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# **Local Governance of Energy Initiatives: Struggles in Assembling Value**

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## **Abstract**

Local Authorities are increasingly expected to meet UK 2050 net zero climate goals. However, they struggle to assemble investment for local energy and carbon saving projects. In this thesis I examine how valuation devices that local authorities use to support decision making, shape the development of energy projects. I first develop a conceptual model bridging economic sociology of valuation and programmes of governing. I then use this model to examine valuation practices in local energy across 40 local authority case studies. I demonstrate that the value of local energy initiatives is not pre-determined, but is assembled through processes of 'value-in-the-making'.

Local authorities are required to follow formal processes at key junctures in project development. I analyse three such formal valuation processes through my conceptual model: Best Value, the business case model and public procurement. Although governments advise that all three valuation processes provide a balanced evaluation of local investment options, in practice this proves more difficult to achieve, at least for energy projects. I found that energy projects were subjected to diverse processes of economisation which marginalised social value and public goods.

It was during the application of these formal valuation devices that the parameters of value shifted. Each device was customised to circumstances and susceptible to different interpretations by officers from across the council throughout project development. This sometimes opens up discrete spheres of influence. Thus, interpretative flexibility, negotiation and contestation ultimately shape the success, scale and scope of energy initiatives. I conclude that the current structures governing valuation practices in local authority energy projects constrains their systematic contribution to a clean energy society.

# Lay Summary

Local Authorities are increasingly expected to meet UK 2050 net zero climate goals. However, with no direct powers and resources for local energy planning and investment, they struggle to assemble investment for local energy and carbon saving projects. In this thesis I examine how tools and procedures that local authorities use to support decision making, shape the development of energy projects.

The theoretical approach used draws from economic sociology of valuation and programmes of governing. This perspective considers that value is not inherent, but is put together, or assembled, through a whole number of different ways of calculating and evaluating. Importantly, using this perspective draws attention to the idea that value is assembled through processes of ‘value-in-the-making’, i.e. it involves a variety of practices and activities.

However, we have little evidence about how these processes unfold in local authority energy projects. I therefore applied this theoretical perspective to consider what happens to local energy when different tools and procedures are used across project development. I examined three formal processes across key junctures in project development: Best Value, the business case model and public procurement. I gathered and analysed data about how these formal tools were intended to be used; and using 40 local authority case studies, found out what actually happened during their application.

Although governments advise that all three can provide a balanced evaluation of local investment options, in practice this proves more difficult to achieve, at least for energy projects. I found that energy projects were

subjected to diverse processes which prioritised cost saving and income generation, and marginalised energy and carbon saving and public goods.

It was during the application of these formal tools and procedures that the parameters of value shifted. Each set of procedures was customised to circumstances and susceptible to different interpretations by officers from across the council throughout project development. This sometimes opens up discrete spheres of influence. Thus, how tools and procedures are interpreted, negotiated and contested ultimately shapes the success, scale and scope of energy initiatives. I conclude that the current organisation of assessing local investment options in local authority energy projects constrains their systematic contribution to a clean energy society.

## Publications arising

Tingey, M., Hawkey, D., & Webb, J. (2016). Assessing local government engagement in energy systems development in the UK and its likely trajectories. In *Sustainable Urban Energy Policy: heat and the city* (pp. 157–182). Abingdon: Routledge.

Webb, J., Tingey, M., & Hawkey, D. (2017). *What We Know about Local Authority Engagement in UK Energy Systems: Ambitions, Activities, Business Structures & Ways Forward*. London and Loughborough: UKERC and ETI.

Tingey, M., & Webb, J. (2020). Governance institutions and prospects for local energy innovation: laggards and leaders among UK local authorities. *Energy Policy*, 138, 111211.

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## Abbreviations

AHP	Aberdeen Heat & Power
ALMO	Arm's Length Management Organisation
APSE	Association of Public Service Excellence
ARUP	Arup Group
BDEC	Birmingham District Energy Company
BEMS	Building Energy Management Systems
BWCE	Bath & West Community Energy
CCC	UK Committee on Climate Change
CCT	Compulsory Competitive Tendering
CHP	Combined Heat & Power
CIPFA	Chartered Institute of Public Finance & Accountancy
CRC	Carbon Reduction Commitment
DCLG	Department for Communities & Local Government
DE	District Energy
DECC	Department of Energy & Climate Change
DEPA	District Energy Procurement Agency
DH	District Heating
EC	European Commission
ECO	Energy Company Obligation
EE	Energy Efficiency
EIB	European Investment Bank
Elena	European Local ENergy Assistance
EPC	Energy Performance Contract
ETI	Energy Technologies Institute
EU	European Union
FIT	Feed-in Tariff
GDPR	General Data Protection Regulations
GLA	Greater London Authority
GM	Greater Manchester
GMCA	Greater Manchester Combined Authority
HN	Heat Network
HNDU	Heat Networks Delivery Unit
IEE	Intelligent Energy Europe
IRR	Internal Rate of Return
ITMC	Invitation to Mini Competition
JV	Joint Venture
kW	Kilowatt
LA	Local Authority
LCH	Low Carbon Hub
LED	Light-emitting Diode
LEUKES	Local Engagement in UK Energy Systems

LHEES	Local Heat and Energy Efficiency Strategies
MEC	Municipal Energy Company
MHCLG	Ministry of Housing, Communities & Local Government
MLEI	Mobilising Local Energy Investment
MW	Megawatt
NEDO	New Energy & Industrial Technology Development Organisation
NPM	New Public Management
NPV	Net Present Value
OJEU	Official Journal of the European Union
PEC	Plymouth Energy Community
PFI	Private Finance Initiative
PQQ	Pre-Qualification Questionnaire
PWLB	Public Works Loan Board
RE:FIT	RE:FIT Framework Agreement
RE:NEW	RE:NEW Framework Agreement
SCA	Scottish Cities Alliance
SCE	Swansea Community Energy
SLA	Service Level Agreement
SME	Small and Medium-Sized Enterprises
Solar PV	Solar Photovoltaics
SPV	Special Purpose Vehicle
TED	Tenders Electronic Daily
UK	United Kingdom
UKERC	UK Energy Research Centre
VAT	Value-added Tax
VEAT Notice	Voluntary Ex ante Transparency Notice
VFM	Value for Money
WEM	Water and Environment Management Framework

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# 1 Introduction

Today there is no substantial UK municipal energy sector. There are pockets of activity, but in the absence of direct local government responsibilities or mandate for energy, municipal energy is small scale and ad hoc. However, as civic representative bodies, UK Local Authorities are likely to be an essential institutional actor for achieving net zero carbon targets by 2050 (Bulkeley, Castán Broto, & Maassen, 2014; Scottish Government, 2018a; Tingey & Webb, 2020a; Webb, Tingey, & Hawkey, 2017). This thesis therefore aims to improve our understanding of how local authorities currently assemble value from local energy.

Drawing on evidence from 40 local authority case studies, I analysed the influence of three different decision making tools and procedures used across different stages of energy project development. This has generated a rich account of the struggles local authorities encounter as they attempt to bring forward energy projects in an economic and political climate that constrains their systematic contribution to a clean energy society.

This thesis challenges the assertion put forward by UK and devolved governments that current frameworks for assessing value in local authority energy projects can provide a balanced evaluation of local investment options. Findings demonstrate that carbon saving, social value and public goods of energy projects were continually eroded during their development. Energy projects are ultimately marginal to the local authority organisation, and susceptible to scaling back, delay or being abandoned. The organisation and governance of local authority energy thus largely *disincentivises* any significant municipal energy sector from emerging. Consequently, I conclude that the current governing of local authority energy fails to deliver on the local carbon saving and clean energy needed to meet climate protection goals. In

the remainder of this Introductory chapter, I explain the rationale and research questions of this study in more detail, and provide an overview of the thesis structure.

## **1.1 Rationale for studying local governance of energy and valuation practices**

Local governance of energy has come to the fore in the context of ending societal dependence on fossil fuels and developing clean energy systems. Towns and cities are sites of considerable emissions, with transport, business and residential sectors together comprising two thirds of UK greenhouse gas emissions (Department for Business, Energy and Industrial Strategy, 2020). The UK Climate Change Act (2008) and Climate Change (Scotland) Act 2009 brought in legally binding targets for an 80% reduction in greenhouse gas emissions by 2050 compared to 1990 levels. This legislation was extended in 2019 to a net zero target, by 2045 in Scotland, and 2050 in the rest of the UK<sup>1</sup>. The magnitude of these targets for economic and societal decarbonisation requires coordinated action across all scales and sectors (Committee on Climate Change (CCC), 2019; Unsworth, Valero, & Stern, 2020; Watson, 2019).

Climate policy developments have focused on the energy system. However, most progress to date has been on decarbonising British electricity supply through the implementation of renewables. Conversely, there has been very limited progress in energy efficiency, heat decarbonisation and transport (Eyre & Killip, 2019). These all have a 'local' dimension, where local authorities could play pivotal roles in the planning, development and implementation of clean, efficient, low energy infrastructure.

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<sup>1</sup> The Climate Change Act 2008 (2050 Target Amendment) Order 2019, and the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. The target for Welsh emissions is a 95% reduction by 2050.

Analysis has illustrated how local authority scale energy and climate governance and investment can contribute toward emissions reduction targets. For example, analyses have calculated local authority carbon budgets and annual emissions reduction trajectories aligned to the 2015 United Nations Paris Agreement (Kuriakose et al., 2018), and UK net zero carbon target (Kuriakose et al., 2019). For Manchester and West Midlands Combined Authority, this would involve a 13% average annual reduction in CO<sub>2</sub> emissions respectively<sup>2</sup>; achieving this requires significant scaling up of investment at local scale. Complementing this, further studies have quantified potential carbon reduction at city scale (Sudmant et al., 2016). Estimates for the whole city of Edinburgh (Williamson et al., 2019) for example, indicate the city's carbon emissions could be halved from cost-effective investment in known energy efficiency and heat decarbonisation technologies. This suggests that there is considerable, but currently untapped, potential for a contribution to climate protection goals at local authority scale.

Although UK local authorities have no direct responsibilities for energy, the issue cuts across multiple other local authority interests and responsibilities (Bulkeley, 2010; Royal Society of Edinburgh, 2019; Sugden et al., 2012). This includes urban regeneration, economic development, planning, housing, fuel poverty and welfare. Local authorities' overall commitment to locality has long been recognised as crucial to their motivation and scope for involvement. From various local government groups and networks, such as UK100 (Billington, Abel Smith, & Ball, 2020; 2017), Climate Alliance et al. (2015), and APSE Energy (Association of Public Service Excellence) (e.g. Bramah, 2015) there are also calls for greater local authority roles in carbon

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<sup>2</sup> Energy related emission only, excludes aviation, shipping and land use change. Analysis for Manchester was in line with the 2008 Climate Change Act and hence figures may change to align with a net zero trajectory.



abatement, and 're-municipalising' energy. This suggests appetite among local authorities for more systematic engagement with energy.

In keeping with this, academic interest in local authority contribution to transforming UK energy systems has been increasing over the last 30 years. Studies first emphasised 'Local Agenda 21' of the 1992 Rio Earth Summit as an early catalyst for local action (Collier & Löfstedt, 1997), and corresponding attempts to embed sustainable development in councils (Ball, 2005). Studies then catalogued the (few) 'pioneering' UK councils which developed energy and climate strategies, including Nottingham, Bristol and Kirklees, amongst a handful of others (Bulkeley & Betsill, 2003; Shackley, Fleming, & Bulkeley, 2002). Overall however the picture was one of limited action: Allman et al (2004) found that around 70% of English and Welsh local authorities did not have energy and climate strategies in place. The lack of a policy framework for local authority-led energy was noted (Fleming & Webber, 2004). Without clear responsibilities for energy and climate change, it was argued to be unlikely that local authorities would independently develop sufficient capacity for local energy programmes (Betsill & Bulkeley, 2007; Bulkeley & Kern, 2006).

With no systematic progress on local energy, there has been new interest in understanding local authorities' institutional capacities, and their limitations, to contribute to local energy systems (Tingey & Webb, 2020a; Tingey, Hawkey, & Webb, 2016). In the context of austerity budgets and (still) no clear policy framework for local energy, emphasis has been given to both the ongoing erosion of local authority capacities to intervene in energy systems (Dixon & Wilson, 2014; Morris et al., 2017), and the niche areas of innovation that occur despite this (Kuzemko & Britton, 2020). This includes how local authorities attempt to develop local energy strategies (Bale et al., 2012), urban energy coalitions for retrofitting (Hodson & Marvin, 2016), renewable energy, and low carbon heat provision (Ambrose, Eadson, & Pinder, 2016).

Understanding the value of local authority energy initiatives thus involves situating local energy governance within a complex landscape of interlocking actors, interests, formal and informal capacities.

## **1.2 Research objective and focus**

Missing from analysis to date is consideration of the ways in which local authorities evaluate options for, and make decisions about, ownership, operation and financing of energy projects. As Chapter 2 sets out in more detail, local authority autonomy and agency is heavily constrained by central governments who set their overall funding, powers and responsibilities (Eckersley, 2018). Crucially, there is no clear statutory local energy mandate and associated set of resources. This means energy is a discretionary area of local service provision. Austerity budgets make it even more challenging to stretch limited resources to discretionary services like local energy, as council funding has fallen below the levels needed to meet local service demand (Harris, Hodge, & Phillips, 2019). How then, is the value of a local energy project assembled?

Where local authorities make some commitment to energy and carbon management, they must make the case for how this contributes value to the council. Building a rationale for why the council should allocate resources, whether human or financial, to discretionary energy project development is hence a sphere of improvised activity needing creative thinking (Webb, 2015). This context presents intriguing questions about how the value of local energy is assembled, which provide the focus of this thesis.

In particular, this thesis investigation analysed the formal processes used in energy project development; these provided the lens through which to examine decision making about local energy planning and investment. I analysed three such formal processes that intend to provide a balanced evaluation of local investment options: the Best Value Framework, the

business case model, and public procurement. Chapter 6 explains these in detail.

Using these to structure the investigation, my overall aim and objective was to better understand how formal procedures for assessing value in energy projects influence material developments. To explore this, I use a sociological perspective on practices of valuation (Muniesa, 2012) in the context of neo-liberal programmes of governing (Miller, 2008) to focus the analysis directly on the integral role of tools and procedures in project development. As Chapter 3 explains, this perspective conceives that the value of an energy project is assembled through practices of 'value-making'. The application of formal valuation instruments or 'devices' are understood as attempts to standardise these valuation practices. In turn, formal processes are considered as one element of governmental attempts to exert political power and control in local authority decision making. The implication is that instead of treating project development processes as neutral or technocratic, this sociological perspective alerts the researcher to how value is mediated and negotiated through formal tools and procedures.

However, how valuation instruments are actually used is poorly understood and lacks empirical evidence (Helgesson & Muniesa, 2013). This thesis addresses this gap by analysing valuation practices within energy project development. Translating this perspective into research questions led to the following overarching research question:

***How is the value of local energy initiatives assembled?***

This research question asks how local authorities assemble value from local energy projects and proceed with project development, despite a governance context that fails to provide a clear route for consistent engagement with local energy. My focus is on *how* the three valuation frameworks selected structure the development of local energy. I thus consider them as constituent elements in valuation practices that shape energy projects.

Subsidiary research questions open up investigation into negotiating, contesting, interpreting and resisting these formal processes. These are explained in more detail in Chapter 3 (Section 3.4).

The purpose of this investigation was therefore to contribute new knowledge about the struggles local authorities currently confront in value-making during energy project development. As Chapter 2 explores in more detail, current levels of local authority energy provision are not sufficient for the scale of decarbonisation needed to meet net zero carbon climate protection goals. Examining current practice provides a route to understanding limitations of the organisation and governance of local authority energy. Findings can inform what needs to change to enable a systematic local contribution to a UK net zero economy and society.

### **1.3 Overview of Chapters**

This investigation into value-making in local energy unfolds as follows.

Chapter 2 provides detail on local governance and energy in the UK, introducing: firstly, the marginal status of local authority energy provision in the UK; and secondly, central-local government institutional relationships. In the latter, I emphasise the marketisation of local public services and the use of specific evaluation methods in local government as one element of that. The chapter closes by clarifying the research scope of this thesis and my decision to focus on the influence of specific tools and procedures within project development.

In Chapter 3, I introduce the conceptual framework and the rationale for specific research questions. I combine concepts from economic sociology of valuation and programmes of governing to allow me to conceptualise how formal instruments and tools shape the development of energy projects. This is used to consider the ways in which the value of local energy is the outcome of negotiated and contested valuation practices.

Chapter 4 details the multiple-case study approach developed to investigate local energy valuation practices. I explain how the methodology is informed by a lack of breadth in existing analyses of local authority energy. I then describe the multiple-case study design, discuss limitations of the chosen approach, and consider ethical implications associated with the study.

Chapters 5–9 provide the main empirical section of the thesis. Chapter 5 gives an overview of the local authority case studies. I analyse how energy was situated within each organisation, introduce the energy projects studied, and consider the likely areas of tension in energy project valuation practices.

Chapter 6 then analyses the legislation and guidance relating to each valuation framework. This identified the perspective from central government and related agencies on how each tool should be applied. Discussion considers how local authorities might exert agency in interpreting the rules that attempt to govern and standardise local assessments of value.

In Chapter 7 I focus on the Best Value Framework, analysing how energy projects become entangled with procedures for demonstrating public accountability and value for money. I consider how these govern the development, and formal valuations, of energy projects and the negotiation of value across different actors in the council. The procedures of the Best Value Framework are found to be excessively constraining, even though Best Value was introduced with the intention of giving more control in organising local services.

Moving on to Chapter 8, I analyse how councils' tussle with constructing and assessing the Business Case. This reveals considerable diversity in what constitutes the energy project business case. Overall, decision making was found to be largely oriented to relatively short-term financial value which impacted on capturing other forms of social value and public goods. Analysis

explores how local authorities attempted to break out of this mould and secure long-term investment in local energy that delivered carbon saving and social welfare.

This leads into Chapter 9 where Public Procurement is the central focus. Analysis considers how negotiation of value was mediated through complex procurement rules and systems designed to promote economic efficiency across the public sector and wider EU single market. I develop and analyse a typology of the 'intelligent buyer' configured to navigate local energy procurement valuations. This reveals that attempts to adapt procurement processes to capture locally determined value were contingent on expertise, trust and resources.

Chapter 10 draws together the conclusions derived from this multi-faceted analysis. I discuss insights into the struggles in assembling value in local authority energy. I reflect on the limited opportunities for incorporating carbon saving, social value and public goods of energy projects into evaluation of local investment options. In doing so, I outline what this empirical contribution implies for economic sociology of valuation. I also identify limitations, and suggest policy implications and further research arising from the investigation. The thesis closes with a discussion of the main contributions made to social studies of energy, including the importance of detailed empirical accounts of project development processes.



## **2 UK Local Governance and Energy**

### **2.1 Introduction**

Leading on from the importance of a local authority contribution to net zero carbon reduction goals, this chapter provides an overview of local governance and energy in the UK. My aim is to situate local authority energy within the context of central-local government institutional relationships. In doing this, I pay attention to neo-liberal governing of local public services over the past 40 years. One currently understudied aspect of this in local energy literature concerns the tools and decision making procedures aimed at improving public sector efficiency. I argue that a direct focus on the role of these devices in project development will enhance our understanding about local energy planning and investment.

The rest of the Introduction provides a brief summary of the limited policy support for local authority-led energy at the time of data collection (2015-2016). Section 2.2 provides an overview of evidence about the types of local authority energy projects and business structures taken forward in this context. Section 2.3 discusses local authorities' institutional capacities and current frameworks shaping assessment of energy projects. Section 2.4 outlines the research scope of this thesis and my decision to examine how the use of specific tools and procedures influences project development.

The role of local authorities in energy policy has been inconsistent across policies spanning zero carbon homes, small scale renewables, energy efficiency and heat decarbonisation (Webb, Tingey, & Hawkey, 2017). Ending support for feed-in tariff subsidies in the mid 2010s, removed the key financial mechanism which local authorities and other actors had relied on to develop small scale renewable generation (Sullivan, Gouldson, & Webber, 2013), such as solar PV on council buildings. Equally critical was the scaling



back, and then abandonment, of the UK government's zero carbon homes policy in England (Lovell, 2016). This not only downgraded councils' planning powers, but also cancelled the funding which local authorities would receive from developers to pay for low carbon projects.

Analysis comparing heat decarbonisation and energy efficiency in England and Scotland concludes the UK government has proceeded on trajectory of ambiguity about local authority role(s) (Wade, Webb, & Tingey, *forthcoming*). From 2010, almost all support was withdrawn for energy efficiency policies by UK Government (Webb, 2018). This included reducing the eligibility of energy efficiency improvements funded through Energy Company Obligation (ECO) which paid for upgrades to social housing, and abandonment of the ill-fated Green Deal policy (Mallaburn & Eyre, 2013; Rosenow & Eyre, 2016). The latter included Pioneer Places (Marchand, Koh, & Morris, 2015) and Green Deal Communities (Ince & Marvin, 2019) funding streams. These paid for local authority area-based energy efficiency programmes such as solid wall insulation programmes, but also local 'demonstrator' homes and marketing costs to help sign-up households.

Concerning heat policy, successive UK governments have been criticised for an intermittent approach to district heating development that undermines local capacities to deliver heat network infrastructure (Bolton & Foxon, 2015; Bush, Bale, & Taylor, 2016). This included curtailing the Community Energy Programme in 2006, the only significant UK public funding stream for local authority district energy development in the 2000s (Hawkey et al., 2016). The 2013 *Future of Heat* policy was also criticised for its ambiguity over whether local authorities would develop district heating schemes, or simply facilitate other market actors. To some degree this was redressed via the creation of the Pioneer Cities heat network development programme for five English cities (Leeds, Manchester, Newcastle, Nottingham and Sheffield), and then the subsequent establishment of the Heat Networks Delivery Unit in 2013

which provides funding and support for district heating planning (covering England and Wales) (Ambrose et al., 2016). However, the associated £320 million Heat Network Investment Project, announced in 2014 was delayed and has struggled to allocate funding.

The concurrent removal of UK government policy support across multiple areas of local energy has thus worked against articulating a clear and consistent policy position about the value of local energy, and about the role of local authorities in development of local energy systems. In addition, time limited funding opportunities are unlikely to be sufficient to develop a long-term rationale in the council for investment in local energy. Consequently, alternative tools for justifying the value of committing resources to local energy are likely to be required. Before moving onto this, the next section considers what kind of energy projects emerge in this policy context.

## **2.2 Local Authority Engagement with Energy**

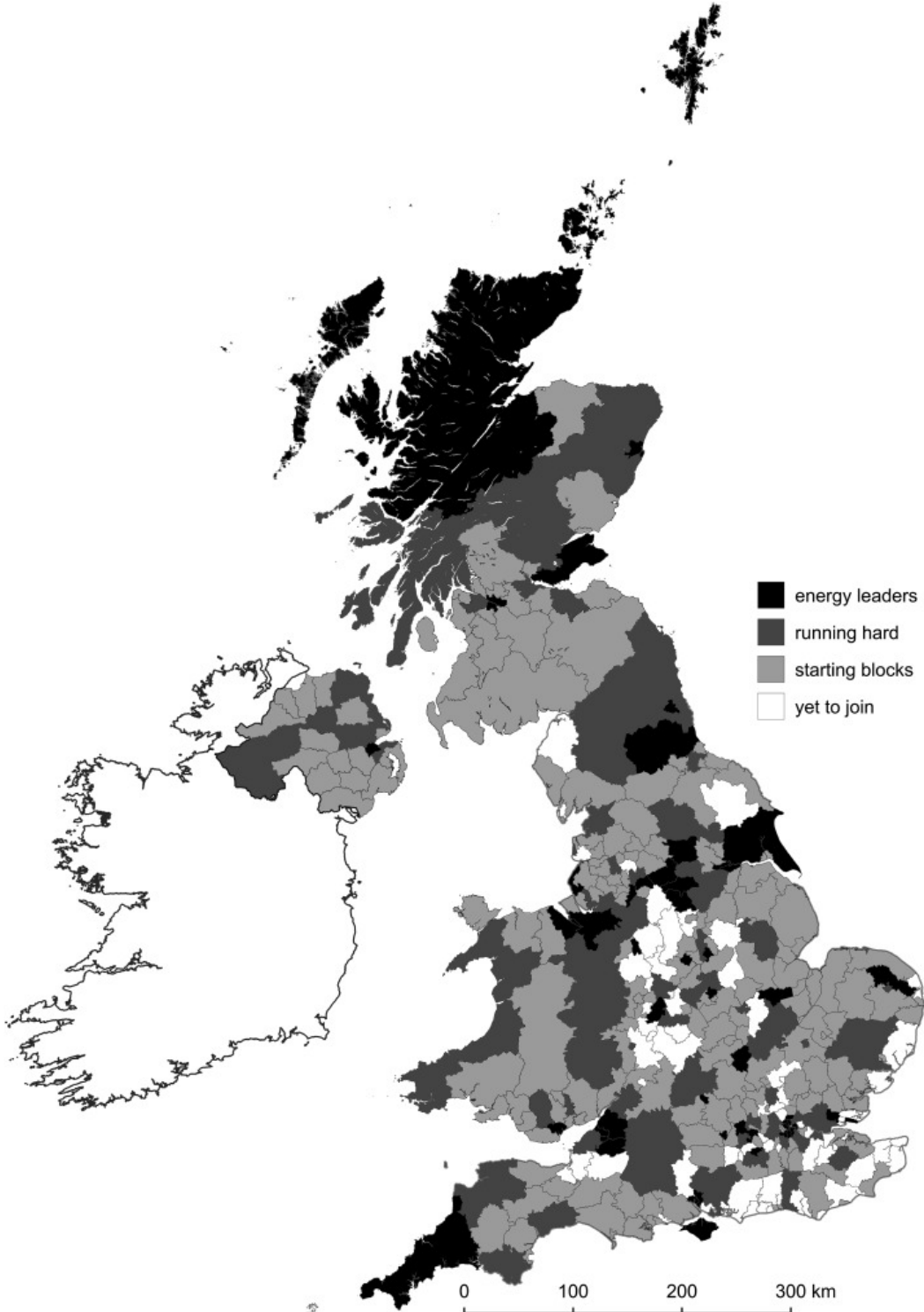
In the absence of a long-term supportive policy framework for local authority energy, activity has been relatively small scale and piecemeal, yet nevertheless with pockets of innovation. Dixon and Wilson's (2014, p. 676) survey of 54 UK local authorities' development of low carbon plans concluded that "progress on low-carbon/climate change is still often relatively experimental and fragmented". In addition, Bulkeley and Kern's (2006, p. 2254) case study research concluded that "even the most pioneering UK local authorities" had insufficient "capacity to act for climate protection." Although analysis of local authority climate policy documents emphasise the potential for energy efficiency, energy saving, renewable energy, waste management and transport (Heidrich et al., 2013; 2016), there appears to be relatively few meaningful routes to implementation.

