** In case of one or more violations of its confidentiality obligations, the Receiving Party will have to pay a total contractual fine of EUR 10,000 to the Disclosing Party. Information about unauthorized disclosure according to ciph. 3.2 above does not affect the obligation to pay this contractual fine. Payment of such a contractual fine does not release the Receiving Party from its further confidentiality obligations or other duties under this NDA.
- 4.5** The Receiving Party acknowledges that the Disclosing Party will be irreparably harmed if the Receiving Party's obligations under this Agreement are not specifically enforced and that the Disclosing Party would not have an

adequate remedy at law in the event of an actual or threatened violation by Recipient of its obligations. Therefore, the Disclosing Party shall be entitled to seek injunctive relief against any actual or threatened violations or breaches by the Receiving Party, its academic advisors or affiliates without the necessity of showing actual damages or that monetary damages would not afford an adequate remedy.

ARTICLE 5: EXCLUSIONS

For the avoidance of any doubt, disclosure of Confidential Information is allowed in the following cases:

- Disclosure to an employee, agent or adviser of the Disclosing Party, but only where these nominated persons have a need to know the Confidential Information and have been required to keep the information confidential on terms no less stringent than this Agreement;
- Disclosure in proceedings before any court or tribunal arising out of, or in connection with, this Agreement;
- Disclosure to the extent required by any applicable law of any relevant authority having jurisdiction over a Party to this Agreement or its related corporate bodies.

ARTICLE 6 : APPLICABLE LAW AND JURIDICTION

- 6.1** The validity construction and performance of this agreement shall be governed by and interpreted in accordance with laws of Scotland, excluding the laws on international conflicts of law.
- 6.2** The Parties shall exert their best efforts to arrive at an amicable settlement of any dispute that may arise between them with respect this Agreement. If, however, no such settlement is reached, the Parties agree that each Party to this contract shall have the right to have recourse to and shall be bound by the Pre-Arbitral Referee Procedure of the International Chamber of Commerce in accordance with its rules for a Pre-Arbitral Referee Procedure. All disputes arising out of or in connection with the present contract shall exclusively and finally be settled by arbitration in law by the International Chamber of Commerce (ICC) in Geneva, Switzerland, under the ICC "Rules of Arbitration", by three arbitrators appointed in accordance with the said rules. The language of the proceedings shall be English.

Date, place: December 14, 2010, Geneva, Switzerland

For the Gold Standard Foundation:

By : Adrian Rimmer



Title : Chief Executive Officer

For Corra Boushel

By : Corra Boushel