At aggregate level, analysis mapping levels of engagement across energy strategy and project development illustrates these challenges (Tingey & Webb, 2020a; Webb, Tingey, & Hawkey, 2017). This analysis covered all UK

local authorities and identified laggards through to leaders in the development and delivery of local energy. Specific findings include:

- The majority of UK local authorities were active to some extent, with 82% (357) having local Energy and Carbon Plans and/or investments in energy projects.
- Only a minority (13% or 55) appeared to have combined these into a programme of local energy provision (categorised as *energy leaders*, see Figure 2.1); nevertheless, this group covered about 25% of the UK population.
- Energy plans were more common than projects; and the scale of projects was limited.
- Three quarters of projects concerned heat and energy efficiency of (primarily domestic) buildings, including council-owned housing, and council corporate estates. Activity centred on Combined Heat and Power (CHP); and, heat networks; a range of building energy efficiency projects were also identified.
- Scotland had the highest proportion of *energy leaders*, followed by England, Wales and finally Northern Ireland.
- Within England's local government structure where there is a mix of single and two-tier authorities (see Appendix I for summary), first the highest proportion of *energy leaders* were in the English single tier authorities: these are unitary, London and metropolitan district authorities. Second among the two-tier authorities, greater levels of activity were observed in the top tier county councils than in the lower tier district boroughs.

Figure 2.1 UK local authority engagement in energy



Source: Tingey and Webb (2020a) (figure contains crown copyright and database right data).

Most local authority activity therefore has related to energy management on the corporate estate and in social housing. This includes energy efficiency upgrades (Morris et al., 2017) as well as development of supply-side infrastructure including CHP, district heating and energy from waste (Bush et al., 2017; Hawkey et al., 2016). Furthermore, Rydin et al's (2013) survey of urban energy identified that a third of initiatives were led by local authorities. These projects were grouped as being developed on an invest-to-save basis or drawing on subsidy schemes such as the feed-in tariff. Examples of the former were a biomass heating system in Barnsley Council headquarters and energy retrofit of a social housing estate in Brixton; whilst the latter is exemplified by solar PV projects in 'low carbon zones' such as that established by Greater London Authority.

However, these projects have tended to be bespoke one-offs rather than systematic and sustained interventions across the local authority population. Indeed research emphasises the difficulty in establishing continuity of sustained engagement with energy even in those local authorities that have been identified as at the vanguard. For example, Shackley et al. (2002) showcased 14 local authorities that they identified were at the leading edge of low carbon activity in the early 2000s, but only nine still remained in the same position more than a decade later (Tingey, Hawkey, & Webb, 2016).

Outside of this, notable activity includes greater positioning of low carbon development and climate strategy as integral to economic regeneration strategy, such as 'Energy City' Hull (Wurzel et al., 2019). Brauholtz-Speight et al. (2018) also raised the possibility for some collaboration with community energy groups. They noted this could include local authorities onward lending to groups and providing staff resources, but nevertheless warned that budget cuts were likely to prevent this from being a smooth process.

In the context of a lack of supportive public policy for local energy, the challenges councils face are relatively well rehearsed in the literature. This includes limited resources and budgets, and the disjointed efforts which result from initiatives arising from various services within councils (Bulkeley, 2010). In the absence of any core legitimacy for local energy, projects have tended to rely on the perseverance of ‘wilful individuals’ in local authorities to *make* projects happen (Collier & Löfstedt, 1997; Webb, 2015). The role of local politicians and managers to act as a ‘senior champion’ is also cited as crucial to developing internal momentum and interdepartmental coordination (Roelich et al., 2018).

However, such a reliance on individual officers and councillors has resulted in an inherent unevenness in how this plays out in different local authorities. Bulkeley and Kern’s (2006, p. 2251) analysis of three councils ‘pioneering’ action on energy and climate change (Kirklees, Leicester and Southampton) provides a reminder that this is the exception rather than the norm: “having staff resource dedicated to this task [is] a resource which is not available in the majority of local authorities.” Councils who created Sustainable Development Teams/Units also struggled to develop forward momentum, and with no core funding budget pressures led to these teams being cut back (Ball, 2005). Furthermore, Bale et al.’s (2012) study of Leeds City Council emphasised that officers often lacked technical knowledge to assess technology options, and found it difficult to secure long-term support from council leaders and senior management. This suggests that the value of energy may be interpreted differently, depending on factors such as staff knowledge of different project types and the degree of high level commitment within the organisation to develop a local programme of energy projects.

### ***Ownership models and business structures***

Local authorities adopt a variety of governance and ownership structures for local energy projects. Roelich et al.’s (2018, p. 735) study of five English cities for example concluded “that there was no blueprint for a municipal

energy company [MEC] but that cities were incrementally developing a series of smaller scale activities that helped them to engage in a low-risk way and to explore the most appropriate institutional form for a MEC.” With no single model, considerable experimentation and innovation spans leading projects ‘in-house’, where the local authority directly owns and develops projects, through to numerous different types of independent businesses and outsourcing (Tingey, Webb, & van der Horst, *in preparation*; Webb et al., 2017). In each model the local authority has different levels of control over development and the business (Berry & King, 2019), with most direct influence where there is municipal ownership. I now briefly summarise ownership models and contract structures for energy efficiency and low carbon heat, but description of the main business structures studied in this thesis is found in Chapter 5.

Notably, energy upgrades to the corporate estate have increasingly used energy performance contracting (Polzin, Flotow, & Nolden, 2016). This is a contract with an energy services company that is used for combining onsite renewable energy technologies, such as solar PV and biomass boilers/CHP with upgrading lighting and energy management (Fennell, Ruyssevelt, & Smith, 2016). In the UK, the contract to public sector clients is structured to provide a ‘guaranteed’ level of energy saving, enabling capital costs to be recouped and often securing new income. To reduce procurement time and cost, local authorities commonly use a public procurement ‘framework agreement’ to appoint a contractor through a ‘mini-competition’ between pre-approved suppliers. Contracts under the Re:fit procurement framework, which is available to local authorities across the UK, were relatively small scale. Analysis by Nolden and Sorrell (2016) found they had an average contract size of £1 million (range £150k – £6 million) with energy savings in the range of 15-20%, over a 5-7 year payback.

For local authority district energy projects, a range of different models have been identified (Hannon & Bolton, 2015). Hawkey, Webb and Winskel (2013) examined three case studies of different district energy business structures. Thameswey, a municipally owned district energy business in Woking that serves public, private and residential customers (and with subsidiaries in Milton Keynes). Birmingham District Energy Company, a private sector-led business established via a long-term concession contract to finance, own and operate the district energy business over 25 years with a core network of public sector customers (local authority, university, hospital). And, Aberdeen Heat and Power, an independent not-for-profit district heating companies that primarily serves council owned social housing residents but also a number of public buildings. In each business structure, public sector owned buildings (including social housing) formed the key anchor loads, but owing to different priorities of each business, expansion plans varied. For example, municipally owned Thameswey established a subsidiary company in Milton Keynes to develop further district energy networks, whilst the private sector-led Birmingham District Energy Company had different return on investment requirements.

Studies of local authority energy initiatives thus establish a high level picture of widespread ambition, but only modest pockets of activity. Most activity is shown to focus on heat and energy efficiency projects associated with council owned buildings, at least initially. In addition, there is no single business structure used to support such projects. Experimentation with a diversity of business structures suggests that negotiation of value is likely to involve the different actors across various ownership and contract models.

Energy project development is not yet at the pace or scale needed to reach net zero carbon targets. Limited resources and lack of capacity are emphasised as limiting current levels of energy project development. There appear to be scarce opportunities for generating a groundswell of sustained



local authority planning, implementation and investment. This implies the need to know more about local authority organisation and governance, and consider how this shapes how decision making about ownership, operation and financing of energy projects.

### **2.3 Institutional capacities, competition and efficiency in local public services**

UK local authorities' formal institutional capacities are heavily shaped by central governments, who set their overall funding, powers and responsibilities (Eckersley, 2016; 2018; Ladner, Keuffer, & Baldersheim, 2015). This centralised control shapes the legitimacy of the value of local authority energy. Local authorities are governed by statutory duties set out in legislation, *statutes*, of parliament (Aguma, 2013; Braithwaite, 2018). The main statutory responsibilities set for local authorities span economic development, education, environmental health, housing, planning, public facilities, social care, transport and waste management (Slack & Côté, 2014). Because local government is devolved, there is a patchwork of how statutory responsibilities are organised across different local authority structures in England, Scotland, Wales and Northern Ireland (see Appendix I).

Importantly, central government mandating local authority action can shape their legitimacy as a local actor. However, there is no clear statutory local energy mandate and associated set of resources. In turn, local authority capacity for carbon management is 'weak' (Centre for Sustainable Energy, 2005). To provide more scope for local authority energy action, in 2012 the Committee on Climate Change (CCC, 2012, p. 9) recommended creating a new statutory duty for local authorities to "develop and implement low-carbon plans". UK Government did not act upon this recommendation<sup>3</sup>. This absence of core responsibilities is likely to make it challenging to justify

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<sup>3</sup> Proposals are forthcoming in Scotland, and are discussed in Chapter 10.

energy projects. They may need to be aligned with existing responsibilities on a case-by-case basis.

The majority of local government funding is channelled to delivering statutory roles, meaning that the allocation of funding to energy is minimal. Austerity budgets have also led to severe cuts in funding to local government. In Scotland and Wales financial pressures were less severe with cuts of around 10% (Audit Scotland, 2019; Downe & Taylor-Collins, 2019; Ferry, Coombs, & Eckersley, 2017). English local authorities however “faced a disproportionately high share of the cuts” (Lowndes & Pratchett, 2012, p. 23) and during the period 2010-2018 lost around half of their centrally allocated budgets (National Audit Office, 2018) across revenue and capital grants. Across this period demand for services simultaneously increased (Hastings et al., 2015), leading to major cutbacks and restructuring of local services.

And at the extreme end, councils have faced difficulties providing their statutory services. For example, in 2018 Northamptonshire County Council issued a Section 114 notice meaning it had effectively gone bankrupt. This brought about intervention from UK Government, on the grounds the council had failed in its legal obligation to secure ‘best value’ (Caller, 2018). To avoid a central government bailout the council was allowed to fund day-to-day revenue services by using capital receipts<sup>4</sup> of around £50 million from selling and re-leasing<sup>5</sup> its main building (Pickard, 2018). Against a background of austerity budgets, local energy is unlikely to be consistently prioritised (Bawden, 2019; Dixon & Wilson, 2014; Morris et al., 2017; Roelich et al., 2018).

### ***Neo-liberal governing: instruments and organisational practices***

In this model of centralised control, analyses conclude local authorities are particularly susceptible to central government agendas of neo-liberal

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<sup>4</sup> This is usually prohibited.

<sup>5</sup> Which itself will increase day-to-day running costs (Northamptonshire County Council, 2018).

governing in public services that have been implemented over the past 40 years (Bourn, 2012; Eckersley & Ferry, 2019; Ferry et al., 2017; Lowndes & Gardner, 2016). Coined 'new public management' (NPM), neo-liberal governing has involved introducing competition into public services under the guise of efficiency, value for money, and restrictions in public spending. This has involved adopting private sector business management and accounting practices within the public sector, and outsourcing to the private sector through procurement and contracting (Hood, 2007). This institutionalisation of markets applies to local government through introduction of specific tools, procedures and organisational practices (Arnaboldi & Lapsley, 2008; Lapsley, Miller, & Panozzo, 2010). The Best Value Framework, business case model and public procurement are three contemporary tools which attempt to extend neo-liberal governing in local authorities and are likely to mediate energy project development. These are introduced below, situating them within the wider context of neo-liberal governing since the 1980s.

A key priority of all NPM action was to find "less costly ways to deliver public services instead of laying the emphasis on institutional continuity" (Hood, 1995, p. 97). The transformation of local authorities under NPM was characterised as a shift from local *government* providing services themselves, to local *governance* of new partnership arrangements and networks of private, and latterly third sector actors, involved in delivering public services (Murray, 2011; Stoker, 2004). Under such 'local governance', local authorities thus moved away from a core role as a local service delivery body to more strategic roles (John, 2001), commissioning other delivery partners through competitive procurement (Higgins, James, & Roper, 2005). In local authority energy, this has prioritised 'enabling' and facilitative governance roles such as helping other actors take up energy efficiency measures, rather than having a significant direct energy provision role (Bulkeley & Kern, 2006; Eadson, 2016).

Moreover, introducing competition as an organising principle for local authority services positioned finance in a primary role under NPM. Lapsley et al. (2010, p. 309) described this as transforming the city into “an economic entity competing for resources in a market-like environment”. The task for council managers, according to this rationale, is to make the assets of a city countable, quantifiable, and ultimately tradable as investments. In turn, local authorities are expected to develop energy projects as responsive to a market-led economic development agenda (Wurzel et al., 2019). There are a range of tools and devices that shape any negotiation of an energy project (Rydin et al., 2015; Webb & Hawkey, 2016). Webb (2019) for example, illustrated how this ‘financialised governance’ remoulded Glasgow City Council’s sustainability strategy into a financial object to attract (international) investment. Under NPM, local services are thus characterised as ‘products’ with ‘customers’ and ‘investors’. The job of local authorities portrayed in these more critical accounts of NPM is that of providing the enabling capacity for the other actors to secure income streams from local services.

Compulsive Competitive Tendering (CCT) was the key instrument through which NPM was implemented in local authorities during the 1980s and 1990s (Wilson, 1999). CCT was a procurement model of outsourcing for the whole organisation based on a short-term cost saving rationale that perceived markets could deliver local services more (cost) effectively. It required open competition whereby local authorities tendered their services and award contracts according to a lowest cost model of delivery.

This led to the deconstruction of municipal monopolies where local authorities lost exclusive rights over services like social housing, public works, aspects of social care and local public transport (Segan, 2013). Local authorities could compete for their own contract but if they won these on the basis of lowest cost, an external delivery body separate from the local authority needed to be set up.

CCT was widely criticised. Requiring that local authorities bid to run their own services was described as unpopular and wasteful (Wall & Martin, 2003). Contracting out was associated with adversarial and prescriptive contractual relationships (Walker & Davis, 1999), and was criticised for high transaction costs yet no demonstrable improvement in local service performance.

Alongside CCT, during the 1980s and 1990s local authorities were also constrained by the principle of *ultra vires* ('beyond legal powers') which prevented them from undertaking any activity not explicitly permitted in their statutory powers (Aguma, 2013). This meant that unless local authorities had a statutory power for 'X' it was illegal for them to do 'X'. Although legal challenge had to be brought for any direct consequence from contravening *ultra vires*, this did happen across various local authority activities, from providing laundry services to investment in derivatives (Braithwaite, 2018). Lack of statutory mandate is likely to have meant that, historically, councils had to align the value of energy projects within existing statutory responsibilities.

The virtues of privatising local government through CCT and the tight control of local authority agency through *ultra vires* were under increasing political pressure by the late 1990s. New Labour's political discourse encapsulated in its 'modernisation agenda' (Department of the Environment, Transport and the Regions, 1998; UK Government, 1999), argued that competitively tendering local services according to a narrow assessment of lowest cost financial value forced an unnecessary privatisation of local government services. This led to an overhaul of local government at the turn of the 21<sup>st</sup> century. CCT was replaced with the Best Value Framework as the main device at the core of local authority governance today (see e.g. National Audit Office, 2019). Development of the business case as a decision making tool also gained traction across the public sector, and public procurement

was reshaped and extended. The prescriptive *ultra vires* model was also somewhat relaxed by general ‘well-being’ and latterly general ‘competence’ powers, and new public borrowing rules were introduced.

### ***Securing ‘better value’ local public services***

The Best Value Framework abandoned CCT’s upfront requirement to outsource services and procure on the basis of lowest cost financial value. Instead, a ‘duty of Best Value’ sets an overarching requirement for local authorities to secure and evidence ‘continuous improvement’ across all functions and local services (National Audit Office, 2019), whether delivered in-house or outsourced through public procurement. This includes the effectiveness of both political leadership and senior management, and the scrutiny arrangements in place to make decisions accountable and transparent (Downe et al., 2008). Through this greater focus on corporate governance, considerable effort was given to bringing about behavioural and cultural change; the requirement to secure ‘continuous improvement’ covers the whole organisation, spanning all statutory front line services and back office corporate functions. This means that in principle the duty of Best Value impacts on all council activities and decisions, including those in energy project development.

UK and devolved government approaches to Best Value have minor variations, and there have been changes over the 20 year period since its introduction (Downe et al., 2008; Nutley et al., 2012). For example, the extensive programme of ‘Best Value service reviews’ (Boyne, 2000; Higgins et al., 2005; Stoker, 2004) were scaled back. Some elements of auditing were changed, including abandoning the highly unpopular ‘Best Value national performance’ metrics in England (Downe & Martin, 2007). Guidelines in place at the time of data collection are reviewed in Chapter 6.

There has been limited investigation into the Best Value Framework in local authority energy provision. Analysis on local authority action on energy and

climate change in England and Wales in the early 2000s (Allman et al., 2004) made some speculative suggestions. Recognising the lack of direct statutory mandate for energy, this study noted that two, now defunct, Best Value performance indicators concerning energy performance of local authority owned social housing and corporate buildings, might have stimulated action in emissions reduction in the early 2000s. However, Ball (2005, p. 364) reported that some officers did not think that any of the then Best Value performance indicators were “in line with environmental objectives”.

Determining what constitutes ‘better value’ services is considered in terms of meeting social, economic and environmental goals, opposed to lowest cost. However, evaluating this is tied to ‘economy’, ‘efficiency’ and ‘effectiveness’, reproducing the public sector concept of ‘value for money’. This trio first emerged in the National Audit Act 1983 which established the National Audit Office and gave it powers to assess ‘value for money’ in the use of public funds in relation to economy, efficiency and effectiveness<sup>6</sup> (Bourn, 2012). Bourn identifies this development as particularly significant because prior to this, public audit had focussed on the legality of public spending, but not whether it was a ‘good’ use of spending. Such alignment with the concepts of public sector auditing thus closely binds ‘value’ within the Best Value Framework to the audit of ‘value for money’ in public spending and the ‘good’ use of public resources. It is even drawn on in the legislation setting out the ‘Best Value duty’, which is discussed further in Chapter 6.

There was however, a lack of transparency and clarity about what Best Value actually meant to local authorities (Arnaboldi & Lapsley, 2008; Boyne, 1999). The notion of ‘continuous improvement’ itself was hard to interpret on the ground (Ball, Broadbent, & Moore, 2002). There was confusion over what it

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<sup>6</sup> In these terms economy is whether something cost more than it needed to; efficiency is the level of output gained from the level of input; and effectiveness is whether what has been set out has been achieved (Jones and Pendlebury, 2010).

meant and also fears that cost saving would be the crude measure of improvement simply located under the banner of quality services. Similarly, there has been uncertainty over the meaning of the concept of 'value for money', with a tendency for front-line staff to equate it with cost-cutting (Prowle, Kalar, & Barrow, 2016).

Thus, whilst more autonomy was granted on how to deliver services compared to CCT, there was concurrently a heavy burden on evidencing 'continuous improvement', and uncertainty about what Best Value and its attachment to value for money actually meant. However, how this negotiation plays out in the case of local authority energy projects is not yet known. Chapter 7 extends this discussion.

### ***Options appraisal***

Within the 'continuous improvement' of local services required by the Best Value Framework, the use of a business case tool to assist options appraisal in spending decisions has become key to 'good governance' (e.g. Audit Scotland, 2014). For example, the business case is identified as the tool local authorities should use when conducting options appraisal across service reviews, budget planning, self-assessment, when there is a new administration, and in instances of poor performance. It is also recommended for evaluating investment options across all capital expenditure projects, including energy; and when major contracts are being awarded through public procurement (see Chapter 6).

Focus on the business case in local energy (Foxon et al., 2015; which is sometimes used synonymously with business model see e.g. Hannon & Bolton, 2015) has tended to be relatively exploratory. We have little actual evidence about how local authorities construct or evaluate an energy project business case. Using smart grids and district heating examples, Foxon et al. emphasised that when assessing costs and benefits of these investments, economic (and financial) value was usually prioritised over societal and



environmental value. They argue that “increased uptake of business models that facilitate capture of value beyond the economic will require changes in the way business cases are developed and in the way infrastructure is valued at the local level” (Foxon et al., 2015, p. 8).

UK Government official guidance (*The Green Book*) for business case assessment uses cost-benefit analysis. Foxon et al. (2015) conclude that this promotes a narrow assessment of revenue streams rather than incorporating a comprehensive assessment of different benefits from low carbon projects. One of the outcomes of this was proposed as the curbing of larger scale carbon saving projects (Bale et al., 2014). Other accounts emphasise that the business case evaluation contains an unrealistic assumption that alternative options exist (Hughes, 2020). Hughes’ account emphasises the idea to ‘do nothing’, or ‘do something else’ is not feasible when it comes to meeting the scale of net zero carbon targets. Cost-benefit analysis has also been criticised for depoliticising decisions to reduce or stop government funding programmes by turning them into ‘technical exercises’ (O’Brien, 2012). Furthermore, it has been suggested there is a general tendency to under estimate costs and over-estimate benefits in evaluating the business case of major public infrastructure projects (Flyvbjerg, 2009).

How this unfolds in energy project development is unclear. For instance, we lack evidence about how local authorities construct a business case, or whether the business case has a well-defined role in local authority energy project decision making. Chapter 8 explores this further.

### ***Procuring and outsourcing***

Within the Best Value Framework, when procuring external services, councils can set a price-to-quality award criteria, instead of lowest cost evaluation (which CCT had required). Procurement is hence one of the ways that councils evidence they are securing ‘best value’ from market actors. There is

also an overarching set of EU public procurement rules,<sup>7</sup> which promote competition and economic efficiency across the single market (see e.g. European Commission, 2014).

As a set of rules and procedures governing local authority spending, public procurement has received relatively little attention in social research on local energy. Most focus has been the establishment of procurement ‘framework agreements’ which intend to standardise the contracting process for energy performance contracting projects among public sector clients (Nolden & Sorrell, 2016). Brief mentions of procurement *within* energy initiatives are also found in Ince and Marvin (2019). This study noted that in Haringey’s Green Deal Communities domestic retrofit scheme, procurement rules encouraged contracting larger companies but not local SMEs.

Beyond local energy literature, studies of contract management emphasise the significance of the buyer-supplier relationship to securing intended outcomes (Andrews & Entwistle, 2015). This includes the ability of the local authority buyer/client to engage in complex procurement and contract management in public-private partnerships where private finance largely funds public infrastructure and investment is recouped from long-term contract payments. For long-term Private Finance Initiative (PFI) contracts for major projects such as schools, Asenova et al. (2002, p. 18) noted that, “VFM [value for money] and Best Value are premised on the assumption of mutual gains from partnership”. However they reported this was difficult to achieve in practice. Notable issues raised included: the overall complexity of procuring the PFI contract structure, especially nuances over the transfer of risk; the extensive use of consultants in legal and financial contracting which did not build up incremental expertise in-house; and that public sector clients

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<sup>7</sup> Across the EU contracts over a certain value must be conducted in accordance with public contract regulations including publication in the Official Journal of the European Union (this is termed as being ‘OJEU compliant procurement’).

and private sector parties had different aims and objectives, which tended to be hard to align (Akintoye et al., 2003; Asenova et al., 2002).

Not all energy projects are analogous to long-term private finance outsourcing; however, this suggests that the ability for the local authority to engage in procurement and contract management is likely to vary, depending on factors including previous experience, the type of supplier relationship, and the use of consultants. It would also suggest that more extensive procurements involving the outsourcing of financing, under concession contract models could also involve longer, more complex contract negotiations. Chapter 9 expands on this in more detail.

### ***Discretionary powers and new borrowing rules***

When the Best Value Framework was introduced there was also some relaxing of the prescriptive *ultra vires* model. Broad ‘general powers’ of ‘well-being’, were introduced in 2000 in England and Wales, and in 2003 in Scotland, but not in Northern Ireland. As a ‘general power’ this allowed local authorities to undertake any legal activity that supported *well-being* in their area. However, the definition of ‘well-being’ was unclear (Aguma, 2013), including being treated by UK government as synonymous with sustainability (Ball, 2005, p. 354). These general powers were not resourced and thus were not prioritised amidst other statutory duties. This suggests limited scope for energy projects to be demonstrated as valuable on the basis of ‘well-being’.

To further move away from the *ultra vires* principle, a ‘general power of competence’ to undertake any lawful activity<sup>8</sup> (i.e. not restricted to well-being) was subsequently introduced in England in 2011 (replacing well-being powers) and in Northern Ireland in 2015 (Northern Ireland Audit Office,

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<sup>8</sup> Exemptions with an impact on capacity for local energy development are: raising taxes; changing the political structure; and trading in services which are statutory requirements (Sandford, 2014).

2014). It remains a proposal in Wales (Bowyer, 2018), but has not been introduced in Scotland.

In addition, local authority borrowing rules were relaxed with the introduction of prudential borrowing in the early 2000s (but not until 2011 in Northern Ireland). Prudential borrowing adopts a self-regulating approach (Bailey, Asenova, & Hood, 2012) meaning local authorities have greater control over financial decision making. First, there are no longer upper limits on borrowing from the Public Works Loan Board, which is the UK Government's facility for lending money from the National Loans Fund. Second, loan requests are not directly subject to central government approval. Instead using the prudential code,<sup>9</sup> individual local authorities assess their own ability to repay loans they take out (UK Debt Management Office, 2020). In principle relaxed borrowing rules mean that local authorities can access long-term low cost finance to fund the capital expenditure of energy projects. Nevertheless, in demonstrating the value of energy projects, officers would likely need to justify to finance managers why prudential borrowing should be allocated to these projects, as opposed to other council (statutory) priorities.

In principle these new 'general powers' and more autonomy in the use of government lending, provide local authorities discretion over use of budgets which could be directed toward local energy provision. However, similar to suspected contravention of *ultra vires*, there have also been cases of legal challenge in local authorities' use of both well-being powers and the general power of competence (Aguma, 2013; Lowndes & Pratchett, 2012). These are likely to cause a degree of scepticism about the reliability of these discretionary powers and the legitimacy of using public borrowing facilities for energy.

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<sup>9</sup> 'Prudent' and 'affordability' requirements are satisfied by having "regard" to the Prudential Code published by CIPFA and DCLG/MCHLG.

Analyses conclude that local authorities' institutional capacities have significant limitations (Ferry et al., 2017; Lowndes & Gardner, 2016; O'Brien & Pike, 2018) and fail to resolve issues concerning resourced mandates. This has led to a characterisation of 'austerity localism', where local authorities simply have more responsibility about which local services are reduced, rather than any greater agency (Blanco, Griggs, & Sullivan, 2014; Hastings et al., 2015). Morris et al. (2017) concluded that given the enormity of budget cuts under austerity, these general powers have done little to assist local authorities develop and implement domestic energy efficiency projects. Thus, instead of these reforms providing the catalyst for local energy action, local authorities still focus on delivering their statutory services. They remain without direct mandate or specific resources for action on local energy. This suggests that local authorities are likely to be reliant on both central governments' energy policies to provide funding for specific initiatives, and willingness of local officials to prioritise energy activities outside the boundaries of their core statutory remit.

## **2.4 Research scope of this thesis**

This chapter has provided a brief background to local governance and energy in the UK. Here I emphasise two inter-related themes relevant to informing my investigation into the value of local authority energy initiatives. First, I have stressed that central-local government institutional relationships are critical to understanding the marginal status of local authority energy provision in the UK. There has been inconsistent policy for local authority level intervention in low carbon energy systems. Although local authorities formally have discretion to engage beyond their statutory remit, in practice they have little agency to develop energy projects on any significant scale. Austerity also now means even statutory services are underfunded, most chronically in England. This suggests that the value of energy projects could be constructed in relation to their contribution to cost saving, thereby easing budgetary pressures. Or conversely, they may have been even further marginalised given other priorities, especially funding front-line services.

Second, I have foregrounded the UK state prioritisation of markets as the 'optimal' route for governing local public services. This is broadly characterised in the literature as 'new public management'. Within local government, extending markets has seen the normalisation of performance management and exposing local services to competition and outsourcing. Literature emphasises this as a response to central government (ideological) priorities about improving public sector efficiency through markets, but notes that efficiency here tends to be reduced to cost saving. This suggests that as energy projects are developed they are likely to interact with procedures and tools that may be aimed at securing 'best value'. This includes at any point of public procurement, but also potentially at other stages in project development such as use of the business case as an investment evaluation tool. How these are applied in energy projects is still understudied.

These two themes imply that where local authorities develop energy projects they are increasingly 'breaking the rules' of centralised governance and control (Tingey & Webb, 2020a). As case studies have shown (e.g. Webb, 2015), this requires considerable local capacity for improvisation by politicians and officials. Furthermore, the fact that most local authorities are active to some degree, despite there being no clear role for energy within their governing framework, also opens up intriguing questions about how the value of local energy is assembled.

To operationalise this research question, I propose to focus on the use of different tools identified across the literature and consider their influence in project development. First, local government studies emphasise the importance of the Best Value Framework as an overarching performance management regime that, in principle, is intended to guide local authority decision making. This overarching concept thus appears as potentially significant to *local authority* energy projects and should be investigated.

Second, the business case is suggested as an important tool for evaluating public spending, but it remains unclear to what extent it is used in energy projects. There is some suggestion that the business case and/or business model influences the ownership and business structures adopted, but we lack detailed accounts of what this process entails. Third, public procurement is emphasised across local government and contract management literature as influential in shaping the actors involved in delivering, operating and/or owning public services. This could helpfully be extended into local authority energy.

The next chapter introduces the conceptual framework guiding development of this thesis and the specific research questions. Attention is given to conceptualising these different tools and procedures within project development, whilst ensuring sensitivity to the two inter-related themes above. This includes incorporation of the politics and power at play within central-local government relations, and how this is tied into the use of tools and procedures in project development. To do this, I combine concepts from economic sociology of valuation and programmes of governing. This helps me to conceptualise the use of tools within project development as a constituent component of a 'valuation practice'. In turn, this enables me to consider how local assessments of the value of energy initiatives influence material developments.

## **3 An Economic Sociology Perspective on Valuation of Local Energy**

### **3.1 Introduction**

The valuation practices through which a local energy initiative is developed are critical. They shape whether projects proceed at all, and where they do, they influence their eventual form including their size, ownership, financing and ongoing operation. Projects generally cannot proceed without navigating development stages where the value of the project is negotiated and contested. Critical points in the decision process are: when formal decisions allocate resources (whether human and/or financial); as options for investing in a project are assessed through development of a business case; and as a variety of goods and services associated with a project are procured. This reveals intriguing questions about how the value of a local authority energy project is shaped.

This chapter sets out the theoretical approach guiding the thesis investigation and identifies the specific research questions emerging. In particular, the thesis uses the economic sociology perspective to direct attention toward the use of formal valuation frameworks – Best Value, the business case model and public procurement – which local authorities use to support decision making within the development of local energy initiatives (Chapter 6 details this). Although these frameworks are a critical part of valuation processes in local authority energy developments, they have received limited attention from social studies of energy.

Very few previous social studies of municipal energy investment have examined the effects of the valuation instruments that are actually used in development of projects. Studies first emphasise that different actors develop



valuations according to distinct financial and economic logics (Åkerman & Peltola, 2012) and they use different kinds of calculations to represent these valuations. The distinct logics shape the types of local energy solutions presented and selected. Bertelsen et al. (2019) illustrate this in their analysis of how energy system modelling tools were involved in shaping the role of future thermal storage in the Copenhagen district heating network. Distinct logics were found to shape valuations as each actor attempted to represent their preferred investment option through calculative metrics. The waste incinerator companies prioritised seasonal storage options as this would limit their mandatory shutdown requirements, whilst the transmission operators prioritised short-term storage as this would enable greater use of CHP electricity and increase the associated revenues. This suggests potential amongst different actors for varied assessments and interpretations of the same valuation frameworks such as the business case.

Additionally, comparative studies illustrate how the financial and economic cases of local energy projects are determined in part by different institutional and regulatory contexts (Hawkey & Webb, 2014; Rydin et al., 2015) which structure factors such as the cost of capital. Studies focussed on UK local authority district energy developments (Hawkey et al., 2013; 2016; Webb, 2019; Webb & Hawkey, 2016), illustrate the challenges of translating local low carbon projects into 'viable business case' investments. This includes an institutional, policy and energy market context which disincentivises investment in local clean heat business development and energy saving in buildings. One of the impacts is a perception of increased investment risk which shuts off some sources of capital for projects, and raises costs from other sources, as investors price risk. Despite the relatively secure return on investment from long-term infrastructure investment, in the case of district heating this leads to 'island' systems focussed on short-term financial return and limited carbon saving. Turning a direct focus onto the valuation

instruments themselves, would therefore add to our understanding about how these project developments processes unfold.

There are however few studies incorporating analysis of the neo-liberal governing models implemented in the UK since the 1980s that impose particular constraints on how local authorities develop energy initiatives. Studies of local government which address the influence of accounting techniques in societal organisation (e.g. Arnaboldi & Lapsley, 2008) have had very little to say about local energy provision. Equally, most energy literature focussed on UK neo-liberal governing has considered this in relation to community energy (e.g. Eadson & Foden, 2019), but has not applied these concepts to analysis of local authority energy provision.

An exception is found in Webb, Hawkey and Tingey (2016) which used a programme of governing framing to understand contrasting approaches to ownership and operation of local energy initiatives in Aberdeen, Birmingham and London. Eadson (2016, p. 1613) also explored UK government modes of “governing energy-carbon at a distance” which selectively sought to enroll local authorities into central government policy, rather than substantively creating capacities and agency for local and community level low carbon energy initiatives. Furthermore, Webb and Hawkey’s (2016) analysis of public sector collaboration in district heating in two British cities, illustrated how competing performance management regimes among different public organisations disincentivised their collaboration. Different regimes across local authorities, public health and universities sought to work against assembling what Webb and Hawkey termed a ‘problem owner’ for district energy developments serving multiple customers. This was despite the commitment from each public organisation to engage in principle in a collaborative scheme. These studies thus emphasise the need to understand wider economisation and governing processes that are likely to interact in

determining the energy project valuation processes occurring in local government.

Social studies of energy have not however, tended to incorporate investigation of the Best Value Framework or public procurement into analysis of local authority energy provision. Social studies of energy have thus only just begun making inroads into addressing questions about how valuation frameworks shape the development of local authority energy initiatives. There is little connection between economic sociology and valuation studies concepts, and programmes of governing. This provides fertile ground for a developing a conceptual framework that bridges these divides.

To explore this further, I use an economic sociology and valuation studies perspective (Çalışkan & Callon, 2009; 2010; Muniesa, 2012; 2014) to prise open the complex inter-actions occurring within project development. Using this perspective, the value of an energy project is shown not to be absolute or fixed, but instead shaped by 'valuation' processes (Muniesa, 2012) in project development. This includes the selection of instruments involved in assembling the value of energy projects such as project proposals, the business case and public procurement. Insights from 'economisation' (Çalışkan & Callon, 2009) suggest a pervasiveness of economic science within valuation practices, as tools such as the business case are likely to conform to economic rationales.

I combine this economic sociology perspective with the concept of 'a programme of governing' (Miller, 2008). Rooted in the sociology of accounting, this helps unpack the political dimensions of valuations within *local authority* energy projects. Importantly, incorporating the concept of a programme of governing allows for analysis of how political control is exercised through 'everyday doings' (Miller & Power, 2013) of valuations.

These are structured by government guidelines, codes of practice and protocols that stipulate how to appraise energy project proposals, develop a business case to evaluate investment options and organise public procurement processes. I also incorporate the sociology of knowledge concept of finitism (Barnes, 1995), to explain how the 'rules' encoded in the guidelines that intend to structure valuations in local authority energy projects are interpreted differently.

The remainder of the chapter introduces the elements of the sociological literature used to develop this theoretical approach. Section 3.2 explains the main features of economic sociology and distinguishes the approach taken in this thesis from other perspectives. Section 3.3 outlines each of the key concepts guiding the investigation into valuing local energy, and Section 3.4 sets out and discusses the research question emerging from this conceptual framework.

### **3.2 Economic sociology perspective on value**

A particularly helpful theoretical approach for conceptualising how valuation frameworks shape the development of local authority energy initiatives is found in the social studies of markets, and latterly valuation studies, of Michel Callon, Fabian Muniesa and colleagues (Callon, 1998b; Çalışkan & Callon, 2009; 2010; Helgesson & Muniesa, 2013; Muniesa, 2012). In these terms, influenced by actor-network theory, development of an energy project can be understood as a process shaped not only by the agency of human actors, but also by the interactions between a variety of infrastructural, material, and institutional objects and practices. Taking a pragmatist approach, Muniesa (2012) considers this an active process of 'valuation', where these material processes produce value. Applied to the case of local energy projects, valuation is hence expected to be mediated through project proposals and council reports, the creation of a business case, and procurement processes. This process of valuation is important, because it asserts that value is not

pre-determined or fixed, but assembled and shaped by these actor-networks, and is hence the result of negotiation.

This approach to valuation stems from the economic sociology perspective on societal organisation which probes the interactions between economy and society. Economic sociology aims to understand economic behaviour not as an absolute natural order, but as a social process resulting from, and intertwined within, socio-political organisation (Fligstein & Dauter, 2007; Preda, 2007; Swedberg, 2005). In its attempt to turn around the historic distinction between the study of economy and value (economics) and the study of society and values (sociology) (Stark, 2000; 2009), economic sociology rejects any clear-cut distinction between economy and society. Instead of the idea of absolute definitions of economic value derived from economic laws, value is instead something which is created and stabilised. Economic value is thus not pre-defined, it is a societal process open to disruption or destabilising.

Early economic sociology built on the conjecture that economic organisation is a social phenomenon. This was a direct critique of the dominant rational economic actor perspectives developed in economic science in the 1960s. Rational economic actor theories rest on the belief in a natural order of human organisation based on economic individualism, self-interest and utility maximising, embodied in the rational actor model 'homo economicus'<sup>10</sup>. This led to studying economic organisation as though it were a natural phenomenon with 'laws' akin to natural sciences and a domain separate from society. Economic analyses derived from this world view thus presume decision making is governed by rational economic calculation.

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<sup>10</sup> See Callon (1999; 2008) for extended discussion.

Economic sociology criticises the rational actor thesis, arguing that economic science tends to be asocial and lacking necessary historical context. This is encapsulated by North (2005, p. 45) as, “Economics is a theory of choice, but what is the source of choices?”. For economic sociology the ‘sources’ of choices, are associated with contemporary society and historical legacies. Economic sociology in its broadest sense aims to provide an account of the social-political-historical contexts upon which economic organisation is contingent.

Within economic sociology, sociology of markets and social studies of markets provide the two most developed accounts of the linkages involved in shaping markets (for review see Fligstein & Dauter, 2007; Mackenzie, 2009; Preda, 2007; 2009). Sociology of markets uses a meso-level political economy perspective, drawing on social structural and neo-institutionalist theories to develop analysis of the ‘embedding of markets in society’. The core argument is that markets are a product of societal organisation, with market organisation embedded within societal processes to the point where markets are not separable into a discrete sphere of economic rationality (Fligstein & Dauter, 2007). This perspective includes a series of arguments, first that market actors and organisations are shaped by networks of social relationships (Granovetter, 1985); second that markets are social institutions in which economic decision making is a politically motivated self-legitimising and rationalising process (DiMaggio & Powell, 1983), and third that markets are governed by institutional fields. The latter attempt to hold different actor groups together and in doing so cause spill over effects into other fields (Fligstein & McAdam, 2012).

Thus whilst the sociology of markets perspective binds markets, economy, society and politics as interconnected rather than separate spheres of life, little attention has, until recently, been paid to the influence of economic science in shaping market (and hence societal) organisation. In a departure

from this, social studies of markets use a sociology of knowledge perspective to turn its gaze directly toward economic science.

Drawing on actor-network and performativity theories, this perspective conceives of the potential for economic science to play an active role in shaping the institutions of society (Callon, 1998b; Mackenzie, 2006). Society is understood as shaped by accepted tenets of 'economics', as theories of economic behaviour of so called rational actors encourages formatting actors to conform to behaviour encoded in these models. In attempting to make markets more like its theoretical propositions, rather than a science of observation, economics is instead understood as a set of assertions about human behaviour and its 'law' like features (Callon, 1998b). MacKenzie (2006, p. 11) describes the performative role of financial economics as an 'engine not a camera' in shaping the actual activities of financial trading, with economic science itself understood as "an active force transforming its environment" rather than passively recording or observing.

This perspective thus examines the role of economic science in formatting societies. Callon terms this an 'economisation of society' (Çalışkan & Callon, 2009; 2010), whereby instead of social organisation producing markets, 'economics' shape and are shaped by societal organisation. Importantly this implies that disentangling or categorising 'economic' from 'society' is not possible; they are not separate spheres, but rather mutually self-reinforcing.

Significantly, the concept of 'economisation' suggests that valuations, including those associated with an energy project, are often captured by economic concepts of value. Economisation accounts for how this could occur through the wide boundary used to carve out what constitutes 'economics'. Economic influences range from formal economic science like finance theories, through to lay economic knowledge or instruments which contain economic rationales. 'Economics' thus also resides outside formal

economic science settings, in valuation frameworks, such as the business case and specific calculations contained within it, such as in the financial model. Economisation is considered as contingent and open-ended (Çalışkan & Callon, 2009), but as primarily influenced by valuation practices which conform to this broad definition of ‘economics’:

to speak of economisation is to consider that economies, in all of their diversity, depend heavily upon divergent and often controversial analyses both scholarly and lay that define, explain and enact economic forms of life. The theoretical approach we have been introducing is acutely attentive to the plurality and open-endedness of ‘the economic’ as it is brought into being through processes of economization...We use the term ‘economization’ to denote the processes through which behaviours, organizations, institutions and, more generally, objects are constituted as being ‘economic’.

Çalışkan and Callon, 2010, p. 2

Callon (2007) uses the term “economics in the wild” to describe instruments and knowledge across a variety of settings which contain economic rationales, such as the energy project business case or public procurement. For example, beyond financial trading (Mackenzie, 2006; 2019), it is argued that one of the key economising behaviours is found in the spread of quantification (Lamont, 2012). This is both as a general phenomenon within society, and in particular a growth in the use of specific economic assessments which rely on methods of quantification rooted in finance practice (Chiapello, 2015).

The notion that economic and financial rationales are encoded in instruments is important because it suggests that energy project valuations may be oriented towards certain economic representations of value, while marginalising other forms of value. The process of constructing, for example the business case, may therefore involve economising local energy projects. Or where there are multiple economic, environmental and social valuations occurring within a single stage of project development, economisation would indicate that economic valuations have potential to be the most powerful in shaping decisions about the scale, scope and organisation of projects.



Instruments which promote the energy project according to an 'economic' valuation are thus considered as possible instances of economisation.

Chiapello (2015, p. 15) argues that we are currently witnessing 'financialisation' as the most prevalent form of economisation whereby "financialised conventions are becoming an established approach to all kinds of questions that used to be relatively untouched by economic reasoning". From this perspective, financialisation and by extension economisation is active in shaping society, because it assigns financial value to objects, rather than a social or environmental value (or as public goods). Chiapello explains this transformative process:

This financialisation of valuation not only transforms the pre-existing financial quantifications; it also proposes new ways of judging the actions of an organisation for social, artistic, or cultural activities, and even nature. In each case there is a redefinition of the object being valued, which comes to be seen from the investors' viewpoint.

Chiapello, 2015, p. 30

By doing so, Chiapello argues that other systems of value, social, artistic and so on, are being 'colonised' by financialisation and economisation.

Within social studies of markets, economisation thus establishes the role of economic science in making markets. Importantly this establishes that economic activity is not pre-given or absolute but constituted through practice. This includes attempting to make reality conform to models of economic behaviour. The notion that there are sets of actors, instruments and forms of knowledge that interact to assemble economic value, leads Callon to claim that, "the construction of markets is a socio-technical construction, not a purely social one" (Çalışkan & Callon, 2009, p. 386). As this implies, practices of value-making could vary as different tools, or sets of knowledge are involved and deployed in different settings. How such processes unfold in energy project development is not yet known. A study of

practices will enable new insights into how value is assembled and why in specific domains – such as local energy – and its consequences.

Although the concept of economisation does conceive of ‘economic’ forms of knowledge in broad terms, it has been criticised for its prioritisation of economic science. Miller (2008, p. 53) for example argues that by seeing all other influences as “derivate of or secondary to the discipline of economics”, economisation is not sensitive enough to the variety of influences which contribute to ‘calculating economic life’. According to Miller (1998) this is unsatisfactory because (economic) calculation is influenced by a various bodies of knowledge such as engineering, finance and accounting. Of the latter, Miller notes that accounting itself has drawn on calculative methods from domains such as manufacturing. As such, for a study of local energy projects, it necessary to look beyond the concept of economisation. A first step is to turn to the concept of ‘valuation’ (Muniesa, 2012) which is agnostic on the influence of ‘economics’.

### **3.3 Conceptualising making of value from local energy initiatives**

Following on from the evidence of economisation of value in contemporary societies, it can be argued that the value of an energy project is not absolute or pre-existing according to valuation studies, but instead shaped by processes of ‘valuation’ in project development. Muniesa (2012, p. 26) describes how valuation “refers to something that happens to some-thing... In this sense, the idea of valuation may be tackled... as an action”. Valuation is hence a process of value-in-the-making and not something in itself. As a result, this leads to a particular focus on enactment (Helgesson & Muniesa, 2013), shifting attention away from absolute definitions of value to procedures for assessing – or assembling – value. The concept of valuation is thus used to emphasise the importance of value-making as an unfolding process.

One of the aims of using the concept of valuation is to maintain a broad conceptualisation of practices of valuing – economic or otherwise. In the launch of the journal *Valuation Studies* in 2013 for example, the concept is described as follows: “valuation might both denote something like the establishing of a monetary price for the sale of a book and the non-monetary assessment of the academic quality of a scholarly journal article” (Helgesson & Muniesa, 2013, p. 6). The valuation concept is not solely or primarily about the activity of economic value and is instead aiming to understand the variety of ways in which value is made meaningful (Doganova et al., 2018).

Muniesa’s perspective stems from a close association with pragmatist philosopher John Dewey [1859-1952]. Valuation, for Dewey, focussed on the notion of ‘use-value’ rather than universal value. Leaning on this, Muniesa (2012) sets this out as valuation’s conceptual ‘flank movement’ away from a study of value, to one of valuation. Doing so shapes the thesis that value is produced through rendering something valuable. Put most straightforwardly, something “does not have the same value before and after it has been valued” (Muniesa, 2012, p. 28). Valuation then, is not a theory of value *per se*, but is denoting a practice in which various kinds of worth (not just economic worth) are materially constructed. As Muniesa explains:

a pragmatist viewpoint shifts attention to valuation as an action... This idea of ‘as an action’ should be understood in the sense of a process, a form of mediation, of something that happens in practice, something that is done to something else, and so forth; value is definitely not something that something just has. If value is something that something just has, then we need to ask: by virtue of what?

Muniesa, 2012, p. 32

Indeed, according to Muniesa there is no external reference for value, because it is only through practicing valuation that value is made meaningful. Relative to the concept of economisation, external references or influences of economic science or theoretical models are downplayed. It is only when there is something to value that there is valuation and vice versa. In this

sense value merges with its measure through value-making processes. This is how the concept of valuation explains the economic sociology idea that value is not pre-determined.

In this framing, the measures, metrics and methods of evaluation, and the value of the item under evaluation are one in the same, they “intermingle, and become two aspects of the same act” (Muniesa, 2012, p. 31). The idea that value and its measure collapse into one is what leads to the focus on procedures for assessing value. This points a clear direction toward the material practices of valuation. It suggests it is more fruitful to focus on the effects of different techniques for assembling value from local energy projects, rather than the extent to which techniques do or do not represent what they claim to be measuring.

### **Making value through market devices**

If certain instruments, measures and metrics are important to valuations, then it is necessary to explore how these might be identified. Conceptualising the instruments involved in valuations borrows the notion of ‘market devices’ from social studies of markets, defined by Muniesa, Millo and Callon (2007, p. 2) as “the material and discursive assemblages that intervene in the construction of markets”. Denoted by the statement that devices ‘intervene’ in market organisation, the idea of a market device is to reveal the non-human elements of actor-networks involved in a value-making process (Çalışkan & Callon, 2010).

Muniesa (2014, pp. 17-25) has expanded on this, arguing that the composition of devices, such as the descriptions contained in a device, is relevant to the effects devices create. This suggests a procurement specification for example is materially significant to the eventual form and scope of an energy project and emphasises the need to understand more about its contents. The concept of a market device has been applied to

various scales encompassing artefacts and objects such as specific instruments, techniques, methods of evaluation, regulations and frameworks, and even the technical expertise from which these are derived. Callon (1998a) for example explores how marketing tools in supermarkets format consumers to calculate their preferences. Doganova and Muniesa (2015) illustrate the business model as a capitalisation device, creating investors, transforming things into assets, and creating flows of capital. At a different scale, Pollock and Campagnolo (2015) show how the 2x2 matrix device routinely used in business management to display information, participates in shaping how decisions are made.

Importantly, in this framing these instruments and techniques are not passive objects but are active in the shaping of markets and economic actors. In the case of a local authority energy project, devices involved in valuations could include: financial models, or a specific method within a financial model such as net present value, internal rate of return or payback term; business case; a technical assessment; key performance indicators; procurement specifications or a specific method within a procurement specification such as price-to-quality ratio; and (even) frameworks such as Best Value or carbon accounting methods used in the public sector. The variety of devices that could shape the value of local energy hence ranges from an individual financial calculation up to a framework like Best Value which is embedded in legislation and European wide public procurement rules.

The interactions between devices and users within valuations is understood as a configuration of a complex actor-network. Helgesson and Muniesa (2013, p. 3), interpret valuations as “often performed by highly complex socio-technical orderings involving several actors and instruments”. This builds most closely on Callon’s notion that markets are socio-technical constructions. In Callon’s (2008) framing, economic actors are not singular persons, but actor-networks or a ‘socio-technical agencement’. This

'agencement' signifies agency as distributed among human, infrastructural, material, and institutional objects and practices. Importantly, because an 'agencement' must be assembled and is not pre-given, this signals potential for variation in how valuations take place, including, for the purposes of this thesis, energy project valuations. Callon (1999, p. 194 emphasis added) for instance surmises that agency is "delegated and is formatted in networks with *multiple* configurations". This suggests that because valuation 'devices' comprise part of the actor-network involved in valuing an energy project, they deserve critical investigation themselves, and should be a core aspect of an examination into assembling value from local energy projects.

Kjellberg and Mallard (2013, p. 22) have considered how the stability of actor-networks is established and maintained, asking how "actors set up the collective socio-technical agencement that make valuation possible, stable, credible, accountable, and liable to compete with alternative perspectives on value". The response has been to consider these actor-networks as involved in 'valuation practices' (Helgesson & Muniesa, 2013), in terms of how shared belief systems construct objective value (Muniesa, 2014, Ch 1). This implies that as a set of related practices, valuations establish 'facts' as matters of shared belief. As such valuation practices are not set in stone, but rather more malleable. For example, actors could begin valuing things differently, with different devices.

From this perspective, 'devices' such as Best Value, public procurement and the business case are all constitutive elements of valuations. Furthermore, the implication of variation in configurations of actor-networks across local authority energy projects emphasises the importance of focussing on first how valuations actually take place, and second how local authority offices interpret the use of these valuation devices. Assembling value from local energy is hence dependent, in part, on particular valuation instruments, and on the negotiations involved in assembling energy valuation actor-networks.

The agency of the 'user' of valuation devices however, is somewhat opaque in this conceptual literature. Little is said within the concept of devices about how local authority officers might interpret and use valuation devices within an energy project, whether they are likely to resist the (economising and governing) tendencies of devices, or attempt to redefine or adapt them within valuations. The sociology of knowledge concept of finitism (Barnes, 1995) provides a route to conceptualising how the 'rules' encoded in devices that intend to structure valuations in local authority energy projects are interpreted by their users.

### **Finitism in value-making**

The concept of finitism tackles the application of rules, norms and classifications and learning about knowledge within a culture. According to Barry Barnes (1995) it is not possible to determine meaning simply from the existing use of terms. Classifying terms do not have an inherent meaning on their own, instead they have to be interpreted. According to finitism, the rules shaping use of a valuation device are not pre-given, but instead are dependent on a continual process of interpretation. Any assumption that people will use a device in the way it has been 'designed' is a false view of the world according to finitism. This is because users do not simply apply 'proper usage' based on existing knowledge or instructions, they determine use in a variety of ways, depending on use-context.

This reflects the science and technology studies perspective about the constant re-interpretations and negotiations in the use of technologies and devices. Importantly, finitism (re)inserts the significance of the discretion of human decision makers in valuation practices, with users having to decide how to interpret information and apply devices in a situation. This would suggest valuation practices are highly open and contingent processes and

not a simple case of path dependency. Instead, valuation practices depend on the occurrence and the interpretation of rules in every instance.

Finitism thus leads to a focus on the role of discretion and judgement in the use of valuation frameworks in individual instances of what are termed ‘acts of classifying’ (Barnes, Bloor, & Henry, 1996). The notion of acts of classifying suggests that knowing *previous* examples does not determine future application of terms. Barnes (1982, p. 36) argues it also depends on acts of classifying in the *moment*, “what the rule implies in the next instance is always indeterminate — something to be settled by judgment and decision in every successive case. Rule-governed activity is what has to be explained”. As a result considering Best Value, procurement and business case valuation frameworks from this perspective would suggest there is no ‘right’ or ‘wrong’ way to implement each of them; there will be legitimate variation depending on how groups of people are using them.

For example, Hatherley, Leung and MacKenzie (2008) use finitism to delve into the variation found in what appear at first glance normal or routine accounting practices. They argue that recording items of expenditure as an expense or a purchase relies on the judgement accountants employ. In their case this is significant because it shapes how earnings are reported to tax authorities and investors. As such these are acts of classifying and not simply the work of recording static facts. This perspective thus suggests a degree of caution is needed when considering any abstract influence of devices outside of their use within concrete settings. The knowledge contained within devices therefore does not prevent discretion in the application of knowledge in valuation practices.

### **Negotiating value through obligatory passage points**

Within energy project development, valuations could in principle occur at multiple points. These are depicted in Figure 6.1 (Chapter 6) which



characterises the development stages of an energy project. To narrow down options to a manageable and targeted number, I use the notion of an 'obligatory passage point' (Law & Callon, 1994) to identify those points most critical to the eventual scale and form of local energy provision. Using the imagery of a funnel, an obligatory passage point necessitates that actors converge on an idea or issue in order to progress forward.

This suggests that across a range of different local authority energy projects, there may be specific situations when those leading on project development must enrol and mobilise other parts of the council to enable continued development of the project. For example, selecting supplier(s) and awarding contracts in public procurement could emerge as an obligatory passage point where the council must converge on a valuation in order to progress the energy project. The negotiations involved at this potential obligatory passage point are thus likely to materially shape the scale, ownership and operation of energy projects.

During the negotiation of each obligatory passage point it is possible that a given valuation framework may operate as a 'boundary object' between different actors within the council. Susan Leigh Star who developed the concept in the late 1980s describes that "boundary objects are a sort of arrangement that allow different groups to work together without consensus" (Star, 2010, p. 602). Importantly, the notion of a boundary object suggests that the same thing can mean different things to different people. Other significant aspects are the role of boundary objects in standardising, classifying and organising. Star uses the example of a map, which might point out a camping ground for some users whilst for others it shows archaeological sites. What this illustrates is that boundary objects can have a 'shared structure' but contain a degree of interpretive flexibility that depends on their use and interpretation.

Studies of the business model (Doganova & Eyquem-Renault, 2009; Doganova & Muniesa, 2015) for instance find that the business model operates as a boundary object, coordinating across different partners who are brought into a business venture beyond the direct audience for whom the initial business model is constructed (such as a business plan for a funder). This suggests a potential for an overflowing of valuation practices and a degree of malleability in how valuation frameworks could be used in practice as actors mobilise valuation frameworks in unexpected ways. Similarly, Bertelsen et al. (2019) explored the how the 'heat plan' for the Copenhagen district heating network shaped dialogue between municipalities, local heat supply companies, and local waste companies. Though they did not use the concept of a boundary object, this indicates further potential for such boundary work.

In a local authority energy project, boundary objects could feasibly emerge around a number of obligatory passage points. For example, this could revolve around constructing the case for support from local councillors for energy projects. Also, in public procurement the tender could form the basis of mediating relationships between the local authority as a buyer and suppliers. Ultimately this suggests that each valuation framework may have a coordination role across different actors involved in the energy project. The idea of a boundary object also suggests these valuation devices could take on lives of their own in different contexts, going beyond the application and use they were originally intended or designed for.

### **Politics and power in value-making**

In order to fully understand valuations of *local authority* energy projects, a conceptualisation of the political dimensions of valuations is also required. Some valuation practices are already acknowledged as stemming from macro political trends including neo-liberalism and new public management (Lamont, 2012). Quantification for example is viewed as a particular form of

valuation that provides a mechanism for comparison of qualities (transformed into quantities) in a way that is both compatible with, and produced from, neo-liberalism (Chiapello, 2015; Espeland & Lom, 2015). However, incorporating a conceptualisation of how the political dimensions of valuations occur, and why, has been limited within valuation studies thus far (see e.g. Helgesson, Krause, & Muniesa, 2017). A lack of due attention to political agency is also a source of criticism targeted at the concept of economisation (McFall, 2009; Miller, 2008).

The concept of a 'programme of governing' provides a political anchor for local authority energy project valuations. Rooted in the sociology of accounting, this concept traces the political ideas and beliefs that structure forms of calculation and their significance for economic and social life (Miller, 2008). The programme of governing concept is concerned with turning a direct focus onto the historical and political dimensions which make it possible for particular valuation and economising practices to become dominant. It therefore seeks to understand how political agendas promote specific sets of economic, market and management beliefs. In turn, this attempts to comprehend the power dynamics, forms of agency and control which are enabled as a result. Peter Miller argues that a concern with programmes of governing:

puts to the fore the analysis of the ways in which present calculative practices have been formed historically, what conditions made them possible, what ideals and aspirations they embody, and how they seek to programme the world so as to fit these ideals.

Miller, 1998, p. 177

The programme of governing concept proposes that a 'programme' of political power is exercised and made operable through tools, procedures and valuation practices that comprise the "everyday doings" at work (Miller & Power, 2013). Assembly of the business case for example, is a central step in development of a local authority energy project and can be thought of as

one such 'everyday' activity. Critically, what this perspective adds is the argument that valuing energy initiatives comprises governing processes that are intertwined with, and structured by, politics and power in the institutions of government which promote (economistic) valuation frameworks through standardising decision processes.

In a programme of governing framing, to shape the world according to a political belief, governing is required to 'represent' the world programmatically, shaping what is to be made calculable and what ideas it should be conforming to. Then it is possible to 'intervene' in its shaping through technologies, organising how it is to be made calculable (Lapsley et al., 2010). This is described as a process of 'governing at a distance' in which norms and standards are not 'neutral' in assembling information for decisions, but are encoded with neo-liberal beliefs that set out to "transform the terms of calculation" (Rose & Miller, 2010[1992], p. 298). Some valuation practices and devices are thus thought to explicitly advance policy measures encoded with specific beliefs about the efficacy of market organisation for solving societal problems. Critically this belief in markets has historic specificity and is not simply an outcome of economisation.

In governing public administration in the UK, management accounting is perceived as particularly significant, especially audit (Power, 2010[1997]) and capital discounting techniques (Miller, 1998; 2001). They are significant because of their transformative qualities. Accounting itself is now understood as an organising societal processes (Power, 2010[1997]). Within organisations this is visible in the managerial significance of accounting and its ability to structure decision making.

This perspective argues that accounting tools have redefined the basis of decision making. As Miller (2001, p. 389) surmises, "where subjectivity and intuition once reigned, the calculative practices of accounting were to impose

objectivity and neutrality". In shaping what are perceived to be valid and legitimate assessments of value, management accounting methods are hence a political governing device through which decision processes have been reoriented to demonstrate the 'scientific', 'neutral' or 'objective' evaluations of investments (Miller, 1998, p. 184). Performance management is understood as a central component to this governing process. The Best Value framework for example involves audit, compliance and performance management meaning that it is possible to attempt to control the actions of local authority managers through enacting the framework (Arnaboldi & Lapsley, 2008).

The political appeal of introducing management accounting techniques as an instrument of UK economic policy, particularly discounting techniques have also been traced, gaining in popularity since the 1960s (Miller, 2001). According to Miller (2001, p. 390), these techniques were advanced because they enable a form of control from a distance, they are: "a simple way of governing the actions of managers. Net present value methods are based on a simple rule: only those projects with a positive net present value are acceptable". Net present value is a financial calculation based on discount rates (Chiapello, 2015), used in government decision making. It attempts to forecast future economic flows of different investment options and calculate a comparable measure of their current value. In socio-economic cost-benefit analysis of energy projects, it is used to attempt to represent net benefits to society (Groth, 2018). However, its calculation removes the specifics of projects and their other forms of value and judges them based on a single figure, from the perspective of an investment. This implies that in capital investment projects such as the energy initiatives studied here, the value of an energy project is likely to be interpreted through standardised accounting calculations.

Economisation in public life is thus not solely about the influence of economics (Miller, 2008). Rather, it is about how forms of valuation, such as assessment through a business case, creates possibilities of political control, by disciplining and structuring decision processes. The little discretion afforded to local authority actors in UK governance and power sharing structures (see Chapter 2) is thus fixed in a particular socio-political historical (opposed to purely 'economic') context, associated with neo-liberal models of UK governing, implemented since the 1980s.

This perspective thus provides insight about how negotiation of value is likely to be structured within overarching constraints or limits from a programme of governing. Importantly, there are historical legacies and rules governing local authority valuations. The users of valuation devices in local government for example are not totally free to select devices at will. Rose and Miller (2010[1992]) formulate this as an exercise of control through "technologies of government". In the instance of the business case for example, this is important because it is recommended to local authorities as the 'correct' valuation device for assessing capital investment proposals and making prudent and accountable decisions concerning use of public funds (see Chapter 6). The business case could be considered one of these 'technologies of government' in this perspective, because its terms fix the representation of the domain being governed (here the local authority energy project), according to a political belief, in this case informed by neo-classical economic theory of market efficiency.

Equally, Best Value is articulated as a fundamental component of local governance (e.g. National Audit Office, 2019). Public procurement is also a rule governed valuation process embedded in legislation and structured to deliver specific political objectives, particularly minimising nepotism in awarding contracts and ensuring fair and open competition. Each of these valuation frameworks are thus about more than economisation; they are

structured by a political agenda. Take open competition, although it is associated with market functioning, the promotion of open competition within procurement is not a purely economising issue: it is also something which is at stake within the political domain. As a result, it must be governed through the application of standardised rules, guidelines and practices which local authorities are expected to structure their own energy project valuations around. From this point of view the economic and performance management rationales contained within valuation devices are politically motivated, reflecting a specific theory of efficiency in public spending.

This perspective thus emphasises the political attempts to control performance in public organisations through formal rule governed valuations. Importantly however, this opens up the idea that a programme of governing is incomplete. Political and economising governing processes are described by Lapsley, Miller and Panozzo (2010) as “congenitally failing”, never fully achieving what they set out to do. This is attributed in part to the expectation that what can be programmatically controlled and economised is always more ambitious than what could be achieved in practice. A huge number of dynamics need to be working in concert for a ‘successful’ programme of governing economic life, leading to all sorts of divergences in practice.

Valuation practices are thus inevitably contingent, unstable and fragile. They have the potential to be disrupted or obstructed by a number of different forces. Minimally this is thought to include: the introduction of new methods and new ways of counting (Miller, 1998), such as Best Value or the business case; the disruptive force of their ‘users’ who instead of simply operating devices, may manipulate or set off to use them for alternative purposes (Rose & Miller, 2010[1992]); and as the result of a reflection to other concerns, such as the desire for greater transparency in decision making in the wake of the financial crises (Miller & Power, 2013). A degree of open-

endedness and the potential for struggles and contestations surrounding energy project valuations is thus envisaged.

### **3.4 Establishing a research question to investigate value-in-the-making of local energy initiatives**

The perspective introduced in this chapter opens up inquiry into practice of assembling value in local authority energy projects. This shifts attention away from definitions of value to procedures for assessing value. The implication of the theoretical concepts brought together is that the value of local energy is not pre-given, but materially constructed through instances of valuation practices. Valuations are therefore contingent practices, involving establishing a shared meaning about value judgements. Valuation practices can feasibly vary as different groups start valuing things through alternative sets of practices, and also change over time. The significance of this is the proposition that how things are valued matters, having consequences for local energy systems development. Prompted by this sociological perspective, the following research question has been developed to guide the investigation:

#### ***Overarching RQ. How is the value of local energy initiatives assembled?***

This research question is derived from the conjecture that a local authority energy initiative is constituted through a process of ‘value-in-the-making’ that is mediated through formal ‘instruments of valuation’. The pervasiveness of economisation processes suggests that energy initiatives are likely to be defined in economic terms, as valuation frameworks – instances of ‘economics in the wild’ – are likely to contain economic rationales.

Nevertheless governing processes are a reminder that valuing *local authority* energy initiatives is not simply the outcome of an economisation of society. It is instead intertwined with, and structured by, politics and power relationships across institutions of government, which are implicated in economising



processes. These political programmes create historical legacies and set the boundaries of valuation, through requirements such as public procurement rules.

Economisation and governing processes are however, dependent on how valuation instruments are used in practice. This is poorly understood and lacks empirical evidence. Although we know little about the use of such instruments by local officials, a degree of open-endedness and a struggle over economising and governing processes is envisaged. The finitism concept suggests valuations are open ended, owing to the need to interpret how to use valuation frameworks in each instance. The need to establish coherence within an actor-network to enable the stability of valuations also suggests variability in how this unfolds in individual instances. Valuations are also likely to revolve around processes of contesting and negotiating formal valuation frameworks according to both obligatory passage points within energy project development. This suggests critical junctures within valuations, and the potential for valuation frameworks to work as boundary objects. Thus despite pervasive economisation and governing processes, there should be some malleability and a degree of interpretive flexibility in valuing local energy initiatives. Findings about assembling the value of local energy initiatives may therefore illuminate the limits of economising and governing processes when they are put into practice.

Local Authorities are thus expected to use a variety of practices to navigate and negotiate the three valuation frameworks selected for investigation – the Best Value framework, procurement processes and the business case device. Some are expected to resist economisation processes, exercising agency by working with more diffuse notions of ‘best’ value and financial value in order to include broader socio-economic and low carbon energy benefits in assembling value. In other instances, orientation to relatively short-term financial value is expected to restrict potential to capture other

forms of social and environmental value, and public goods. Impacts on local energy governance and organisation are likely to manifest in: the scale and scope of energy initiatives; the costs of project development; and in choices concerning business and delivery structures and the ongoing control and management of projects.

Subsidiary questions open up the investigation. They have been developed considering the conceptual framework and previous research on local energy governance. Each question will be analysed through the empirical chapters which are structured according to the three valuation frameworks. Overall findings are brought together into a final discussion considering how the frameworks for organising and measuring value inter-relate with assembling local energy value.

***RQ1. What roles do formal valuation frameworks play in decision processes for local energy initiatives?***

This question enquires into the operation of the three selected valuation frameworks – ‘devices’ – in the development of local authority energy projects. An important step will be identifying how, if at all, an energy project is itself structured to fit into established valuations. This will provide an opportunity to consider instances of economising and governing at a distance, analysing the ways in which each valuation device promotes the energy project according to set terms. Based on the theoretical perspective, preliminary expectations about the role of each valuation instrument are as follows.

The Best Value Framework was set-up as a fundamental component of a local authority’s agency to shape service organisation, providing the means to move beyond the lowest cost model of delivery hence opening up valuations beyond economic terms. Given local energy is not a statutory area of local government provision, Best Value seems likely to be important to the development of initiatives; it should, in principle, assist in recruiting

new discourses to justify activity and investment. Specifically, it should, in principle, help to integrate forms of non-financial value into project proposals (each device is described in detail in Chapter 6). However, as introduced in Chapter 2, the Best Value Framework replaced a procurement model, and widened its reach across the organisation. It simultaneously contributes to the audit of local government performance, particularly in relation to the central government stipulation that value for money is achieved in public spending. Within the Best Value Framework, both the business case and public procurement can be used to demonstrate its application. The programme of governing concept suggests the constitutive aspects of this performance audit theme are likely to be particularly powerful in structuring valuations through focus on the procedural dimensions of transparent decision making and prudent use of public funds. Because we have little evidence about how Best Value unfolds in practice, Chapter 7 explores this by considering how these two dimensions of Best Value collide with the value-in-the-making of local energy projects.

The business case for a local energy project is a techno-economic options appraisal, developed to support decision processes about energy projects. It is recommended by UK and devolved governments as the correct valuation framework for local authorities to use in evaluating capital investment projects (see Chapter 6), including energy. The programme of governing argument that political power is exercised and made operable through everyday activities is used in Chapter 8 to conceptualise assembly of the business case as one such 'everyday' activity. Council internal assessment of the merits of the business case proposal is thus expected to be critical to local energy systems development, because energy projects involve commitment of capital resources, and are a discretionary area of provision; without 'sign off' projects do not proceed. The concept of 'economics in the wild' suggests also that the business case is likely to promote economised valuations and has potential to go beyond its anticipated application and use.

Chapter 8 thus uses this concept to interrogate how, if at all, economic rationales restrict assembly of social or environmental value which often provide the initial motivation for local authority engagement, and whether energy projects are instead increasingly geared towards 'attractive' financial returns.

Public procurement is the main point at which local authorities interact with supply chain actors in energy project development and is one of the central steps in project development (e.g. Greater South East Energy Hub, 2020; King, 2016a). It involves coordinating across energy and procurement teams, potentially external procurement specialists, and also a variety of suppliers. There is a fair degree of variation depending on the nature of an individual procurement process (see Chapter 6). However, the notion that valuations depend on distinct constellations of calculative actor-networks suggests that how local authorities navigate the maze of procurement rules for their energy projects is significant. Chapter 9 therefore explores strategies to configure the 'intelligent buyer', as local authorities seek to exert influence in the procurement process in order to capture local forms of value.

***RQ2. To what extent are there degrees of interpretative flexibility within formal valuation frameworks with implications for local energy initiatives?***

The second step to understanding how value is assembled involves enquiring into how local authority officers interpret the meanings encoded within valuation frameworks. This involves identifying how valuation frameworks are interpreted in practice, and exploring how they are negotiated and contested in decision processes. This will provide the opportunity to consider the proposition that local officials' interpretations of devices are likely to structure the material impact of a device on decision making. Based on the conceptual literature about user's agency, preliminary expectations in relation to RQ2 are as follows.

As Chapter 6 explains in more detail, each valuation framework is presented within government guidelines as though they are standardised instruments with core 'rules' for uniform application. In principle this suggests there should be normalised and systematised applications of each valuation framework within decision processes. However we have little evidence about how valuation instruments are used in practice; this remains a question for empirical examination. The conceptual framework developed here suggests 1) that users are likely to interpret meaning contained within valuation frameworks in a non-deterministic way, suggesting a degree of interpretative flexibility within what appear at first glance to be 'standard' or routinised decisions; and 2), the limits of economising and governing processes insert the potential for local discretion and 'divergence' from prescribed use of these valuation frameworks.

Local authorities are complex organisations with differing compositions of skills, expertise, resources and commitment to local energy. Using the argument that valuation involves a socio-technical constellation of actors, objects and structures, each local authority could utilise specific valuation frameworks differently within this process. Because assembling value is argued to involve processes of 'making', there is an expectation of inevitable variation in how such processes take place across the cases. Ultimately this repositions the potential for exercise of agency by officials interpreting rules. This could create divergences in the use of valuation frameworks, as well as struggles over outcomes.

Struggles are likely to be contingent on: the expertise of the officer tasked with assembling the business case; the institutional characteristics of the local authority; the pressures of austerity; the degree of shared understanding about the different evaluative methods; and the extent to which the results of 'standardised' valuations are accepted as factual valuations of the energy project. These are likely to be significant to

economisation, because they all have potential to shape the financial and economic ‘viability’ of projects. As Chapter 9 explores in relation to procurement, such ‘factors’ are hence not analysed as barriers or enablers for local authority energy projects, but as constitutive elements of a calculative actor or ‘intelligent buyer’ of local energy.

Additionally, despite the standardising attempts associated with these valuation frameworks, they may be adapted according to circumstances of individual energy projects. For example, Best Value remains a contested concept within local government (see Chapter 7), despite continued assertions that it is a core element of local governance (see Chapter 6). Furthermore, there may be various ways in which the business case is compiled and drawn on in decision processes. For instance projects that rely on grant funding, or have lower levels of capital expenditures, may be subject to less formal evaluations of the business case (see Chapter 8).

Within procurement, the detailed specification, and the relative emphasis placed on price and quality indicators in assessment, are likely to be key areas where the value of energy initiatives is contested. For instance the weighting given to lowest cost versus quality indicators in assessing and awarding contracts may be a point of contention, exacerbated by austerity budgets. More broadly, given the costs and resource intensity of public procurement, it is expected that there will be debate surrounding whether procurement itself enables ‘best’ value to be delivered (see Chapter 9).

Local officials may also use each valuation framework in ‘unintended’ ways. For instance, empirical chapters consider how each valuation framework operates as a boundary object bringing new actors within the local authority into decision processes. Best Value may provide a language through which to communicate the value of local energy initiatives where they contribute to social, economic and environmental value. The business case device may

act as a means to mediate coordination with finance directors over the value of local energy initiatives. In each instance, this presents a potential route to institutionalising local energy as a central feature of a local authority activities.

This chapter has outlined the conceptual model guiding this thesis, which bridges economic sociology of valuation and programmes of governing. I have emphasised how concepts of valuation, economisation and governing bring distinct elements to allow analysis of the influence of formal tools and procedures within energy project development. Most importantly, this perspective is used to conceive that the application of formal valuations involves interpretation, negotiation and contestation. The subsequent analysis is therefore sensitive to exploring valuation practices configured during project development. The conjecture that formal valuation instruments attempt to standardise valuation practices and therein enable governing at a distance, is examined in relation to the Best Value Framework in Chapter 7. The notion that valuations are likely to assemble energy projects in economic terms, is investigated in relation to assembly of the business case in Chapter 8. The proposition that valuations involve negotiation between multiple actors, is explored in relation to navigating public procurement in local energy in Chapter 9.

Prior to moving onto the empirical chapters, the next chapter details the methodology and research design.

## 4 Methodology and Research Design

### 4.1 Methodology

In this chapter, I detail the methodology and research design shaping my thesis investigation. My research question asks how local authorities assemble value from local energy projects, despite a governance context that fails to provide a clear route for consistent engagement with energy. A qualitative research design uses analysis of multiple-case studies (40) to investigate this topic. This methodology is first explained, before the remainder of the chapter details the research design.

The methodology adopted in this thesis addresses four key limitations in existing literature on this topic. **First**, the study generates social science research on local energy. Overall, evidence shows that energy research has too narrowly focused on engineering and economics, with relatively few social science studies. The opening volume of *Energy Research and Social Science*, reported that only a fifth of research published in policy relevant energy journals between 1999-2013 involved social scientists and social science methodologies (both quantitative and qualitative) (Sovacool, 2014). These contributions were predominantly from public policy and business, with less than 1% from sociology. Although the use of social scientific approaches to energy is growing (see Van Veelen et al., 2019), there is still much to do.

Social science enquiries have a role in bringing ‘society back in’ (Urry, 2011) to energy research. Rather than skimming over societal processes and locating them as separate or detached from energy, social science grasps energy as an interconnection of economic, technical, societal and political issues (Shove, 2010). The local energy projects studied in this thesis provide a lens through which to critique the societal processes shaping contemporary



local government institutions, by asking how and in what ways these influence local energy systems.

**Second**, the study acknowledges the limited availability of in-depth qualitative evidence on the processes shaping energy developments among local authorities. For example, in studies of urban energy governance, local authorities are identified as important actors in directly leading and facilitating energy project development in the UK (Rydin et al., 2013), and globally (Castán Broto & Bulkeley, 2013). However, these studies were based on compiling secondary data sources and have not provided detailed evidence about what shapes project development.

Given their status as local institutional actors, and their ambiguous positioning as a 'new' energy actor within energy and climate policy (see Chapter 2), it is essential that social energy research focus squarely on local authorities. Questionnaires have been used to gather local authority perspectives about municipal capacity building through knowledge exchange networks to progress action on climate change (Aylett, 2015). Quantitative analysis about climate plans has also explored the role and extent of climate change within local government planning in both UK (Allman et al., 2004; Heidrich et al., 2013), and European cities (Heidrich et al., 2016; Reckien et al., 2018). Combined, these studies provide important insights about forms of urban energy, the impact of capacity building attempts, and the extent of climate planning processes. They are however, less informative about the actual feasibility of implementing ambitious local authority energy and climate strategies. Nor do they provide answers about why some local projects proceed, but others do not. For this, more in-depth qualitative research is required.

**Third**, this thesis adds to the case study body of evidence in a novel way. Case studies have begun to provide this important in-depth contextualised

analysis of local energy developments, but have focussed on small numbers of cases. Case studies can be grouped as follows. Single-case studies of: local authority energy processes (Bale et al., 2012; Lemon, Pollitt, & Steer, 2015; Rocher, 2017; Webb, 2015); or, urban energy processes that are not specific to local authorities, but they nonetheless heavily feature (Åkerman & Peltola, 2012; Coutard & Rutherford, 2010; Hodson & Marvin, 2016).

Comparative multiple-case studies usually using two or three cases of: municipal urban energy initiatives and processes within the same state (Becker, Beveridge, & Naumann, 2015; Becker, Naumann, & Moss, 2016; Hawkey et al., 2013; Shackley et al., 2002; Webb & Hawkey, 2016); or, cross-country comparative multiple-case studies exploring the impact of the different institutional capacities of local authorities and urban energy developments in each country (Eckersley, 2018; Emelianoff, 2014; Hawkey & Webb, 2014; Wurzel et al., 2019). Often classed as leading or pioneer cities, the small number of cases limits understanding patterns across a broader range of local authorities.

To add to this literature, I draw on a much larger number of case studies (40) of UK local authorities. This enables building a broader picture of the patterns in decision making, across a breadth of different councils, energy projects, and ownership and business structures within the same state. Generating insights from this larger group of multiple-case studies will also yield answers about the transferability of conclusions offered through single and small number case studies. It will also tell us more about the feasibility of conducting multiple-case studies of local energy on this scale. It also avoids over researching a small number of cases.

**Fourth**, the study uses the economic sociology of valuation perspective to focus on an understudied area of local authority energy: detailed analysis of assembling value from energy project development. Areas of local authority responsibility and concern are required to meet UK commitment to a net zero

carbon economy and society by 2050, including major improvements in energy efficiency, heat and transport (Tingey & Webb, 2020b). Economic analyses have already demonstrated the economic case for these cost-effective investments at city scale (Gouldson et al., 2015; Sudmant et al., 2016; Williamson et al., 2019), yet systematic change is not occurring. Studies such as these hence only show us part of the picture. With no resourced mandate for local government engagement, and no significant municipal energy sector, it is therefore critical to understand more about how and when councils actually proceed with energy initiatives. Sociological concepts, with their focus on how investment options are assembled and assessed in project development offer an ideal way to explore this problem.

In addition, the sociological literature on value-making (Chapter 3) has mostly focussed on theory building. There are now calls for empirical studies of valuation in practice (Helgesson & Muniesa, 2013). Thus far, social studies of energy have mostly responded through analyses of ‘market devices’ of energy, such as feed-in tariffs and smart grids (for review see Silvast, 2017).

This theoretical literature can however be applied in the empirical context of UK local authority governance and local energy development (e.g. Webb & Hawkey, 2016). This includes examination of specific valuation frameworks. Arnaboldi and Lapsley (2008, p. 32) for instance, argue that we lack the “empirical evidence on what Best Value means in practice” to accurately assess its effects in governing local authority decision making. In particular, we lack knowledge about the role of valuation frameworks in shaping the type, size and scale of projects; and, about how some councils manage to create headway in local energy despite no statutory mandate, but others do not. Studying *how value of projects is assembled* is critical to understanding the changes needed to make tangible progress on net zero goals.

In response to these four limitations, this thesis applies an economic sociology perspective to 40 UK local authority case studies to analyse energy project valuation practices. This offers generating an in-depth understanding of the struggles councils face as they negotiate tools and procedures during project development, and the impacts this has on local energy systems.

## **Background to the study**

This PhD was funded through the *Local Engagement in UK Energy Systems*<sup>11</sup> (LEUKES) research, and my involvement in this played a key part in determining appropriate data collection methods. LEUKES is one of the major social science research projects on UK local authority energy in the past seven years. My involvement provided significant opportunities to devise an extension to LEUKES data collection, to specifically examine local authority valuation practices in energy investment.

The LEUKES project had a much broader scope and objective than my PhD investigation of value making in local energy (see Webb et al., 2017)<sup>12</sup>. Aspects of LEUKES research relevant to this thesis include my selection of case studies and main data collection methods. LEUKES created a new UK-wide database from secondary data, and mapped the extent of energy strategy and projects across the entire UK local authority population<sup>13</sup>. Findings informed subsequent development of a strategic sampling frame to select 40 local authority case studies, with the aim of further investigating the variety and scale of local engagement across the UK. In 2015 – 2016, I led on original data gathering about 40 local authorities actively developing project investments, using semi-structured interviews, local authority documents and an online questionnaire.

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<sup>11</sup> Co-funded by the Energy Technologies Institute and RCUK through the UK Energy Research Centre.

<sup>12</sup> Also see <https://heatandthecity.org.uk/project/local-engagement-with-uk-energy-systems/>.

<sup>13</sup> I first created this UK-wide database in a pilot study during 2013 – 2014 (Hawkey, Tingey, & Webb, 2014; Tingey et al., 2016; Webb et al., 2016), and updated and extended it in 2015 (Tingey & Webb, 2020a; Tingey, Webb, & Hawkey, 2017; Webb et al., 2017), during the main phase of research which ran from 2014 – 2017.

Data collection about these 40 local authority case studies was extended to incorporate my investigation of valuation practices for local energy investment, and the focus on the Best Value, business case and public procurement frameworks. This involved a dedicated topic within the LEUKES interview schedule, using supporting data from the LEUKES online questionnaire, and requesting documents from case study local authorities (see Section 4.4). In addition, for my PhD investigation I gathered and analysed documents about formal council decisions on local energy projects and procurement advertisements, and central government rules and guidelines about each framework. I also carried out informal observation at district energy workshops between 2012 and 2018<sup>14</sup>.

In total, data I draw on was generated about specific energy projects in each case. This aimed to understand the origins and objectives of energy projects, and subsequent development trajectories, including negotiating each valuation framework. In addition, data collection explored councils' wider approach to energy beyond these individual projects. This aimed to uncover more about the extent energy was situated and made valuable in relation to organisational priorities, and the influence of the programme governing local authority energy strategy and investment.

The remainder of the chapter describes the method in detail; aspects of the wider LEUKES data collection strategy are included where it is necessary to explain my data gathering.

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<sup>14</sup> This comprised a total of ten one-day workshops: six of the UK Local Authority District Energy Vanguard Network; and four of the Scottish Heat Network Partnership Practitioner Group workshops. I also played a supporting role in convening these networks.

## **4.2 A multiple-case study approach**

Developing multiple-case studies aimed to uncover how the value of local energy initiatives is assembled. The economic sociology and valuation studies perspective aided conceptualising processes of value making in local authority energy initiatives, and selecting three valuation frameworks for dedicated investigation (Best Value, the business case and public procurement, see Chapter 6).

### **Generating in-depth understandings**

The case study traces back to the ethnographic work of Malinowski in the early 20th century, but is now used in a huge variety of social settings and includes multiple methods of data generation. Case studies therefore vary in their scope and application, such as in-depth investigation into a single-case study or comparison across multiple-case studies.

Case studies are especially suited to examining ‘how’ or ‘why’ social interaction at micro- and meso scale influences societal changes (Yin, 2014). As Chapters 2 and 3 uncovered, despite the proposition that the assessment of energy initiatives is materially significant to their value, little is known about the actual processes involved in ‘value-in-the-making’. There is limited evidence about how valuation instruments are actually used in the development of projects. In addition, it is unknown how the phenomena of ‘valuation’ create material consequences for local energy systems development. A multiple-case study approach offers means to generate new primary data and combine multiple data sources to explore, in-depth, how three different valuation frameworks shape the development of energy projects in each local authority case, as well as comparing interpretations across cases.

Case studies hence enable analysis of multiple dimensions of local action to assemble value, including multi-level governance context. Analysis of

secondary data on local authority energy strategies would provide limited in-depth evidence about actual processes shaping when, and under what conditions, local energy is pursued. By contrast, case study approaches generate detailed and complex understandings about social research problems (Flyvbjerg, 2006). There is also limited secondary data about local authority energy initiatives available, in part because reporting requirements for local energy are unclear. My area of research requires collecting new data. I draw on Yin (2014) and Flyvbjerg (2006) in developing my case study approach.

### **Identifying cases**

The topic investigated in this thesis is value-making in local energy. Specifically, the *local authority* organisation is defined as the actor of focus, and *the valuation practices* involved in development of energy projects is explored. The case study design treats each local authority as a single case, understood as a 'bounded system' (Yin, 2014) distinct from other cases.

According to Yin (2014), by building conclusions from multiple independent cases, multiple-case designs provide a route to generating reliable findings and drawing analytical (rather than statistical) generalisations. Similarly, Flyvbjerg (2006) explains that context-dependent case study research provides examples of a phenomenon in situ and/or enables generalisation. The use of multiple-cases and a case selection strategy is one way to ensure findings are not skewed by an 'unusual but artefactual condition' (Yin, 2018) that could be associated with a single-case study. Higher confidence in thesis conclusions can therefore be derived from the cross-case analysis.

Because local energy governance is open ended and has no clear trajectory (see Chapter 2), these factors contributed to my adoption of the case study analysis approach. Consequently, multiple cases are essential for uncovering how valuations in energy initiatives actually occur in different local authority

contexts, and understanding how different approaches impact on the shape and form of local energy projects.

Furthermore, because of the variability in local energy developments, reliance on a single case would provide limited additional knowledge to the existing case study literature outlined in the Methodology. The larger number of case studies used here (40) is instrumental to building a broader picture of the intersecting dimensions of assembling value in local energy investment. Both single and two/three comparative case studies are unable to provide this kind of contribution.

### **Data and methods**

Case study research typically combines different methods of data generation, for triangulation (Yin, 2014). Multiple sources of data strengthen the body of evidence developed, minimising the potential for partial data. The approach I developed focussed on conducting interviews with local authority officers, and reviewing documents from different sources. To supplement this and to support findings from interview data, I used data gathered through an online questionnaire.

I also conducted informal observation at practitioner workshops throughout my period of study (as noted earlier in Section 4.1). Discussion during these events, my notes and the presentations (where they were made available) were an invaluable additional resource about contemporary local authority energy. They helped me develop my own understanding of local authority energy, the pressures officers faced in project development, and areas requiring further support. For instance, 'building the business case' and the role of 'public procurement agencies' were both dedicated topics of district energy practitioner workshops I attended. I inferred from these workshops that the business case and procurement were ongoing areas of difficulty in project development. In particular, they seemed points where the project was



liable to breakdown, or divert from original intentions, mostly by reducing in scale or being delayed by lengthy contractual negotiations. Exploring further how the value of energy was constituted and conformed within these valuation frameworks, hence seemed a logical approach.

### **4.3 Selecting a strategic sample of local authority cases**

Selecting cases is a crucial element to the multiple-case study approach. Because of the large number of cases used I drew on a sampling frame; this depicts how elements from a population are captured and represented in a given sample. The sampling frame sought to ensure that local authorities of different types (in England) and across devolved government with active engagement in energy projects were included. The population for this study is all UK local authorities. From this sampling frame, in keeping with case study research the 40 local authority cases selected are intentionally strategic rather than representative. As such, it can be described as a purposive sample for selecting 'information-rich' cases of certain types of interest (Mills, Durepos, & Wiebe, 2012).

In particular, these strategic multiple-case studies aimed to extend LEUKES findings from an earlier high level mapping (see Chapter 2), with in-depth investigation. Building on these results involved prioritising certain regions (Yorkshire and the Humber, and Greater London) and types of local authority within England (metropolitan district boroughs), as well as Scottish and Welsh local authorities. The sampling frame also incorporated the degree of engagement with energy defined within the LEUKES research. This characterised a continuum of local authority engagement with energy from least to most active. The least active authorities showed no evidence of strategic energy planning or investment in energy projects. These were excluded because it was expected they would generate limited data.

An initial target sample of local authorities was generated (see Appendix III). This provided additional ‘back-up’ cases. 40 case study authorities were successfully recruited; the sample is summarised in Table 4.1.

Table 4.1 Sample case study authorities

Country	Region	Count	Authority Type	Count
England	East Midlands	3	Unitary	9
	East of England	3	London Borough	6
	Greater London	6	Metropolitan District	7
	North East	2	County Council	2
	North West	3	District Borough	3
	South East	2	Combined Authority	2
	South West	4		
	West Midlands	2		
	Yorkshire & the Humber	4		
Northern Ireland		1		
Scotland		7		
Wales		3		
		40		29

Representative generalisations are therefore not possible from this multiple-case sample; however this is not the goal of case study research. As described in Section 4.2 there is potential for analytical generalising from the study. The large number of cases (40, approx. 10% of the local authority population) also offers the potential for identifying key shared themes, as well as more specific and individualised findings.

This large multiple-case design also provides a significant opportunity to broaden the existing case study literature described in the chapter introduction. I therefore chose to include all 40 local authorities in my multiple-case study research design, rather than select a sub-group. Chapter 5 provides an overview of the 40 cases.

## Recruitment

A database of lead contacts in each target local authority was developed. Some potential contacts were already known through the LEUKES team’s prior involvement in local authority district energy knowledge exchange networks. Others were identified from checking council websites for

energy/climate change teams, through lead contacts named in council documentation about specific energy projects, and via informal approach at local energy events and conferences.

An initial email, including a 'Project Overview' (see Appendix VI), was sent to lead contacts. This requested an informal telephone call to discuss their potential participation in the research. The follow up telephone call lasted between 20 and 60 minutes and was used to explain the LEUKES research including the focus on energy plans and strategies, and selecting specific energy projects for review within the wider context of the organisational priorities. Following this telephone call, the respondent received an online questionnaire and full details about the research, and a date for an interview was confirmed.

Because the LEUKES data gathering involved two stages (completion of online questionnaire and subsequent interview), one potential issue was recruitment of local authority participants to complete both stages. It was crucial to my investigation that participants contributed to the second stage interview. To mitigate against the potential for drop off between the two stages, participants were fully informed during recruitment about the two stages and how much time they would need to contribute.

In total officers from 51 local authorities from the target sample were contacted; 40 agreed to take part, seven did not respond to emails and telephone requests, and four declined. Two of the officers that declined explained that they had previously contributed to academic research, but that current work pressures prevented them from participating. It is possible that those who did not respond were also facing similar pressures.

In discussion with each lead contact, a specific energy project was selected for close examination that was ideally near completion or operational.

Practically, specific projects provide concrete examples to structure data collection. They also provide a lens through which to gain in-depth insight into the process of negotiating value within local authority energy provision. Projects further along in development or operational were prioritised so that the three valuation frameworks could be considered in each case. This helped to obtain as complete as possible a picture of the project's development. Projects in early stages of development have uncertainties which would limit the validity and reliability of the data including eventual size, scope, financing and ownership, and risk of stalling. Where this was not possible the interview schedule included enough flexibility to discuss the expected trajectory of the specified project, and to talk about other projects which were also being developed within each case. This allows me to draw on data about a total of 52 energy projects in subsequent chapters.

When determining the inclusion of energy projects, priority was given to decentralised generation and supply, and demand management through improving the energy efficiency of buildings, because these accounted for 75% of all 458 projects found in the mapping phase of the research (Tingey & Webb, 2020a; Webb et al., 2017). A small number of projects fell outside this remit and were selected on the basis of their importance to the particular local authority (projects are introduced in full in Chapter 5).

As explained in Chapter 5, local business and governance models for these projects range from full council ownership and control, shared ownership/control with other project partners, to the council not having a direct involvement in ownership of the project. Project legal structures included in-house, community interest company, community benefit society, company limited by shares, company limited by guarantee, cooperative society, and limited liability partnership. The variety of different ownership structures and legal forms included in the cases is helpful for exploring value-making in different contexts. For example, this will help understand how

negotiating a project's value influences decisions about ownership and control and the eventual scale and scope of projects.

#### **4.4 Case study data collection**

Case studies typically draw on multiple data sources (Yin, 2014). I use three main data sources; interviews, energy project documents and guidelines about the selected valuation frameworks. Below describes the data generation tools and process, according to the following phases of data collection: background (understanding framework guidelines); piloting data collection; gathering data through interviews and supplementary documents.

##### **Background: guidelines about the Best Value Framework, the Business Case and Public Procurement**

Background data gathering about each selected valuation framework focussed on documentary evidence. This was drawn from legislation, published guidelines and protocols from government and related agencies. Materials were obtained from government and related agency websites (as described in Table 6.1, Chapter 6). These were used in analysing how each framework is expected to operate and be implemented.

The goal was to form an understanding about the intended programme of governing of local authority practices through each framework. This is an important step because of the conjecture that any such programme of governing is 'congenitally failing' (Lapsley et al., 2010; P. Miller & Rose, 2008) and hence filled with deviation from the intentions designed into rules, guidelines and tools. One dimension of understanding how these valuation frameworks shape value-making thus involves creating a picture of what effects they intend to create.

As legislation, regulation and guidance is specific to the frameworks, these documents do not necessarily have a direct focus on local energy.

Documents were selected on the basis of considering them as 'schemes of

social organisation' (Prior, 2008) within valuations. Results help to develop indicative factors relating to how each framework is expected to govern assembling of value from local energy.

### **Piloting primary data collection**

Primary data collection was enabled through extending the two existing LEUKES data collection instruments: an online questionnaire and interview schedule. For each of the 40 cases, an online questionnaire was designed to capture accessible information about a specific energy project and basic information about the development of any local energy strategy. A follow up semi-structured interview discussed in more depth: decision making about local energy strategy and projects, including discussion of each framework; the value of local energy projects, as defined by the council; achievements and challenges over the project lifetime; and policy changes to support local energy.

### ***Using a workshop to assess feasibility of data collection tools***

A central objective of piloting was to identify the feasibility of extending either, or both of the LEUKES instruments to incorporate my primary data collection. The questionnaire and interview instruments were developed iteratively and included holding a workshop session with district energy practitioners (public and private sector) at a UK Local Authority District Energy Vanguard Network workshop on business models in December 2014<sup>15</sup>. This workshop session was used to discuss a subset of topics, including exploring local approaches to 'value' and 'value creation'. The workshop also provided opportunity for informal discussions with local and central government officers and district energy specialists about the research, including rationale for case selection, key contacts, topics covered, and additional data sources.

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<sup>15</sup> This was one the practitioner networks that I attended and conducted informal observation (and also supported convening).

Open-ended discussion revealed that value is conceived along multiple dimensions. Value attributed to carbon and energy savings, and housing upgrades which reduced costs of management (e.g. through fewer voids) was thought to be measurable in financial terms and could be incorporated into a business model. The value of reducing fuel poverty, or improving community benefit, political capital and local energy resilience was noted to be harder to monetise and capture in a business model. For example, although fuel poverty reduction *per se* was easier to identify as a source of value, the associated health benefits and reduction in household debts (and therefore local economic benefit and social prosperity) were deemed to be harder to capture.

The political make-up of Councils was also regarded by officers as significant in driving and justifying energy initiatives, and in the relative emphasis on values such as economic development or fuel poverty reduction. Emphasis may shift from carbon savings priority to fuel poverty in response to changes in the political party/parties in control. Officers seemed to structure local value creation in three-parts: 'how do we make the case for "x" project?'; 'how do we defend the project and project viability?'; and 'how do we communicate the project as a valuable enterprise for the local authority to invest in, either in staff resources, financial investment, or both?' The depth and nuance of discussion at the workshop revealed that analysis of value-making in local authority energy is a topic worthy of investigating further and has relevance to practitioners.

This workshop helped identify which of the data collection instruments would suit gathering data for my investigation. Discussion made clear it would be hard to capture meaningful data about 'valuation practices' via an extension to the LEUKES questionnaire. This was confirmed by a workshop activity (I designed) where attendees identified which kinds of topics they thought could be explored via a questionnaire, and which would be more suited to an

interview. Officers reported that providing basic information about both a project (such as project stage and capital expenditure costs) and local energy strategy in a questionnaire would be relatively straightforward. They thought that process questions, including about how and why a project came about, its development through council decision making, and assembly of the business case, would need to be discussed in an interview. In part this was because under current local energy governance, projects had no predictable trajectory and emerged from different parts of the council. Officers thus emphasised there was more to tell about the subtleties of valuation in local energy practice than could be captured purely in a questionnaire.

Following this feedback, I therefore prioritised extending the LEUKES interview as my primary data collection tool. This involved including questions about valuation practices in local energy projects covering discussion of Best Value, the business case and public procurement. This was supplemented by amending the LEUKES questionnaire to gather additional data on: financing and ownership; the impact of public procurement rules; whether projects generated income or savings that released pressure on council budgets; and if projects had either stalled and/or been abandoned in recent years<sup>16</sup>.

### ***Piloting interviews***

The interview was then piloted with four local authority officers and one district energy practitioner in Spring 2015. Pilot interviews were used to develop responsiveness to interviewing situations and determine possible practical difficulties (Rubin & Rubin, 2005; van Teijlingen & Hundley, 2001). Practically, piloting helped to clarify that the time suggested for completing interviews was correct and check whether participants were willing and able to give up their time.

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<sup>16</sup> See Appendix V for the list of questions drawn from the LEUKES questionnaire which I used in my analysis.



It was important to ensure the interview schedule generated useful data. In particular, piloting proved very useful in clarifying terminology used. It was especially beneficial to hear the language local authority officers use and are familiar with. Pilot interviews also identified that officers might not be able to discuss each valuation framework for the main project selected, for instance because they hadn't been involved the whole way through, or the project was at an early stage. However, piloting revealed interviewees would be able to discuss this in relation to other projects which were also being developed. The interview schedule was therefore designed to provide the necessary flexibility to accommodate this.

Piloting also helped verify the suitability of these data collection methods. For instance, piloting confirmed that alternative qualitative data collection methods, such as ethnography, were not feasible given energy project development timelines. It generally took at least one year for most project development, but for larger scale projects this stretched over several years. Methods such as ethnography would have created a more partial dataset in terms of the trajectory of a project and the types of projects I could incorporate. I would have also had to focus on only one or two local authority cases, which would have been detrimental to providing an account of how local authorities value energy projects, in general terms. Limitations of the chosen approach are discussed in Section 4.5.

### **Interviewing local authority officers**

Primary data collection involved interviewing local authority officers, exploring actual value-making practices within developing energy projects. Interview data were used to analyse how each framework operated within negotiations about projects, and how each shaped the terms of project development. This is an important step because of the expectation that local authority officers are likely to be finitist 'users' (Barnes, 1995), who bring a degree of

interpretative flexibility to negotiating these frameworks in ways that are not envisaged by the guidelines reviewed.

Interview data provide a route into local authority officers accounts of these processes. Interviewing lends itself to the generation of data about how individuals construct social worlds (Mason, 2002) and interviewing offers a route into the “meanings people attribute to their experiences and social worlds” (Miller & Glassner, 2011, p. 133). Interviews are suited to exploring local authority officer accounts of the activities they go through in project development, how each valuation framework is involved in progressing projects through internal decision making process, when and how they are recruited, and what outcomes they shape.

Conducting interviews requires establishing a trusting environment with participants (Rubin & Rubin, 2005). Creating mutual respect within interviews involves listening to interviewees, communicating questions using accessible language and style, and using eye contact in face-to-face interviews. Interviewees should feel they have had an opportunity to discuss their professional history and identity, co-creating the data within interviews, rather than viewing interviewees as the ‘vessel-of-answers’ (Holstein & Gubrium, 2011). Some participants specifically thanked me for taking the time to listen to them, highlighting that our interview meeting provided chance to reflect on the pressures of working in local government at the time. This reinforces that local authority officers have been working under considerable pressure, with few opportunities to either ‘take stock’ of the situation, or have their views heard. On balance I conclude that our interaction provided a useful space for interviewees to explore these tensions and did not aggravate the situation.

### ***The interview schedule***

I treated interviews as ‘structured conversations’ with questions asked in a conversational style that generate rich qualitative material (Rubin & Rubin, 2005). A semi-structured interview schedule allowed flexibility to tailor each

interview according to the direction of individual interviews within the bounds of seven pre-defined topics (see Appendix IV). Topics were devised to enable questions relevant to both the wider LEUKES research and my PhD's focus, particularly: how the council defines the benefits of local energy initiatives and the approach to achieving 'Best Value' and value for money in justifying council activities; use of a business case within council decision making; and the procurement process.

The broader interview schedule covered: the interviewee's role and background; objectives within the approach to energy and carbon management; the benefits of local energy, value for money and justifying resources for energy; location of the project with council structures, support and reporting; outcomes, achievements and challenges over the project lifetime; project ownership, business model and financing; and policy changes to support delivering an energy strategy.

Aspects of the wider interview are drawn on to contextualise responses to value-making in local energy, particularly responses concerning project ownership, business model and financing; internal support for the project; reporting about the project; and challenges experienced over the course of the project lifetime. Interviews were expected to vary according to matters such as the ease of conversation (Holstein & Gubruim, 2011), but also depending on factors such as the role and specialism of each interviewee, the focus on energy within each local authority, and the stage of project development.

The schedule was prepared and emailed to participants a week in advance (see Appendix IV). Across the 40 local authorities, I conducted 41 interviews: 25 were face-to-face and 16 were completed by telephone. Two face-to-face

interviews (Derby<sup>17</sup> and Fife) were conducted at the University of Edinburgh because of the availability of the interviewees who were travelling through, one took place in a café nearby council offices; the others were all at council offices.

### ***Interviewees***

In total 49 local authority officers were interviewed: 35 were with the lead respondent, and 6 were joint interviews with the lead respondent and one or two other colleagues. This reflected the specialisms of colleagues and their involvement in local energy. In one case (Fife), two separate face-to-face interviews were completed, again reflecting interviewees' specialisms and availability to participate. Interviewees were based in various council departments: energy services, sustainability, economic development, planning, capital investment and finance. This breadth of experience from across the council organisation provides a rich set of accounts for analysing value-making.

I also conducted an interview with a representative of a Welsh public sector intermediary agency. This organisation assisted Welsh local authorities in developing energy programmes on their own estates. The purpose of including this additional interview was to understand more about how their support helped to 'unlock' energy project business case development among Welsh local authorities.

Face-to-face interviews lasted around 90 minutes; telephone interviews generally lasted 60 minutes. Two interviews (Islington and Warrington) included a site visit to the relevant energy project. All interviews were recorded and transcribed verbatim. One interviewee requested a copy of their interview transcript. All participants were also contacted after the

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<sup>17</sup> This interview was also conducted with a colleague.

interview thanking them for their contribution and requesting any final documentary material.

Interviews took place between December 2015 and July 2016 (following pilot interviews in Spring 2015). Data collection for each local authority case took between three weeks and seven months to complete. This reflected the time taken to organise participation through multiple emails and phone calls, and the availability of participants.

### **Local authority documents**

Documents underpinning formal council decisions, procurement specifications, and business case development were also gathered. These documents form an important element of the body of evidence informing decisions that shape the eventual scale, organisation and governance of projects.

I used these documents in analysing the value of the energy projects and exploring each framework in operation. For example, reports submitted to council decision bodies (such as Council Executive – see Appendix II) include sections about the ‘Implications’ arising from the council activity being reviewed. Prior to submission different departments indicate that the contents of the report (i.e. the energy project) has a base of support from relevant areas of the council. A consideration of Best Value was *sometimes* incorporated within this. These documents also tend to outline the core rationale for proceeding with a project. Business case documents include important assessments about the value of projects along multiple dimensions, but as Chapter 8 shows they vary widely in their construction and use. It was hence important to establish whether a ‘business case’ document was developed, and to review their contents where they existed. Public procurement specifications are online documents that contain important information about how the council assess value in the price-to-

quality ratio and defines each indicator. Collecting this documentary data was thus an important step in forming an understanding about how these frameworks are drawn into value-making processes.

Gathering business case documents was managed via the LEUKES online questionnaire which asked, where applicable, for copies of documents<sup>18</sup>. The questionnaire provided the option to directly upload these or to trigger a request via an automated email. Where documents were not provided via the online questionnaire, I asked for them at the end of the interview. Copies of documents were provided where officers had access to them. As Chapter 8 explores in more detail, not all projects had a specific business case document.

Further documentary sources were obtained directly from council websites, especially the documents underpinning formal council decisions which are public record and available to download. Sometimes certain confidential material is not included in the public document packs. This can mean the business case is not always included in full<sup>19</sup>. Some interviewees however were willing to share unpublished financial case documents on a confidential basis. Data from documents provided in confidence are not reported within this thesis, but I reviewed them to inform the analysis in Chapter 8.

I also viewed public procurement tender advertisements which are available online at sites, including:

- Tenders Electronic Daily (TED) the EU procurement portal
- Contracts Finder (England)
- Public Contracts Scotland
- Sell2Wales
- eTendersNI

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<sup>18</sup> The LEUKES research concerned a wider sets of documents than the scope of my thesis investigation.

<sup>19</sup> The Local Government Act 1972 allows councils to remove confidential or exempt information from documents of public record.

## **4.5 Limitations**

Research findings from case study and qualitative interview data can be difficult to replicate, having been influenced by context and time specific factors (Blaikie, 2010). According to Flyvbjerg (2006), one of the main criticisms directed at case studies is that they contain a 'bias toward verification', where the method itself facilitates a conforming to the researcher's world view and preconceived expectations. Considering my own position, a theoretical bias toward observing 'economistic' valuations could manifest in my study.

Flyvbjerg however, notes that bias toward verification is actually a feature of all research, and each method has actions to manage it. The case study method provides a closeness to the object of study that helps to manage bias (Flyvbjerg, 2006, p. 235). This means there is an ongoing process of testing out views, and continuing questioning of my interpretation of the data.

Considering plausible rival explanations is a key tool to help this testing of views and interpretation. Furthermore, cross-case analysis is also likely to produce 'credible results' (Yin, 2014), because the researcher is less likely to be able to exert given biases across multiple cases. In reviewing options for summarising and generalising, I also draw on Bechhofer and Paterson (2000, p. 40) who advise: assessing whether the research observations are representative; reflecting on the theoretical assumptions of the research; other existing research; and, the researcher's own judgement.

### **Respondents**

Case study evidence is also derived from those local authority officers willing to participate. From the initial target sample there was a high recruitment success rate of almost 80% (40 of 51 local authorities approached). This suggests considerable willingness to participate and minimal impact on the validity of data.

The data also rely on respondents' accuracy and openness, and their ability to discuss both energy projects and the council's broader approach to energy. Partial data of this kind is nevertheless considered a feature of empirical research (Benney & Hughes, 1984; Blaikie, 2010; Mason, 2002). Techniques used to minimise these limitations include the multi-method approach, and triangulating data sources and types which helps build a coherent picture across the sources of evidence. Yin (2018) suggests approaching the data with the same question. The use of multiple-case studies rather than depending on a single or small number also prevents over-reliance on any single individual. Where required, possible and feasible, I also interviewed multiple officers within a local authority to cover the necessary range of topics. This, coupled with the piloting approach described in Section 4.4, minimised the potential for gaps in interview data.

## **4.6 Ethical considerations**

In developing the research design, ethical considerations were reviewed including, participation and confidentiality, consent, data storage, and potential for risk or harm arising from the study.

Participation in the research was voluntary and respondents had the right to withdraw at any time or to refuse to participate (in line with good practice for social research, Creswell, 2013; Ryan, 2011). It was emphasised that the Local Authorities taking part would be named in project reporting (such as this thesis), but individuals would not be identified unless otherwise agreed on a case-by-case basis. All participants names are concealed and pseudonyms are used throughout. In instances where commercially or otherwise sensitive information was included, the interviewee pseudonym was omitted and the local authority was substituted with a code<sup>20</sup>.

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<sup>20</sup> Sensitive data was reported on three occasions across Chapters 5-9 and a code was used in these instances.



In gaining consent for participation in the LEUKES project, I explained that I was a researcher on the project and also completing a part-time PhD in which I was using a sub-set of the data for my thesis. Participation, confidentiality and consent were discussed and documented in the following ways:

- During recruitment of contributors, a Project Overview (Appendix VI) was provided by email that explained information about participation, confidentiality, use of data provided and people with access to the data. Questions were also fielded during the initial telephone call including the type and level of participation involved.
- Prior to data collection, a Detailed Information document (Appendix VII) was provided by email to lead contacts reinforcing participation and confidentiality; providing further detail about the specific data being gathered, and how; and, explaining data storage and access.
- Before starting the online questionnaire, respondents viewed a statement explaining confidentiality and participation including how to withdraw (this was to close the internet browser and inform me by email).
- Before the interview, participants were provided with a personalised Interview Schedule (Appendix IV) which explained that I wished to record and transcribe the interview. This also detailed that data would be stored in accordance with the Data Protection Act 1998 and the data storage statement provided in the Detailed Information document. I also directly asked for consent to record at the beginning of each interview. A copy of the transcript was offered to all interviewees; one requested a copy, and was provided with it. During interview I also explained that interviewees were welcome to identify when specific aspects of the discussion were in confidence (such as commercial sensitivity) and not to be attributed to their local authority.
- Before publishing the findings (e.g. Webb et al., 2017) all participants were asked for feedback, including the opportunity to anonymise the council where quotes were used. In every instance where quotes were attributed to a council, participants confirmed they consented to this. We provided a copy of our research report to everyone who participated and made it available online via a permanent URL: <https://heatandthecity.org.uk/resource/local-authority-engagement-in-uk-energy-systems-highlights-from-early-findings/>.
- Contact details were routinely provided so that respondents could easily get in touch with me if they had questions.

Data handling and protection followed the terms of the Data Protection Act 1998 (note data were generated in 2015 – 2016, prior to GDPR), and University of Edinburgh policies. This included secure storage of online questionnaire responses on the Qualtrics-secure database, prior to transfer to password protected secure database at the University of Edinburgh. Audio recordings, interview transcripts and documents provided by interviewees were also safely stored on a password protected database at the University of Edinburgh. Audio recordings were permanently deleted from the handheld recording device used to record interviews. Appendix VIII contains the data use and storage statement that was provided to every participating local authority.

Finally, considering the potential for causing harm to researcher and/or participants, and risk-taking are important dimensions to ethically conducting social research (Ryen, 2011). Causing harm or distress from participation was deemed as negligible because participants were not asked to disclose personally sensitive information. Interviews focused on their professional, expert views on energy projects and strategies in their local authority. Equally the potential for reputational damage to the local authority organisation was not regarded as a significant issue given the commitment to confidentiality discussed above.

Conducting fieldwork was evaluated as low risk. Interviewing did not include travel to dangerous locations and interviews took place during normal weekday working hours, either over the telephone from University of Edinburgh premises, or in person on Council or University premises. In one case an interview took place in a café, this was deemed an open public space that posed no specific risks. Although travelling alone to interviews can pose risks, the LEUKES team were aware of my location and we remained in email and telephone contact. I also signed in at local authority offices on

arrival to scheduled meetings. It was therefore evaluated this posed no greater risk than other forms of UK travel for university business.

Prior to data gathering, I completed the Research and Research Ethics Committee Self-Audit Checklist for Level 1 Ethical Review and the following statement is made:

I confirm that I have carried out the School Ethics self-audit in relation to my proposed research project on the struggles in assembling value in local authority engagement with energy systems and that no reasonably foreseeable ethical risks have been identified.

## **4.7 Analysing the data**

There is no definitive way of analysing data in case study research. Instead, analysis is described as ‘custom-built’ (Creswell, 2013), with ‘few fixed formulas or cookbook recipes’ (Yin, 2018). There are however, a menu of possibilities and standard procedures, which provide useful guidance and some clear options for structuring analysis. For instance, the use of case notes, data reduction tools, and constructing tables to classify themes across cases (Creswell, 2013; Yin, 2014), all feed into my analysis.

It is agreed that case study analysis is an iterative process (Flyvbjerg, 2006; Yin, 2014). Creswell (2013, p. 182) describes this as a ‘data analysis spiral’ where “the researcher engages in the process of moving in analytic circles rather than using a fixed linear approach”. Moving between organising data, writing notes, describing cases, developing categories and so on, is thus an ongoing back and forth process.

### **The role of key concepts and research questions**

Theoretical concepts and research questions informed the structuring of data analysis. The goal was to connect theory and empirics: to operationalise interest in assembling value into a topic of investigation which could feasibly be analysed. Piloting and developing data collection instruments were key elements to this, but the role of concepts was also central to the analysis.

As Chapter 3 explained, concepts from the economic sociology of valuation drove research questions oriented to the co-creation of value. In turn, this pointed the focus of analysis toward documenting and exposing how value is assembled. Research questions drew the boundaries of analysis around the three valuation frameworks selected, and directed the analysis of these valuation frameworks toward: understanding how actors, structures and instruments came together in project development value-making activities; what trade-offs, contestations and struggles emerged in that process; and tracing what impact these had on local energy.

Practically, I translated theoretical concepts into analysis as follows. The concept of devices (Muniesa et al., 2007) was used to hone in on the valuation frameworks and consider them as constituent elements in value-making, rather than passive objects or instruments. I opted for the term 'valuation framework' because there were also valuation devices within each valuation framework. For example, there are specific calculations within the business case which I considered potential devices (such as financial calculations), and different types of procurement devices (such as framework agreements and the tender specification).

Detecting and analysing 'valuation practices' drew on argument of 'valuation as a social practice' that involves work and labour to perform (Helgesson & Muniesa, 2013; 2014). This guided me first toward activities in energy project development where assessments were being assembled; and second, as this work involves different sets of actors, toward the potential for different valuations involving the three valuation frameworks. This was complemented with the programme of governing argument that political power and control (Miller & Rose, 2008), is exercised through (bureaucratic and mundane) 'everyday work' of valuations in public organisations. This guided me toward tracing formal assessments and evaluations of energy projects. Furthermore,

I used Callon's (2007) notion of 'economics in the wild', to consider that in local authority energy (i.e. outside the application of formal economic science), these valuation practices could involve economising energy projects.

To operationalise that governing and economising processes are malleable and contested valuation practices, I applied first the finitism (Barnes, 1995) notion that rules concerning a valuation framework are always subject to interpretation; and second, the boundary object (Star, 2010) notion that valuation frameworks are open to interpretative flexibility. Importantly, this led me to consider users interpretations of the valuation frameworks, and how they were drawn on by different actors across the council. For example, this led me to analyse not only how the business case was constructed, but also how contrasting interpretations and decisions were made about it.

### **Data organisation and reduction**

I adopted four main elements to organising data: keeping a case book for each local authority, as a reference guide and site for notes; creating a central database for cross-case examination; developing a central library of interview excerpts; and, storing guidelines about each framework. (Secure storage is discussed in Section 4.6).

An electronic case folder for each local authority was created within which a single case book, and original copies of documents were stored. Documents provided by respondents (such as business cases) were kept in a separate folder to documents which I accessed from the internet (such as procurement specifications). The case book (in Microsoft Word) operated as an activity log for storing key information for the individual local authority case, and all of my typed notes for that case in a standard format<sup>21</sup>. This included updates pre-

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<sup>21</sup> The format included sub-headings: local authority name, key contact person and contact details, pre-phone call information, initial phone call, energy project selected, interview data, interview prep, interview notes, reflections on interview, things to follow up on, other.

and post- both the initial telephone call and subsequent interview, as well as further reflections and notes after reviewing documents and reading transcripts. Having notes in one place for each case allowed me to begin generating case descriptions. I also kept a paper folder for each case where I stored annotated copies of interview schedules and any other paperwork.

A central case study database (Microsoft Excel) including project type, business structure and project stage was used to keep an overview record and allow initial high level cross-case examination. Populating this initially drew from responses to the online questionnaire. Additional information was added iteratively, and captured data about each of the frameworks in a summarised form for that case. This included short summary notes for each framework from the case book, interview transcript and documents. This database was also used to store additional notes and actions, and to assign pseudonyms to individual respondents.

Interviews were transcribed verbatim and thematically analysed according to each valuation framework. Generally one or more computerised program is used to aid qualitative data reduction, though no single approach dominates (Blaikie, 2010, p. 210; Creswell, 2013, pp. 201-210; Yin, 2014). Whether a computer or paper based approach is taken, Creswell (2013, p. 201) explains the underlying process of qualitative analysis is the same, because “the researcher, not the computer program, does the coding and categorising”. I tested three approaches to aid organising and analysing interview data: first, qualitative computer software package NVivo; second, printed paper based coding of transcripts; and third, using Microsoft Word computer program. Because the LEUKES interviews covered ground beyond the scope of my thesis investigation, I found both NVivo and paper based coding less useful to my analysis. In particular, initially they took much longer to code compared to key word searching, reviewing the area of transcripts around (including

before and after key words appeared in the transcript), highlighting text and exporting<sup>22</sup>.

Therefore within the overall series of data reduction activities, I opted to create a central library of interview excerpts in a single Microsoft Word document. This process included first reading my case book notes, before scanning the whole transcript to get a sense of the overarching discussion. From this, key areas and specific points were highlighted, and initial codes developed. The central library of excerpts was organised by codes (rather than cases) and grouped them under overarching themes. Following the initial reading of transcripts, key terms were also used to search transcripts<sup>23</sup>. As the thematic analysis developed iteratively, I returned to transcripts and notes. This meant adding to the case book, database and central library on multiple occasions.

The legislation and guidelines about each framework were downloaded from the internet and stored in folders. The content of each document was considered as the 'resource' (Prior, 2011) and I had specific interest in how this content could have meaning for local authority users; in particular, how this content might come into 'being' (Prior, 2008). This meant that analysis focused on the descriptions that defined what each framework was, and the instructions about how to construct, apply, and/or use them. For instance, in the Best Value Framework legislation and accompanying statutory guidance, I was interested in whether there was a hierarchy or prioritisation of certain forms of value over others. This content analysis was used to develop an analytical description of how each valuation framework was conceived of within guidelines.

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<sup>22</sup> It is possible that had I continued with NVivo, it would have become more useful as the analysis progressed.

<sup>23</sup> These included: value, benefit, objective, procurement, business case, business model, council decision, document, report, cabinet, committee, executive, finance, money.

## **Developing themes**

Description is one of the main forms of data analysis in case study research (Creswell, 2013; Flyvbjerg, 2006; Yin, 2014). Descriptive analysis helps to identify the main themes arising from each case, for instance by examining similarities and differences. In multiple-case studies, themes are analysed comparatively across the cases. This cross-case synthesis is considered by Yin (2014) as the most important aspect of multiple-case study research.

Description thus played a central role in identifying the dominant and peripheral elements of the analytic narrative emerging about valuation practices. For example, the narrowing toward short-term financial planning within decision making of the business case was a strong theme in the struggle in assembling value examined in Chapter 8. Within this there were clear and marked contestations about how individual ‘devices’ were pulled into this process, and valuation practices across the cases illustrated different strategies in response. The cross-case synthesis is hence aided by zeroing in through description, and then standing back to generate the overarching picture.

Yin (2014) suggests that generating contrasting categories in tables, and adding evidence into the different categories is a helpful tool in this multiple-case analysis process. For example, this is one way of juxtaposing data from multiple interviews about tensions and trade-offs between competing valuations, and impact in project development. I used this method of analysis to categorise different aspects of data for each valuation framework. This was then revised over rounds of classifying cases into categories, and revising categories and classifications. One example of the outcome of this process is my development in Chapter 9 of a typology of the ‘intelligent buyer’ in local energy procurement.



## **Writing up the analysis**

Presenting the analysis aimed to convey cross-case synthesis. As such I chose not to make extensive use of case write-ups or vignettes (which would have been impractical given my use of 40 multiple-case studies). Instead, Chapter 5 adopts a mainly descriptive approach in providing an overview of the cases. In the remaining empirical chapters, individual cases serve as exemplars of cross-case themes. Given my focus on cross-case synthesis of valuation practices concerning the three frameworks, I adopted high level organisation around the frameworks. This informed choices about how to display the analysis across Chapters 5–9:

Analysis in Chapter 5 sketches energy within the local authority organisation, introduces the energy projects, and suggests likely areas of tension in energy project valuation practices. Interview and online questionnaire data are visualised using tables, figures and quotes.

Analysis in Chapter 6 sets out the perspective from legislation and government guidance on each valuation framework, and how they are imagined to shape valuation practices. Content analysis is presented using excerpts.

Analysis in Chapters 7–9 take each valuation framework in turn, teasing out the valuation practices involved in negotiating and navigating each framework. Interview data most powerfully conveyed tensions in valuations, and hence overall I prioritised this in writing up each of these chapters, relative to documentary analysis and the online questionnaire. Interview and documentary analysis are visualised using quotes and tables; in the discussion sections, I also draw on findings from the questionnaire to consider the significance of the analysis presented. Different cases also fed into each chapter, as appropriate to the key narrative themes.

## **4.8 Summary**

This chapter has detailed the methodology and research design used to investigate valuation practices in local authority energy. In summary, my approach responds to the need for qualitative social science investigation into local authority energy initiatives, with a specific focus on valuation practices. Informed by economisation, valuation and governing concepts, my focus is on *how* the three valuation frameworks selected structure the development of local energy.

Given how little is known about actual valuation practices, I have gathered and analysed data about both the intended operation of each valuation framework, and what happens in practice. I use the strategic sample of forty case studies to build understandings of valuation practices beyond single, or a small number of comparative, case studies. This original data gathering and analysis contributes new knowledge to social studies of energy.

The empirical chapters commence with an overview of the local authority case studies.



## **5 Overview of the Local Authority Cases**

### **5.1 Introduction**

This chapter provides an overview of the Local Authority case studies examined in this thesis. My aim here is two-fold. First, I seek to further build the argument about the importance of the governance context within which valuation practices for local energy projects take place. In particular, focussing on how energy is situated within the organisation. Second, I use this chapter to familiarise the reader with the breadth of energy projects and business structures underpinning the analysis of value-making in subsequent chapters. For example, long-term concession contracts for district energy and energy performance contracting for corporate estate retrofit are both associated with specific forms of public procurement valuations.

The remainder of this Introduction details where the case study local authorities were located. Section 5.2 discusses the marginal status of energy within the local authority, relative to statutory services. Section 5.3 introduces the different energy projects and the business structures adopted; this information is essential for understanding the empirical material discussed in Chapters 7–9. Section 5.4 discusses the richness of the case sample for analysing valuation practices across a range of local energy projects and ownership and contractual models adopted.

The 40 selected cases were a strategic sample that took into account results of mapping engagement across the whole UK local authority population (Tingey & Webb, 2020a; Webb et al., 2017). Those results showed differing levels of local authority energy activity across UK countries, English regions and local government structure (see Chapter 2). As a result, my sample of English cases used regional clustering (principally Yorkshire and the Humber, and Greater London), and included a larger number of metropolitan

district boroughs. There were also proportionally more Scottish and Welsh local authorities. Figure 5.1 shows the location of the case study authorities.

Figure 5.1 Location of case study local authorities



Note: Larger dot represents all London case study authorities.

## 5.2 Locating energy within the organisation

Energy and climate change have a relatively marginal status within the local authority organisation, with statutory services given priority at senior levels:

[In] local government climate change is not a priority, carbon reduction is not a priority because... we're too busy emptying the bins and keeping the streets clean and trying to save children at risk, and keep the street lights on and that. And it's not a statutory requirement, it's not high up on the list.

Gary, City of Wolverhampton Council

Conversely, with local energy, *"Nobody is holding us to account at all. And ultimately it doesn't matter how interested you are in it, if you're not being held to account it's going to go down your priority list, sadly"* (Louise, Warrington). Critically, the lack of accountability for energy meant there were no established or consistent routes to value-making. Energy was not well understood, or routinely prioritised:

what you find with energy is it's not an item for the Director's table, and it's full of... people that nobody listens to.

Mark, Peterborough City Council

who has ownership of energy in a local authority? [...] There's a bill of about 10-12 million pounds per annum, somebody should have responsibility for that at the highest level [...] but] there is none of that accountability for things like this in local government.

Trudy, City of Edinburgh Council

In the absence of a statutory mandate, the value of developing local energy projects was uncertain. Thus, the valuation practices examined in this thesis surround something that has peripheral status. As a result, it is likely that valuation practices will require recruiting and enrolling other actors from across the organisation, who may not automatically support energy project development.

## **Temporary policy measures offered some routes to value-making**

Routes to senior management and the corporate agenda were however temporarily secured through related policy requirements. Two examples noted by officers were the Carbon Reduction Commitment Energy Efficiency Scheme (CRC) (UK wide) and National Indicators (England). The CRC was established in 2010 and aimed to stimulate investment in energy saving measures in high energy users (public and private sector). Officers could use this to justify investment in energy projects that reduced the cost to the council of their CRC liability. As Hannah (Bath) explained, *“that was really compelling for a while, we’d got to meet the Carbon Reduction Commitment, we’d got to do it.”* CRC requirements were reduced over time meaning fewer local authorities qualified<sup>24</sup>, and was subsequently closed following incorporation into the Climate Change Levy (Environment Agency, 2019).

English National Indicators (NIs) were a local government performance framework of nearly 200 indicators set by central government. These were in place between 2008–2010, and included emission reductions (Dixon & Wilson, 2014; Friends of the Earth, 2011). However, NIs were abolished by the Conservative-Liberal Democrat Government in 2010 under its new ‘localism’ agenda (Lowndes & Pratchett, 2012). English local authority officers interviewed (including in Bath, Calderdale, Derby and Leicester) had a shared perspective on aligning energy and climate change initiatives around the NIs for emissions reduction and climate adaptation<sup>25</sup>. Hannah (Bath) emphasised that these NIs made it easy to make the case to senior management about investing in carbon saving projects. John (Derby) elaborated further, noting that because NIs linked energy projects into the Council’s Corporate Plan: *“[The] national indicator [...] gave you... metrics*

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<sup>24</sup> Around 45% of local authorities initially qualified, but this went down to around a third by 2015-16 (Tingey & Webb, 2020a).

<sup>25</sup> Three National Indicators (NIs) measured progress in relation to climate change: NI85 council estate emissions, NI86 for area-based emissions, and NI188 for adaptation.

*against what you're doing and you've got number crunching and it has to be fed into your corporate plan, you know... it helps you."* Policies such as these hence created a window of opportunity that enabled energy projects to be made valuable *within* the core functions of the council. Conversely, optional, or discretionary energy projects required alternative valuations.

Removal of these policy tools further weakened the status of local energy within local government. Energy fell back down the priority list of senior managers. As Rob (Calderdale) stated, *"They used to have a national indicator for CO<sub>2</sub> emissions... and they've all been dropped. If no one's asking the senior managers these questions, it's not on their radar as a hot issue for the moment."* Combined with lack of a direct statutory mandate, this inconsistent policy support means energy is unlikely to be routinely prioritised to the extent required to allow larger scale long-term energy projects, which may take years to develop.

### **A mix of departmental leads and decision making channels**

Reflecting the lack of a mandate for local energy, there was no consistent 'home' for local energy within the council organisational structure. Local energy was hosted across different departments and directorates, responded to different departmental priorities, and was coordinated under different approval groups. Correspondingly, the local stance on the value to be derived from energy projects was shaped by a mix of different actors and priorities across councils.

Environment and Corporate were the two service areas that officers most frequently identified as initiating projects, but also noted were Economic Development, Housing, Communities/Place, Planning, and Highways. The corporate estate and social housing were also the most frequently cited target groups prioritised in the council's approach to local energy<sup>26</sup>.

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<sup>26</sup> Officers were asked to select which user groups were prioritised in the council's approach to local



Nevertheless, officers commonly identified multiple areas of the council’s work which shaped the strategic approach to energy (Table 5.1).

Table 5.1 Areas of the Council that shape the approach to local energy

Multiple Choice question	Count
Corporate estate energy and/or carbon management	29
Fuel poverty	26
Climate change	25
Area/borough-wide energy and/or carbon plan	22
Economic development	18
Spatial planning	18
Waste management	11
Environmental services	6
Question response rate	34/40

Source: LEUKES (2017) questionnaire data.

Different approval groups were thus responsible for different projects, and at times, this made it unclear how to progress a project through internal decision making channels, *“it’s navigating all of [them]... and often you end up going up the wrong one and having to go back again to another one and so that takes a lot of our time really”* (Hannah, Bath). Nevertheless, when a project had the status of a ‘major project’ it tended to fall within the category of a ‘key decision’ and then typically progressed through either Council Executive or Committee (depending on which organisational model was being operated) and then Full Council.

However, drawing the boundary around what constituted a major project, and thus a key decision, was not clear cut. For instance, Chris (Leicester) emphasised that only projects over a certain value (in Leicester, around £1m) or with a higher political profile typically fell into category of a key decision. Still, it was difficult to define what constituted ‘political profile’ in an energy project, *“a project of a lesser value that has got a higher profile politically...”*

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energy. Corporate estate was identified as a high priority by 25 of 30 responses and social housing was a high priority for 18 of 28 responses. By contrast, user groups with lower priority included industry and industrial processing (13 of 22 responses) and transport passengers (6 of 15 responses).

*would [also] be taken because it would be seen as a major project. But it would be hard to define exactly what that might be”* (Chris, Leicester). Any energy project could thus in principle fall within the definition of a key decision, given energy is not a statutory responsibility, and therefore any allocation of resources could be determined as having a ‘political profile’. As this suggests, there was no clear picture across the cases about what constituted accountable decision making in energy projects.

Energy strategy and projects also shifted throughout the organisation. For example, in Dundee the approach to energy originally emerged from Housing. When the Council began developing a corporate approach to district heating, which was the basis for then developing a city-wide energy strategy, other actors became involved. The Sustainability and Climate Change Manager (located within the Office of the Chief Executive) took a co-lead role with Housing; Estate Management also became more involved at that point. This evolution in terms of the ownership of energy within the organisation suggests that valuation practices within a council may vary over time, as different actors become involved.

### **Variable levels of staff resourcing for energy projects**

With no core funding for energy as a service within local authority governance, staff resources varied widely, and were dependent on senior management commitment. Subsequent resource variability ranged from a single project officer to a team of over 20, but not all posts were permanent. Generally, but not exclusively, city unitary, metropolitan and London authorities had managed to assemble larger teams. Exceptions to this included Birmingham and Newcastle city councils, both major UK cities with few energy officers. There was also some temporary growth in teams; for instance in Bristol, Cambridgeshire, Manchester and Oxford, the councils had secured European funding to support a new energy team over a 3-4 year period (see Section 5.3). Although these were not permanent roles, the idea

was to retain some staff on a long-term basis after the initial grant funding ended.

There was however also downsizing or dissolution in other cases, such as in Leicester and Swansea. In Leicester the team had shrunk following a departmental restructure including into new job sharing roles. In Swansea the Sustainable Development team that led the community solar cooperative initiative (see Section 5.3) was subsequently disbanded. Another officer reported that although there had been some forward momentum in the council on energy and climate change, questions were raised by a previous Chief Executive about whether they should be involved in any non-statutory services at all. This officer described how this Chief Executive was *“against us... didn’t see why we needed a [climate change] team”* (Council Officer, LA\_18). This combined with a change in the service Director and resulted in the gradual downsizing of the team, *“it got really uncomfortable for the team. And... we started to be eroded, year on year”* (Council Officer, LA\_18). The pattern of staff resourcing was thus one of general uncertainty. Teams responsible for energy projects were particularly susceptible to only temporary organisational commitment. This is likely to shape the ability of project officers to influence value-making in the organisation. Institutional memory about the value of local energy is also likely to suffer under such precarity.

### **The hard-to-reach status: an ‘operational’ energy project**

The struggle to assemble value from energy was made apparent when officers reported that projects were prone to stalling and being abandoned. In the questionnaire, there were 28 officers who responded to this question. Most of them (22) said that energy projects had stalled in recent years, and 14 said projects had been permanently abandoned. Temporary stalling of projects was mostly attributed to issues connected with subsidy regime change (and policy changes), and financial issues including budgetary

pressures and cuts to funding. These issues were further illustrated during interviews. For example, Elizabeth (Greenwich) noted that budget pressures extended to the capital programme. In Greenwich they were trying to secure funding to complete integrated energy retrofit (external insulation, communal heating, double glazing) and housing upgrades (new kitchens, bathrooms etc) across the social housing estate. Elizabeth explained finding it difficult to secure finance from the Council's housing investment programme, *"the question is that with all of the pressure on the capital programme... it's going to be more challenging to bring about these large scale works."* Budgetary pressures such as these are further explored in Chapter 8.

Associated financial issues noted were staffing levels, building stock rationalisation and the financial climate not being supportive for investment in medium- to long-term initiatives. Fewer respondents noted issues including: internal organisational support; lack of technical energy knowledge; issues with obtaining planning consents; and legal costs.

Similar reasons were cited for permanently abandoning initiatives.

Respondents also said that grid constraints, building rationalisation and issues with commercial negotiations had been causal factors, but these were raised less frequently. One project was also abandoned because of public opposition to ground mounted solar PV. In this case (LA\_14), the council had tried to build a solar farm on council owned land that was opposed and finally abandoned at a cost of around £3 million. Partly due to concerns over the failure of the proposal, this council chose not to publicise the internal council estate work and instead focussed more on promoting their community and civic orientated energy work.

The uncertain status of local energy in the organisation meant energy projects thus emerged *ad hoc* where there was commitment to clean energy as a valuable component of core services, including having staff resourced to

work on project development and an opportunities to assemble the finance. As a consequence, there was no dependable trajectory for energy projects.

### **5.3 Local energy projects and business structures**

The energy projects discussed in subsequent chapters encompass a wide range of heat, electricity, energy efficiency and other energy provision and innovation projects. As Chapter 3 uncovered, previous sociological studies suggest that as a valuation device, the *business model* has no one specific definition or stable form (Doganova & Eyquem-Renault, 2009; Doganova & Muniesa, 2015). The term business structure is used here to describe the arrangement for managing the energy project. Business structures adopted were diverse, spanning in-house, energy performance contract models, municipally owned energy businesses, independent third sector organisations, and private sector-led companies. From the perspective of a valuation practice, assessing options for, and adoption of, a business structure (which involve different financing and procurement arrangements) are interconnected and mutually reinforce each other; this is explored in subsequent chapters.

Furthermore, the ownership arrangements under distinct business structures entail negotiating different public, third and private sector organisations within energy project valuation practices. Table 5.2 provides a full list of projects, identifying project stage and type, business structure, capital expenditure and the sources of funding used.

Table 5.2 Key features of the energy projects

Local Authority	Initiative	Stage ('15/16)	Type of initiative	Business structure	Capex <sup>1</sup>	Funding sources <sup>2</sup>
Aberdeen City Council	Aberdeen Heat & Power	Operational	District energy	Local Third Sector Business	£1-£5m (Seaton)	budgets; grants; private homeowners
Aberdeenshire Council	Schools Biomass Boilers	Operational	Corporate estate upgrades	Municipal In-house	-	-
Aberdeenshire Council	Aboyne Academy Biomass HN	Operational	Corporate estate upgrades	Municipal In-house	Under £1m	budgets; grants
Bath & North East Somerset Council	Bath & West Community Energy	Operational	Renewable electricity	Local Third Sector Business	£1-£5m	borrowing; third party equity
Birmingham City Council	Birmingham District Energy Company	Operational	District energy	Private Sector-led DE Concession Contract (SPV)	£5-10m	grants; commercial partner
Bridgend County Borough Council	Bridgend Town DH Network	Feasibility	District energy	Decision not made	Over £20m	grants; commercial partners; third party debt finance
Bristol City Council	Bristol Energy	Operational	Licensed energy supplier	Licensed energy supply company	-	-
Bristol City Council	Bristol Retrofitting – Innovative Technologies for Everyone	Build /construct.	District energy; Renewable electricity; Domestic retrofit	Municipal In-house	Over £20m	budgets; borrowing
Calderdale Council	LED Street Lighting	Feasibility	LED streetlighting	Municipal In-house	Over £20m	budgets; borrowing
Calderdale Council	Calderdale RE:FIT	Development	Corporate estate upgrades	Energy Performance Contract	-	-
Cambridge City Council	Abbey Pool Solar Thermal	Operational	Corporate estate upgrades	Municipal In-house	Under £1m	budgets
Cambridge City Council	Cambridge RE:FIT	Feasibility	Corporate estate upgrades	Energy Performance Contract	-	-
Cambridgeshire County Council	Mobilising Local Energy Investment	Build /construct.	Corporate estate upgrades; Renewable electricity	Energy Performance Contract	£15-20m	borrowing
City & County of Swansea	Swansea Community Energy	Development	Renewable electricity	Local Third Sector Business	Under £1m	third party equity
City & County of Swansea	Swansea HN Proposal	Feasibility	District energy	Decision not made	-	-
City of Cardiff Council	Radyr Weir Hydro Scheme	Build /construct.	Renewable electricity	Municipal In-house	£1-£5m	-
City of Cardiff Council	Cardiff RE:FIT	Development	Corporate estate upgrades	Energy Performance Contract	-	-
City of Wolverhampton Council	Optimising Regional Clusters of Smart Energy Networks	Feasibility	Smart grids	Pilot	Under £1m	grants; commercial partner
Derby City Council	Ram Energy	Development	Local energy tariff	White Label	-	-
Derby City Council	Derwent Hydroelectric Plant	Operational	Renewable electricity	Municipal In-house	£1-£5m	budgets; borrowing; grants

Local Authority	Initiative	Stage ('15/16)	Type of initiative	Business structure	Capex <sup>1</sup>	Funding sources <sup>2</sup>
Derry City & Strabane District Council	Foyle Arena Leisure Centre CHP	Operational	Corporate estate upgrades	Municipal In-house	Under £1m	budgets; grants
Dundee City Council	Dundee DH	Operational	Domestic retrofit	Municipal In-house	£15-20m	budgets; grants
Exeter City Council	Exeter Council Solar PV	Operational	Renewable electricity	Municipal In-house	£1-£5m	borrowing
Fife Council	Dunfermline DH Network	Operational	District energy	Municipal In-house	£1-£5m	grants
Gateshead Council	Gateshead Energy Company	Build /construct.	District energy	Municipal DE Company	£15-20m	budgets; borrowing
Glasgow City Council	Schools Solar Programme	Build /construct.	Renewable electricity	Municipal In-house	-	-
Glasgow City Council	Commonwealth Games Village DH	Operational	District energy	Municipal In-house	£5-10m	budgets; borrowing; grants; commercial partner
Greater Manchester Combined Authority	Nedo Smart Communities	Operational	Domestic retrofit	Demonstrator	Over £20m	commercial partner
Kingston upon Hull City Council	Hull RE:FIT	Build /construct.	Corporate estate upgrades	Energy Performance Contract	£1-£5m	budgets
Leeds City Council	Leeds DH Network	Procurement	District energy	Municipal In-house	Over £20m	borrowing; grants
Leicester City Council	Leicester District Energy Company	Operational	District energy	Private Sector-led DE Concession Contract (SPV)	£15-20m	grants; commercial partner
Leicester City Council	Leicester EPC	Development	Corporate estate upgrades	Energy Performance Contract	-	-
Leicester City Council	Corporate Estate Spend-to-Save Carbon Reduction	Operational	Corporate estate upgrades	Municipal In-house	Under £1m	budgets
Leicestershire County Council	Leicestershire RE:FIT	Operational	Corporate estate upgrades	Energy Performance Contract	£1-£5m	budgets
London Borough of Camden	Somers Town Energy	Operational	District energy	Municipal In-house	£1-£5m (Phase 1)	budgets; grants
London Borough of Enfield	Energetik	Build /construct.	District energy	Municipal DE Company	Over £20m	borrowing; grants
London Borough of Haringey	Low Carbon Technology Innovation Hub	Operational	Capacity building	Pilot	-	-
London Borough of Islington	Bunhill Energy Centre & HN	Operational	District energy	Municipal In-house	£1-£5m	grants
London Borough of Sutton	Sutton Decentralised Energy Network Ltd	Procurement	District energy	Municipal DE Company	£1-£5m	-
Manchester City Council	Civic Quarter HN	Procurement	District energy	Municipal DE Company	£10-15m	budgets; borrowing
Newcastle City Council	Re-Generate DE Delivery Partner & Phase 1	Procurement	District energy	Private Sector-led District Energy Concession Contract	£15-20m	borrowing; grants; commercial partner
Oxford City Council	OxFutures	Operational	Renewable electricity	Local Third Sector Business	£15-20m	third party equity; short term construction finance
Peterborough City Council	Peterborough EnPC	Operational	Corporate estate upgrades	Energy Performance Contract	£1-£5m	budgets; borrowing

Local Authority	Initiative	Stage ('15/16)	Type of initiative	Business structure	Capex <sup>1</sup>	Funding sources <sup>2</sup>
Plymouth City Council	Plymouth Energy Community	Operational	Renewable electricity	Local Third Sector Business	£5-10m	borrowing; grants; third party equity; third party debt
Reading Borough Council	Corporate Estate Spend-to-Save Carbon Reduction	Development	Corporate estate upgrades	Municipal In-house	Under £1m	-
Reading Borough Council	Winter Watch	Operational	Domestic retrofit	Municipal In-house	Under £1m	budgets
Royal Borough of Greenwich	Barnfield Estate Regeneration	Build /construct.	Domestic retrofit	Municipal In-house	£10-15m	budgets
Stirling Council	Urban Wind Turbines Proposal	Feasibility	Renewable electricity	decision not made	-	-
Stirling Council	Millhall Solar Thermal DH	Feasibility	District energy	decision not made	£15-20m	grants; city deal
The City of Edinburgh Council	Edinburgh RE:FIT	Procurement	Corporate estate upgrades	Energy Performance Contract	£1-£5m	budgets; grants
Warrington Borough Council	Solar PV Programme	Build /construct.	Renewable electricity	Municipal In-house	£5-10m	borrowing
Warrington Borough Council	LED street lighting	Development	LED streetlighting	Municipal In-house	Over £20m	borrowing
West Yorkshire Combined Authority	Leeds DH Network <sup>3</sup>	n/a	District energy	n/a	-	-

<sup>1</sup> range, actual or planned

<sup>2</sup> actual or planned

<sup>3</sup> This project is not reported in the rest of the chapter to avoid double counting (the Leeds HN was also examined from the perspective of West Yorkshire Combined Authority – as a supporting actor to Leeds City Council).

The majority of projects in this study – around two thirds – were either operational (24) or in the build/construction phase (9). The remaining third were in procurement (5), development (7), or feasibility or initial scoping stages (7). As Table 5.3 below shows, this meant the decision on the business structure had been made in most cases. My discussions with officers necessarily reflected the different stages projects were at. The ‘snapshot’ of each project therefore varied, and I return to this in Chapter 10.



Table 5.3 Energy project business structures adopted

Business structure	Example technologies	N projects
Municipal in-house	Biomass boilers, CHP, communal gas boilers, double glazing, external wall insulation, heat networks <sup>1</sup> , LED street lighting, small scale hydropower, solar thermal, solar PV, thermal storage	22
Energy Performance Contract	BEMS, biomass boilers, CHP, LED lighting, solar PV	9
Municipal District Energy Company	CHP, heat networks <sup>1</sup> , thermal storage	4
Local Third Sector Business	CHP, heat networks, small scale hydropower, solar PV	5
Private Sector-led District Energy Concession Contract	CHP, heat networks	3
Licensed energy supply co	n/a	1
White Label local energy tariff	n/a	1
Demonstrators and pilots	Heat pumps, smart grid simulation, range of near to market technologies e.g. roll out solar PV, sewerage heat extraction	3
Decision not yet made	Heat networks, urban wind turbines (feasibility)	4
Total		52

<sup>1</sup> In four heat network projects this included (actual or planned) heat offtake from energy from waste plant (Enfield, Leeds, Sutton), and/or use of landfill gas capture (Fife, Sutton).

### **Municipal in-house: 22 energy projects**

For the in-house council-led business structure the local authority internally retained full responsibility for the energy project. The largest proportion of projects were directly managed in-house and the majority of project types were represented in this group (Table 5.3). Energy projects covered the full range in terms of scale. For example Reading Council’s Winter Watch fuel poverty project was smaller scale. This project was concerned with energy vulnerability and provided emergency heating to approximately 200 residents per annum. Residents were supported with emergency heating repairs, access to boiler replacement, small insulation jobs, and income maximisation through benefit checks. Larger scale project (£20 million plus capital expenditure) examples include the whole street lighting replacement and LED upgrade project in Calderdale, and a new major district heating network in Leeds. This included connecting to an energy from waste facility and providing heating to around 2000 social housing residents; a second phase involved extending to the city centre (see Tingey & Webb, 2020b).

## **Energy performance contracts: 9 projects**

Energy Performance Contracting (EPC) is a distinctive model for retrofit on an estate-wide basis, based on a 'guaranteed savings' contract structure. Under an EPC, an energy services company is contracted by the local authority to install a variety of energy efficiency, building management systems, and sometimes renewable and low carbon energy generation (such as solar PV, biomass boilers and CHP). Each contract provides a specified level of guaranteed savings (energy or financial), usually no more than 20%: if the contractor failed to deliver they cover the shortfall, where savings from installed measures exceed the contract, they are split between the contractor and local authority (Tingey et al., *in preparation*).

The savings are intended to allow local authorities to pay for energy efficiency upgrades on a spend-to-save basis, where capital costs and other project costs (such as maintenance, monitoring and verification) are repaid through energy cost reductions and new income from renewable subsidy payments and/or grid export. The contract had pre-agreed terms, with some adaptability to local circumstances, such as: level of agreed saving; the level of supplier input into project design; maintenance contract options; and payback periods. Buildings tended to be packaged together initially by councils to avoid the risk of a contractor 'cherry picking' only the easiest upgrades, though selection of buildings was subject to review.

To reduce public procurement time and cost, local authorities commonly used an OJEU compliant framework agreement (see Chapter 6, Section 6.4) to appoint a contractor through a 'mini-competition' between pre-approved suppliers. This is explored in more detail in Chapter 9.

EPC projects in the case sample were diverse, ranging from upgrading of a small number (under 10) of corporate buildings such as in Hull and Edinburgh, through to Cambridgeshire County Council which used the

flexibility within the EPC to develop a project pipeline of £20 million. This was the Council's 'Milly' project, an Intelligent Energy Europe (IEE) Mobilising Local Energy Investment (MLEI) initiative,<sup>27</sup> which ran from 2012-2016. This included a large 12MW solar farm, and retrofit of 30 county council buildings, including 22 schools. Further to this, Cambridgeshire also made their EPC project available to neighbouring local authorities, by naming them as project sponsors when procuring the EPC contractor (see Chapter 9).

### **Municipal district energy company: 4 projects**

Municipal district energy companies were independent companies (limited by guarantee or shares) established, and wholly owned by the local authority, to build and operate district energy. This business structure aimed to provide long term coordination and continuity of district energy development, and a defined role for the council in shaping the remit and scope.

Under this business structure, councils set-up ownership of the energy assets differently. For example, Gateshead District Energy Company was responsible for billing customers (a mix of public, private and domestic with either heat and power, or heat only), but the Council retained ownership of the network and energy centre (which consisted of CHP and large thermal storage) assets on the balance sheet, and provided staff to run the business via a service level agreement. Conversely in Enfield, Energetik (the trading name of Lee Valley Heat Network Operating Company Ltd) had a two tier ownership structure with a holding company and an operating company. Several satellite networks were being developed, with the first becoming operational in 2017. The main network was scheduled at Meridian Water, a large urban redevelopment site (of more than 10,000 new homes) which has a long term build programme into the 2020s. The Meridian network intends to utilise heat from the new energy from waste plant at Edmonton Park (due to

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<sup>27</sup> This funding stream was used to support the teams in Cambridgeshire County Council and Oxford City Council; a large sister scheme 'Elena' run by the European Investment Bank supported projects examined in Bristol and Manchester (for elaboration see Tingey & Webb, 2020b).

be operational in 2025), via a heat supply agreement with the North London Waste Authority.

### **Local third sector business: 5 energy projects**

Independent third sector structures were developed for community owned renewables and district energy. The community owned renewables were energy cooperatives and social enterprises formed as Community Benefit Society (Bath, Plymouth and Swansea) and Industrial & Provident Society structures and Community Interest Company (Oxford), and included the use of subsidiary ownership structures for some renewable assets. For district energy, Aberdeen Heat and Power Ltd was established by the council as a not-for-profit company limited by guarantee: Aberdeen City Council is one of five members and thus does not have majority decision making power.

In Aberdeen, Plymouth, and Swansea, the local authority was instrumental in establishing these organisations; in Oxford and Bath the councils supported their establishment. Aberdeen Heat and Power was the oldest, having been established in 2002. It has developed district energy networks over time to serve multi-storey social housing blocks, sheltered accommodation and public buildings across the city.

Newer organisations were established in the 2010s but emerged with different trajectories. For example, Plymouth Council's co-operative agenda included establishing Plymouth Energy Community (PEC) as an independent community organisation. They provided grant and loan financing, and rooftops for solar PV across 30 buildings and a solar farm. Council staff were involved in day-to-day running of PEC through a service level agreement. PEC also offered an energy advice service, and access to a wall insulation and boiler replacement service. Conversely, in Oxford, the council partnered with the Oxford Low Carbon Hub as part of OxFutures (2012-2016), an EU funded IEE-MLEI project (the same used by Cambridgeshire in the EPC

section). This funded staff and development costs to deliver a pipeline of low carbon projects; grant conditions required projects met a combined capital investment value of £15 million. The Low Carbon Hub was ineligible to apply for IEE-MLEI funding and instead the City Council took the lead role. Solar PV was installed on a range of council (city and shire), commercial and domestic rooftops, Osney Lock hydropower scheme was established, and a small energy efficiency retrofit of 100 homes was completed.

### **Private sector-led district energy concession contract: 3 projects**

Long-term concession contracts were awarded to private sector companies who then had responsibility to finance, build, own and operate district energy. In these cases, the local authority had no direct responsibility for the district energy networks *per se*, and was instead the paying customer. In two projects a commercial Special Purpose Vehicle (SPV) was established, Birmingham District Energy Company Ltd and Leicester District Energy Company Ltd. In the SPV model, a new company limited by shares was established as a subsidiary of the private sector parent company.

In Newcastle a Joint Venture (JV) was being set-up to run the concession contract (being procured at time of data collection). In the JV, the council intended to have a partial ownership stake (and contribute financing) with some ongoing control and responsibility for the networks.

The duration of these concession contracts lasted for 25-40 years. The private sector partner recovered investment from long term guaranteed energy sales to the council and other customers including universities, hospitals and social housing tenants. Responsibility for upfront capital investment was allocated to the concession holder, although an initial financial contribution was part of contract terms. Both the SPV and JV limit financial risk to the parent company (and to the local authority in the JV).

Chapter 9 explores attempts to secure local value from energy delivered under this business structure.

### **Licensed energy supply company: 1 project**

Bristol Energy, owned by Bristol City Council began trading in 2015 as a fully licensed gas and electricity supply company serving around 80,000 customers across Britain.

### **White label local energy tariff: 1 project**

A white label is where the local authority established a local energy tariff without setting up a fully licensed energy supply company. The white label involves partnering with a licensed supplier who provides the back office functions and complies with licensed energy supply regulations. A local tariff is then offered to a specified area (i.e. Derbyshire) or group of people (such as social housing tenants). Derby City Council used this structure to establish Ram Energy, a local energy tariff that partnered with not-for-profit municipal energy supplier Robin Hood Energy Ltd (owned by Nottingham City Council).

### **Demonstrators and pilots: 3 energy projects**

Finally, the sample includes pilot and demonstrator projects of varied scale and focus. The council played different roles in each project, but all were reliant on external grant funding (InnovateUK in Wolverhampton), public sector funding rebates (Greater London Authority in Haringey), or project sponsor funding (Japanese R&D agency in Greater Manchester).

Nedo Smart Communities was a £20 million domestic energy efficiency and demand side response demonstrator in Greater Manchester Combined Authority. Around 600 households received air source heat pumps, which were installed alongside technologies to test aggregation and flexible shifting of demand. Small scale insulation upgrades were completed where needed to install the heat pumps. The project involved three housing providers (Northwards Housing, Six Towns Housing and Wigan and Leigh Housing)

and two Japanese heat pump manufacturers (Daikin and Hitachi) with investment from the Japanese R&D agency New Energy and Industrial Technology Development Organisation (NEDO).

Low Carbon Innovation Hub was a “*hands on ‘dating agency’*” (Ian, Haringey), piloted by Haringey council during 2015-16. The project tested out how to improve sourcing and uptake of low carbon energy technologies in construction and buildings, particularly among property developers and building owners (including local authorities and social landlords) within the local area. Local organisations were invited to join the Innovation Hub as potential buyers or demonstrators of new technologies. The project worked to bring this group together with technology developers or suppliers to facilitate partnerships for demonstration sites for near to market technologies.

Optimising Regional Clusters of Smart Energy Networks was an Innovate UK funded local smart grids pilot project. Wolverhampton City Council was a partner. The study explored management of electricity demand at substations in Wolverhampton to test the feasibility of distributed control of electricity networks, using network simulation and a prototype demand management algorithm. The longer-term aim was to develop a smart grid demonstration site enabling local demand management, storage, trading and distribution; a substation adjacent to a future site of 150 new homes was identified.

### **Financing the energy projects**

Through the questionnaire it was possible to gather estimated capital expenditure costs on 37 of the energy projects. This data provided a total estimated capital expenditure of around £356 million, with a significant range from £10,000 to £47m (median £4.6 million; mean £9.6 million). The largest (projected) capital expenditure in this data was for Bridgend’s town centre district energy network, which planned to serve around 10,000 domestic,

public and private sector buildings when fully built. However, the project was at feasibility stage when data were collected so this could change. The smallest capital expenditure was for Reading Council's Winter Watch fuel poverty initiative which provided emergency winter heating to vulnerable residents.

Projects over £10 million capex usually included heat network infrastructure, but also projects such as Calderdale's LED street lighting upgrade and the Greater Manchester's heat pump demonstrator in 600 homes. Projects under £5 million included local renewable electricity projects, some smaller heat networks and most Energy Performance Contracting improvements to corporate estates. This range of capital expenditure costs provides scope to explore whether valuation practices are shaped by the scale of the project. For example, negotiation of the business case could be dependent on the size of the project. Chapter 8 will consider how this interacts with how projects proceed through assembly and assessment of the business case.

Sources of finance were obtained for 35 projects. Table 6.2 notes the sources of finance where this data were available. Councils typically combined multiple sources of public funding across council budgets, public borrowing (such as low interest Public Works Loan Board (PWLB) and interest free Salix Finance) and grant funding. There were also third party contributions from member share offers in community owned renewables, and a non-UK research and development agency in the large scale heat pump demonstrator in Greater Manchester. Commercial partner contributions were included in projects such as the private sector-led district energy concession contracts (Birmingham, Leicester and Newcastle).

These different funding sources could shape energy project valuation practices. For example, councils could take different stances evaluating the use of public borrowing such as from the PWLB. Co-investing with members



in an energy cooperative could become implicated in concerns over State Aid. State Aid regulations (see e.g. Department for Business, Innovation and Skills, 2015), aim to prevent unfair advantage being given to certain 'market actors' through preferential treatment from public agencies (such as an interest rate on a loan that is lower than what is available in the market). Equally, projects which were mostly grant funded may be subjected to less formal evaluation of the business case, or conversely may be required to conform to funders requirements. Chapter 8 will explore how such factors impinge on valuation practices associated with the business case in more detail.

#### **5.4 Discussion: implications for value-making from local energy**

This chapter has set out the organisational context within which energy project valuations take place. I have emphasised the marginal status of energy relative to core council priorities. The chapter has illustrated that energy is poorly institutionalised within the local authority organisation as a whole; it is liable to slip down the corporate agenda. Varied departmental responsibilities, lack of consistent policy support, and unclear routes to senior management were key inter-related themes. Within this context, numerous energy projects were susceptible to never quite materialising. There was recycling and rework to get some projects back into active development. However, some were abandoned. This suggests that there are unlikely to be clear routes for value-making in local energy within local authorities. A particularly critical interpretation is that a lack of any central legitimacy means that energy has little-to-no value within the local authority.

This overarching picture however, makes the energy projects studied particularly interesting. Despite this organisational context, a diverse range of energy projects under a variety of innovative business structures have materialised. If energy projects do not routinely progress, how has the

struggle to assemble value been tackled and overcome in this diverse group of projects? What has allowed these projects to become valuable to the local authority?

Subsequent chapters take this forward. This overview of cases indicates that energy projects may have to be translated into standardised valuations which multiple actors across the council can interpret and support. It also suggests that the case for why resources should be allocated to energy is critical. Lack of consistent senior management support also hints that valuations may be contested by different actors across the council, who could perceive energy as either more or less relevant to their service area. The different ownership, contractual and procurement models involved invite building a broad picture of what happens to the energy project as it is put through established council valuations. The next chapter details the three valuation frameworks examined in this thesis. The contemporary programme of governing obliges local authorities to engage with these.



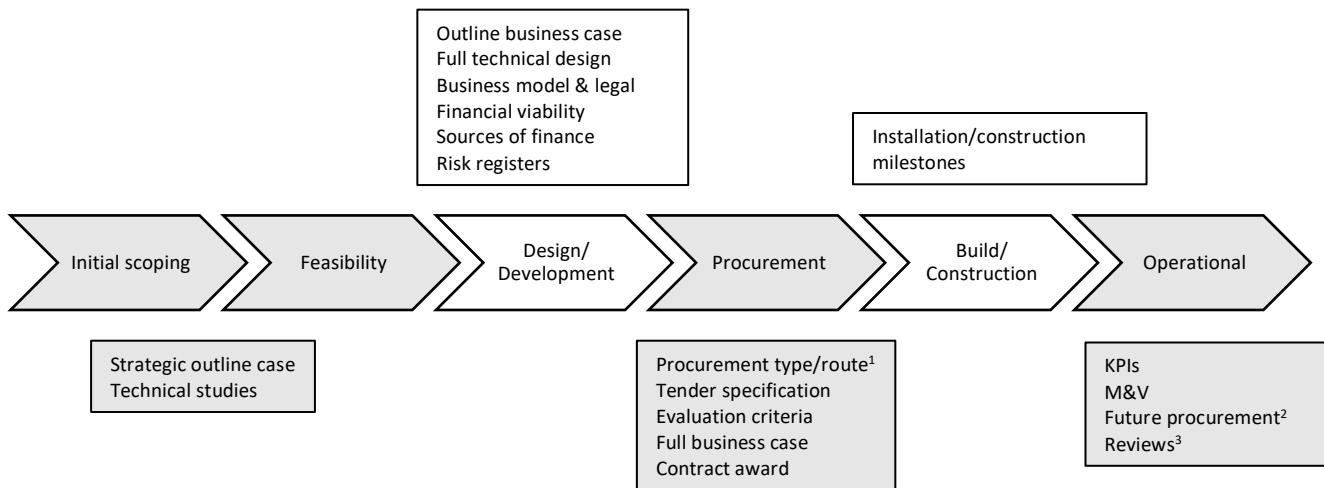
# **6 Valuation Frameworks that Shape Local Energy**

## **6.1 Introduction**

In Chapter 3 I advanced the proposition that how local authority energy projects are valued has consequences for local energy systems development. This claim directs my empirical focus toward the analysis of valuation frameworks implicated in assembling value from energy projects. This chapter introduces the three valuation frameworks selected for investigation within local authority value-making processes: the Best Value Framework, the Business Case model and Public Procurement. The remainder of the Introduction explains the rationale for selecting these three frameworks. Sections 6.2 – 6.4 introduce the key guidelines of each valuation framework. Section 6.5 discusses these as constituent components of a ‘valuation practice’ in energy project development.

Within energy project development, valuations are likely to emerge at various stages. Figure 6.1 provides a simplified illustration.

Figure 6.1 Valuations across energy project development: a simplified schema



<sup>1</sup> For example, for energy performance contracts using a multiple supplier procurement framework agreement this includes using an 'invitation to mini-competition', shortlisting from proposals, development of investment grade proposals for selected buildings, and entering into contract.

<sup>2</sup> For replacement kit etc.

<sup>3</sup> Of future options, refinancing, spin outs etc.

The three valuation frameworks selected for detailed examination emerged as prominent throughout my data. In different ways they each impinged on the eventual scale and form of local energy provision. Officers also interpreted them differently, which suggested there was merit in analysing them in more detail.

This rationale was combined with four insights from the conceptual framework introduced in Chapter 3 to guide my selection. First, the emphasis placed on the potential significance of the programme of governing for dimensions of valuation (Miller, 2008). This pointed attention toward externally imposed frameworks which formally attempt to structure and standardise decision processes within project development as part of the 'everyday' work (Miller & Power, 2013) of local government. Second, the likely importance of economising processes within valuations. This prioritised frameworks that were likely instances of 'economics in the wild' (Callon,

2007), and thus contained economic rationales. Third, the significance of 'obligatory passage points' (Law & Callon, 1994), directed focus to valuation frameworks involved at critical junctures within project development. In particular, I was interested in valuations that required officers to enrol and mobilise other actors within the council in order for the project to proceed. This pointed toward frameworks prior to operational stage. The notion of obligatory passage points within project development thus made a project's key performance indicators less central to this investigation. Fourth, the idea that valuation 'devices' are active in shaping the value of local energy implied that a variety of potential devices at different scales could shape the value of local energy. Therefore this led to an interest in devices ranging from individual calculations up to overarching governance embedded in legislation and codes of practice. To capture such diversity, devices representing this range were prioritised.

The three frameworks selected meet these criteria as follows. The Best Value Framework forms a core component of the core local authority governance as an overarching objective. Local authority performance in securing 'best value' is also audited. Best Value can be considered as a potential instance of 'economics in the wild' owing to its inclusion of both 'cost' and 'quality' concepts which spans service organisation, but also specifically in procurement (as explained in Section 6.2). Best Value thus has the potential to be implicated in the obligatory passage points of formal council decision making structures throughout project development stages; and, specifically in local energy procurement where local authorities assess tenders. Finally, the Best Value Framework represented a valuation device embedded in legislation and codes of practice which are intended to have been operationalised in the everyday work of councils, including energy project development.

The 'business case' is recommended by Government as the correct device for guiding decisions about capital investment projects like those discussed here (see Section 6.3). The business case is considered an instance of 'economics in the wild' because it includes techno-economic appraisal of the costs and benefits of projects, including construction of an economic and a financial assessment. It is one of the critical obligatory passage points in energy projects involving capital expenditure. Failure to converge on approving the business case has potential to result in a project stalling, being scaled down, re-designed, or even being shelved.

Public procurement is a highly economised valuation system governing significant areas of local authority revenue and capital budgets. It is designed to promote economic efficiency across the single market (as covered in Section 6.4). As a key obligatory passage point in energy project development, procurement involves the local authority configure an 'intelligent buyer' to issue tenders, evaluate bidders and negotiate contracts. As a valuation device, procurement is varied. It depends on the nature of an individual procurement process, spanning the minute detail of establishing a price-to-quality ratio within a specification, through to the overall type of procurement adopted.

The selected three valuation frameworks thus represent a variety of valuation devices at different scales and points in project development, whilst meeting all the essential criteria outlined above. The Best Value Framework is the overarching device, and both the business case, as a form of options appraisal, and public procurement can be used to demonstrate that the Best Value Framework has been applied in valuation practices (as explored in Chapter 7). Negotiating each valuation framework across project development is thus expected to have consequences for energy systems development. This is expected to materialise across the size and scale of

energy projects; their ownership and ongoing operation; and even potentially contributing to abandoning a local project all together.

The key rules, procedures and guidelines of each valuation framework are now introduced in turn. Attention is paid to how rules are expected to be applied and what levels and types of user discretion are anticipated. Table 6.1 summaries the key legislation, regulations and guidelines reviewed.



Table 6.1 Valuation framework guidelines

Type	Coverage	Author	Year	Title	Description
<b>The Best Value Framework</b>					
Legislation	England & Wales (until '09)	UK Parliament	1999	Local Government Act 1999 (as amended)	Legislation introducing the Best Value Framework in England & Wales.
	Scotland	Scottish Parliament	2003	Local Government in Scotland Act 2003	Legislation introducing the Best Value Framework in Scotland.
	Wales	National Assembly for Wales	2009	Local Government (Wales) Measure Act 2009	Legislation repealing Local Government Act 1999 in Wales, & renaming to 'Duty of Improvement'.
	N. Ireland	Northern Ireland Assembly	2002	Local Government (Best Value) Act (Northern Ireland) 2002	Legislation introducing the Best Value Framework in Northern Ireland.
2014			Local Government Act (Northern Ireland) 2014	Legislation repealing the 2002 Act, & renaming to a 'general duty of Improvement'.	
Statutory guidance	England	DCLG <sup>1</sup>	2011	Best Value Statutory Guidance	Issued by UK Gov. after repealing 2008 statutory guidance. Emphasis on procurement & social value.
		DCLG	2015	Revised Best Value Statutory Guidance	Relationship to Social Value Act 2012. Continued emphasis on procurement.
Statutory guidance	Scotland	Scottish Executive	2004	The Local Government in Scotland Act 2003: Best Value Guidance	Accompanying 2003 Act on the 'Duty of Best Value'.
	Wales	Welsh Gov.	2010	Wales Programme for Improvement: Part 1 Local Government Improvement	Accompanying 2009 Act on the 'general duty of Improvement' (the renaming of Best Value).
	N. Ireland	DoE LG Policy Division <sup>2</sup>	2015	Statutory guidance for operation of community planning: Local government circular 28/2015	Accompanying guidance to the 2014 Act on the community planning & 'duty of continuous Improvement'.
<b>Business Case Model</b>					
Guidance (continues overleaf)	UK	UK Treasury	2011	The Green Book	Main guidance for '5 case model' of business case. Focus on cost-benefit analysis. Primarily aimed at those constructing business case (i.e. not decision makers). Mandatory in central government departments; recommended guidance across public sector.
			2013	Assessing Business Cases 'A Short Plain English Guide'	Issued to decision makers on how to appraise a business case to deliver 'value for money'.
			2013	Checklist for Assessment of Business Cases	Short 'checklist' outlining key steps in constructing & assessing business case.
			2015	Public Sector Business Cases Using the Five Case Model: Green Book Supplementary Guidance on Delivering Public Value from Spending Proposals <sup>3</sup>	'Step-by-step' guide to the '5 case model'. Recommended to 'to all who are concerned with delivering best public value from capital spending decisions'.

Type	Coverage	Author	Year	Title	Description
	England	UK Treasury, Public Service Transformation Network, & New Economy (GMCA) <sup>5</sup>	2015	Valuing infrastructure spend: Supplementary guidance to the Green Book <sup>4</sup>	Business case evaluation for infrastructure. Includes concept of 'passive provision' for district heating networks.
	Scotland	SFT <sup>6</sup> on behalf of Scottish Gov.	2014	Supporting public service transformation: cost benefit analysis guidance for local partnerships	(Mandatory) guidance for LAs with devolved 'City Deal' budgets on cost-benefit analysis/business case.
			2011	Value for Money Assessment Guidance: Capital Programmes and Projects	(Mandatory) guidance for evaluating business cases for all capital programmes & projects by Scottish public bodies. UK Treasury <i>Green Book</i> is underlying guidance of this document, with additional input on value for money assessment.
<b>Public Procurement</b>					
Directive	EU member states	European Parliament, Council of the European Union	2004	Council directive 2004/18/EC on public works contracts, public supply contracts and public service contracts	EU Directive establishing public procurement regulations.
Summaries of EU Legislation		EUR-Lex, Publications Office of the European Union	2015	Rules on public works contracts, public supply contracts and public service contracts	Summary of the legal framework of the Council directive 2004/18/EC.
Regulation	England, Wales, N. Ireland	UK Parliament	2006	Public Contracts Regulations 2006	Statutory instrument transposing EU Directive 2004/18/EC.
	Scotland	Scottish Parliament	2006	Public Contracts (Scotland) Regulations 2006	Statutory instrument transposing EU Directive 2004/18/EC.

<sup>1</sup> UK Department for Communities & Local Government

<sup>2</sup> Northern Ireland Department of the Environment Local Government Policy Division

<sup>4,5</sup> Documents issued as part of a series of 'supplementary' guidance on business case evaluation.

<sup>5</sup> Greater Manchester Combined Authority

<sup>6</sup> Scottish Futures Trust

## 6.2 The Best Value Framework

As introduced in Chapter 2, the Best Value Framework was a major reform of local government in the late 1990s focussed on improving public services. It formally replaced the Compulsive Competitive Tendering procurement model of local government, which had stipulated that councils organise local services on the basis of the lowest cost supplier<sup>28</sup>. A 'duty of Best Value' was brought in which opposed to lowest cost, instead prioritised securing 'continuous improvement' in local services. This led to new programme of organisational service reviews and auditing to determine if there was a rationale for outsourcing. Outsourcing was only conducted when this review determined that there was a case for doing so. The evaluation of how services should be organised, and the need for public procurement (when it went ahead), was based on 'cost' and 'quality' criteria. Quality was defined by local authorities themselves in relation to social, environmental and/or economic values. Performance metrics were also used to audit evidence of 'continuous improvement' in local services.

There have been considerable changes to how Best Value is governed since its introduction. Statutory legislation and guidance in place at the time of data collection, as relevant to local energy projects,<sup>29</sup> is detailed below.

What has remained stable across the reforms and across the UK is that Best Value governs local authorities through statutory legislation concerned with 'continuous improvement' in operation of council public services. There are subtle differences across UK and devolved government approaches to Best Value, but 'economy', 'efficiency' and 'effectiveness' – i.e. the general concept of value for money in public spending (see Chapter 2, Section 2.3) –

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<sup>28</sup> Beyond some minimum standards, the quality of the contractor or service they would provide was not considered under Compulsive Competitive Tendering.

<sup>29</sup> For example, reform in 2010 in England repealed issues relating to workforce matters. Issues like these are not reviewed here.

all materialise. Consistency is also given to Best Value relating both to the exercise of *direct* council services – its statutory powers and duties – such as education or waste management, and to the activities which *support* these functions (i.e. corporate functions), like financial management, property disposal and public procurement. Options appraisal through business case evaluation and procurement strategies are both valuation practices through which councils demonstrate securing ‘best value’ in local public services. The Best Value Duty, therefore, is a legal obligation that in principle impacts on all council activities and decisions, including those in energy project development. All councils are expected to have internal scrutiny arrangements for organisational governance including securing best value.

### **Best Value legislation and guidance**

The ‘general duty of Best Value’ was defined in England, Wales and Northern Ireland as:

A best value authority must make arrangements to secure continuous improvement in the way in which its functions are exercised, having regard to a combination of economy, efficiency and effectiveness.

Local Government Act 1999, s3(1)

There was different legislation in Scotland, and as noted in Table 6.1, also since 2009 in Wales and since 2014 in Northern Ireland. In defining the general duty economy, efficiency and effectiveness were all maintained, and hence continued to bind the general duty closely to the public sector audit concept of value for money. In addition, there were a wider set of similar value concepts: equal opportunities and sustainable development in Scotland; and fairness, sustainability and innovation in Wales and Northern Ireland<sup>30</sup>. As much broader value concepts, potentially these are more inclusive. Whether they sufficiently diversify value away from the audit notion

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<sup>30</sup> Local Government in Scotland Act 2003, s1; Local Government (Wales) Measure Act 2009, s2; Local Government Act (Northern Ireland) 2014, s84.

of value for money is unclear at this stage. Examining guidance provides some preliminary answers.

In Scotland, Wales and Northern Ireland statutory guidance had been in place since 2004, 2010 and 2015 respectively (Department of the Environment, 2015; Scottish Executive, 2004; Welsh Government, 2010). These all emphasised a link to community planning and well-being. Scottish and Welsh guidance specifically noted contribution to 'sustainable development'; as one of 10 themes of Best Value in Scottish guidance, and one of a series of "fundamental principles" in Welsh guidance. Scottish guidance notes sustainable development as having a balanced view on economic, environmental and social well-being "both in the shorter and longer term" (Scottish Executive, 2004, p. 21). Best Value reviews in Scotland were also required to "take account of sustainability issues and assess the impact of policy proposals on sustainable development" (ibid). Sustainable development was also integrated into procurement. The "fundamental principles" introduced in Welsh guidance expanded the definition of 'continuous improvement':

This is no longer limited to economy, efficiency and effectiveness, but rather embraces the following: making progress towards an authority's strategic objectives (as set out in its community strategy); improving the quality of services; improving the availability of services; improving fairness by reducing inequality in accessing or benefiting from services, or improving the social wellbeing of citizens and communities; exercising functions in ways which contribute to sustainable development; improving the efficiency of services and functions; innovation and change which contributes to any of the above objectives.

*Wales Programme for Improvement*, Welsh Government, 2010, p. 6

English *Best Value Statutory Guidance* (UK Department for Communities and Local Government (DCLG), 2011) issued in 2011 similarly reinforces the general duty. The entire 2008 statutory guidance *Creating Strong, Safe and Prosperous Communities* (UK Government, 2008) was repealed. The 2011 guidance was much shorter (2 pages; whilst the previous guidance was 56 pages). In particular, the 2011 guidance placed emphasis on social value,

and gave further explanation of the interpretation of social value within Best Value. This made the explicit linking of social value as an “additional benefit” of public procurement:

Under the Duty of Best Value, therefore, authorities should consider overall value, including economic, environmental and social value, when reviewing service provision. As a concept, social value is about seeking to maximise the additional benefit that can be created by procuring or commissioning goods and services, above and beyond the benefit of merely the goods and services themselves.

*Best Value Statutory Guidance*, DCLG, 2011, paragraph 2

In 2015, further statutory guidance (DCLG, 2015) was issued. This further emphasised the importance of the Public Services (Social Value) Act 2012 in obligations to secure Best Value. The Social Value Act introduced a direct requirement for councils to pursue social value in procurement. Thus whilst guidance reaffirmed that ‘overall value’ should be considered under Best Value, reference to social value in relation to procurement was specifically reinforced.

Statutory guidance was thus relatively light touch in England at least compared to previous guidance and in the rest of UK: a few pages, with a particular emphasis on securing social value through procurement. In Scotland, Wales and Northern Ireland there was particular emphasis on a wider set of value concepts than social value, including sustainable development.

There was however, an alternative view presented from Best Value inspections in England. These were conducted at the request of the UK Secretary of State, who has powers to intervene in councils where there is evidence that they are failing in their Best Value Duty. At the time of data collection, Best Value inspections were taking place in Rotherham and Tower Hamlets about serious failings in council governance (note these were not case study authorities). Commentary from UK government (Ministry of Housing, Communities and Local Government (MHCLG), 2020) about these

inspections suggested a somewhat different meaning of the Best Value Duty. This argued that in practice the Best Value Duty:

...is generally taken to mean that authorities must deliver a balanced budget (Part 1 of the Local Government Finance Act 1992), provide statutory services (including adult social care and children's services) and secure value for money in spending decisions.

Ministry of Housing Communities and Local Government, 2020, p.13

In contrast to the formal guidance, this interpretation focussed much less on ideas about social value, well-being or sustainability; or the role of procurement. Instead it gave priority to value for money and prudent financial management in delivering statutory services. From the perspective of a valuation practice in local energy, this implies it is possible that 'best value' has distinct meanings to different officers and councillors involved in developing energy projects. It could align with the principles set out in statutory guidance, it could be more associated with the 'in practice' interpretation discussed above, it could involve a mix of both components, or it could be something else locally devised within a council.

The different legislation and guidance lend to considering the Best Value Framework as a device designed to structure organisational practices and decision making, rather than as a tool for directly defining the 'best' (environmental, economic and social) value. The multiple definitions are all broad ranging and likely to be open to interpretation. Within the bounds of 'improvement', local authorities are themselves responsible for defining what constitutes 'best value' in a given situation. There are also different definitions concerning what 'best value' *is* in practical terms in the operation of the statutory duty, and *how* to be a 'Best Value authority'. This opens up several lines of enquiry. In particular, it suggests potential for divergence in how officers interpret Best Value. Variation in definitions and guidance also suggests it is unlikely to conform to a singular narrative. For an energy project, this suggests decision making procedures and their documentation

are hence likely to be a productive empirical area of focus, rather than evidence of 'best value' *per se*. This investigation is taken forward in Chapter 7.

### **6.3 The Business Case**

The business case is a much more specific tool within the overarching Best Value Framework. Broadly it can be described as an 'options appraisal' decision making tool that intends to support public spending decisions, assessing the entire costs and benefits of an energy project. As introduced in Chapter 2, a business case evaluation is expected to be used by local authorities across options appraisal in a number of situations, spanning: review of existing policies, programmes and services including curtailing or ending an activity; new revenue or capital spending; when awarding major contracts through public procurement; new administration; and instances of poor performance (Audit Scotland, 2014; Chartered Institute of Public Finance and Accountancy, 2010; Scottish Futures Trust, 2011).

Guidelines on how to construct and evaluate a business case span multiple different documents (Table 6.1). These collectively emphasise that most public bodies are 'expected' to adopt the business case options appraisal procedure. The business case is emphasised as crucial 'management tool' in project development (UK Treasury, 2013a); suggesting it aids decision making, reduces costs and time, and ensures transparency (Audit Scotland, 2014; UK Treasury, 2015a). This would suggest sector norms, but how a business case is developed for an energy project is unclear.

Guidelines draw from the UK Treasury *Green Book* business case 'five case model' evaluation method which forms underpinning guidance:



All new policies, programmes and projects, whether revenue, capital or regulatory, should be subject to comprehensive but proportionate assessment, wherever it is practicable, so as best to promote the public interest. The Green Book presents the techniques and issues that should be considered when carrying out assessments.

*Green Book*, UK Treasury, 2011, p. 1

Although local authorities are 'expected' to use a business case in many instances (as above), there is a mix of which guidance is 'recommended' and 'required'. For example, the *Green Book* model is included in the Scottish Futures Trust (2011) *required* guidance on assessing value for money in capital project business cases, which is issued to Scottish public bodies on behalf of Scottish Government. Access to capital funding made available to local authority energy projects through UK central government funding programmes is also contingent on use of the *Green Book* approach. One example is the Heat Network Investment Project which issues guidance on developing the business case to local authorities in England, Wales and Northern Ireland (ARUP et al., 2016; Grant Thornton et al., 2016). It is also required in the use of devolved funding settlements from UK Parliament, such as City Deal budgets (UK Treasury et al., 2014). Beyond these, the *Green Book* approach is *recommended* as the key assessment tool for all new projects and programmes (UK Treasury, 2015a). Therefore, the *Green Book* business case model could in principle shape different kinds of new energy projects/programmes, including those which are not primarily capital expenditure. Its key features are now introduced.

### **The Green Book**

2011 *Green Book* guidance was in place at the time of data collection; this was the 2003 version, updated with amendments. These included: 2013 guides for decision makers (UK Treasury, 2013b; 2013a); 2014 guidance for local authorities with devolved funding settlements in England, including combined authorities (UK Treasury et al., 2014); 2015 supplementary

guidance on using the five case model (UK Treasury, 2015a); and on valuing infrastructure (UK Treasury, 2015b), including heat networks.

The overarching goal of the *Green Book* approach is stated as ensuring that before a project or programme is adopted/commenced, consideration is always given to the following two points:

Are there better ways to achieve this objective?  
Are there better uses for these resources?

*Green Book*, UK Treasury, 2011, p. 1

Conducting the options appraisal to support the full consideration of these two points is structured as an assessment of five key types of factors. Guidance emphasises assessment should be completed in an iterative manner over three phases of project development. Guidance is issued on how to conduct these (UK Treasury, 2011; 2015a) as well as how decision makers should use the completed business case assessment (UK Treasury, 2013a; 2013b).

### **The Green Book five case model**

The basis of the *Green Book* method is the 'five case model'. This involves constructing and assessing the strategic, economic, commercial, financial and management case of the proposal.

The Strategic Case is the 'case for change', the reason, rationale and objectives for the new project.

The Economic Case is then assessed for fit against meeting the objectives of the strategic case. The economic case is the costs and benefits of the project, which is also sometimes referred to as the option appraisal (chapter five of the 2011 *Green Book*). This component of the business case has the most attention in the *Green Book*. In particular, the economic case assessment forms the basis for identifying if the preferred option for the project offers value for money. It also feeds into the financial case and

commercial case and is identified as critical prior to procurement. Further detail follows shortly.

The Commercial Case is the overall viability of the approach. This includes whether contractors can be secured, procurement approach and contracting details. Milestones for contracts with a timeline and risks should be detailed here. Working with the private sector is encouraged, including through outsourcing risk via procurement.

The Financial Case is how the project will be funded, including cash flows and overall affordability.

The Management Case details how the project will be delivered, including whether the project sponsor (here a local authority) has the necessary expertise and resources, but also detailing the project management reporting in place, including timelines, contingency plans, and monitoring.

### **The three stages of business case development**

Guidance emphasises that the business case is a document developed iteratively over three distinct phases of project development:

The Strategic Outline Case is developed at the beginning of a project, to identify a range of different options and assess these. Most emphasis at this stage is placed on the rationale for a new project, including how it aligns with strategy and goals. There is also some indication of the economic case, but less on financial and management aspects (UK Treasury, 2013a).

The Outline Business Case is developed and approved to enable proceeding to procurement of the preferred option. In particular, it ensures the “preferred option demonstrably optimises Value for Money” (UK Treasury, 2013a, p. 3).

To do this, the economic case should have been constructed in line with the *Green Book* (i.e. is 'Green Book compliant'.)

The Full Business Case is refined and approved to award contracts following procurement and is sometimes called the 'investment decision' stage of project development (UK Treasury, 2013a, p. 3).

When there is new construction and/or procurement, assessment of all five cases over all three phases is emphasised. Supplementary guidance is provided for infrastructure evaluation (covered below). Beyond this, it is recognised that the business case should be developed proportionate to the 'likely costs and benefits' of the project. In short, this means commensurate to size of project/policy/programme. Thus, smaller energy projects, in capital expenditure terms, are likely to have less extensive business case development compared to larger projects.

### **The role of the economic case in business case decision making**

The economic case is assessed using a socio-economic cost benefit analysis where all possible costs and benefits of a range of different options for delivering the project are monetised and assessed. Different options include a 'do minimum' option, with various potential options that have also been identified. For example, potential options for upgrading council buildings could include the council installing energy efficiency measures in corporate buildings, or using an energy performance contractor. These should be compared against the 'base case' or counterfactual (effectively 'business as usual'/'do nothing' with no change).

### ***Generating net present value in socio-economic cost benefit analysis***

A specified method of calculating the costs and benefits is used to derive a 'net present value' (NPV) figure. This is significant because NPV has the

status of the ideal comparable measure of value for money across different options in cost-benefit analysis (UK Treasury, 2011; 2013a; 2015a). As the proxy representation of value for money, NPV is intended to form the primary basis of decisions and guide decision makers on the preferred approach within the options appraisal. This is reiterated in the ‘how to’ guides and checklists developed for decision makers, “The option with the highest NPV is generally taken to be the preferred option” (UK Treasury, 2013a, p. 7). As a result of the significance afforded to NPV in decision making, guidance emphasises the importance of the economic case in all instances of business case valuations.

Having selected the preferred option (via NPV), this in turn influences procurement. For example, influencing whether a council directly procures energy retrofit technologies through open competition, or procures an energy performance contractor through a ‘framework agreement’. As described in Section 6.4 and Chapter 9 these decisions have significant implications for the energy project.

A series of calculations within the cost benefit analysis method generate NPV. This includes whole life costing, monetising lifetime benefits, distributional impacts of a proposal, and discount rates. Whole life costing goes beyond a simple measure of payback of capital investment by assessing “useful lifetime of the assets” (UK Treasury, 2011, p. 19), for example the lifetime of solar PV panels being installed. The purpose given for monetising benefits is “to consider whether an option’s benefits are worth its costs, and to allow alternative options to be systematically compared in terms of their net benefits or net costs” (UK Treasury, 2011, p. 21). Benefits that should be included are both those directly associated with the project but also those which have ‘wider effects’ on the economy<sup>31</sup>. The distributional

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<sup>31</sup> The *Green Book* recognises this is a difficult area, and suggests using datasets where they are available, or consider commissioning research to establish the monetary value of benefit. If neither

impacts of a proposal attempt to consider how calculated costs and benefits are spread across socio-economic groups. When evaluating infrastructure such as heat networks, supplementary guidance (UK Treasury, 2015b, pp. 19-21) also emphasises the ability to include ‘passive provision’, whereby pipe network in a first phase would be oversized. Although this would make phase one more expensive, it allows for network expansion.

These attempt to capture all possible costs and benefits across the lifetime of an initiative. Discount rates are then applied. Discounting is a means of considering the ‘time preference’ of costs and benefits at different points in time. It is “based on the principle that, generally, people prefer to receive goods and services now rather than later” (UK Treasury, 2011, p. 26).

Discount rates create a comparable measure of each option, NPV:

The discount rate is used to convert all costs and benefits to ‘present values’, so that they can be compared. The recommended discount rate is 3.5%. Calculating the present value of the differences between the streams of costs and benefits provides the net present value (NPV) of an option.

*Green Book*, UK Treasury, 2011, p. 26

There is however some recognition (UK Treasury, 2011, p. 38) that the NPV may need to be considered alongside costs and benefits which cannot be monetised. The guide for decision makers reiterates this:

There may... be decisive but unquantifiable costs or benefits which although impossible to quantify are sufficient to override a simple highest VfM [value for money] result.

UK Treasury, 2013a, p. 7

Despite the difficulties of incorporating all the costs and benefits into the NPV device, this method is nevertheless emphasised as the ideal calculation to assess and compare different options in the business case. By contrast, generating an NPV from cashflows and estimated financial returns with

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of those are feasible, then a central estimate should be derived with a minimum and maximum value attached.

financial modelling methods, is considered as creating a partial picture of the full costs and benefits of different options (UK Treasury, 2015a, p. 51).

Furthermore, guidance specifies that the payback period and internal rate of return (IRR) are not adequate calculations to base business case evaluation decisions on. The payback period calculates the number of years for capital costs to be recovered. The *Green Book* argues the payback calculation does not capture 'wider impacts', including costs and benefits after the payback date. As a result, the payback device "is likely to distort project choice [...]" These drawbacks mean it [payback] should not generally be used as a decision criterion" (UK Treasury, 2011, p. 39). IRR is typically used as a proxy measure of the risk of an investment in the private sector, with minimum hurdle rates used to determine whether a project investment is viable (ibid.). As a result, guidance argues that IRR "should be avoided as the decision criterion. Whilst it is very similar to NPV as a criterion, there are some circumstances in which it will provide different, and incorrect, answers" (ibid.).

In its entirety, *Green Book* guidance provides a prescriptive model of adopting the business case according to five key elements. This is intended to be iteratively devised over three phases of project development, though guidance does note that use of the business case should be proportionate to the size of the project. A standardised approach for conducting a cost-benefit analysis is used to arrive at what is considered the optimal value for money assessment. Specifically metrics such as payback and IRR are discouraged as decision making criteria. This initially suggests little room for user discretion.

Review of major capital projects in Scottish councils (defined as projects over £5 million) however, reported a different picture to guidance. In particular, audit on the use of a business case in these major capital projects found:

Many councils do not have established processes for developing and using business cases. Where available, business cases are often short and highly summarised and do not all reflect good practice. Without good-quality and realistic business cases, particularly at the initial approval stage, key performance information on aims, cost, time, scope and risk may not be clearly defined. This may make it more difficult to hold decision-makers to account if problems arise on a project.

Audit Scotland, 2013, p. 21

This would indicate that local valuation practices are likely to diverge, despite the standard approach put forward in guidance. This could, in principle, stretch as far as to no singular business case model being used across the cases. Chapter 8 takes this forward.

## **6.4 Public Procurement**

Local authorities spend considerable sums of money via procuring goods, works and services. English local authorities' 2017-18 total revenue expenditure was £93.1 billion: procurement expenditure was around two-thirds of this (£61.6 billion). Capital expenditure in local infrastructure such as roads, housing, schools, public facilities and street lighting was about a quarter (£25.4 billion) (MHCLG, 2019).

Public procurement has become a specialist field of knowledge and expertise, with evolving codes of practice, technical rules and guidance, as well as specialist procurement services. Within a local authority, the procurement department in Professional/Corporate Services are responsible for running compliant procurement exercises.

There were two main sets of public procurement rules governing the local authority energy projects studied in this thesis. First were UK specific procurement rules, mostly associated with the Best Value Framework which apply to all procurement. Second, were EU Directives transposed into UK and Scottish 'Public Contracts Regulations' which only apply above certain threshold levels set by the EU (explained below).



The Best Value Framework requires local authorities consider economic, social and environmental value in all procurements of goods, works and services. It therefore applies to any type of procurement. As noted in Section 6.2, local authorities' procurement strategy is one contribution toward meeting the duty of Best Value<sup>32</sup>. In addition, there are further requirements which reinforce how local authorities can further economic, social and environmental well-being through some areas of their procurement activities<sup>33</sup>.

### **Public Contracts Regulations**

Conversely, Public Contracts Regulations only apply above certain threshold levels set by the EU. The European-wide framework of procurement rules and regulations is designed in response to specific political objectives, particularly promoting economic efficiency across the single market (European Commission, 2011; 2016). It is formally structured as a means of accountability for public spending, and is embedded in EU, UK (covering England, Wales and Northern Ireland) and Scottish legislation, which are outlined below. Tenders above certain amounts (set every 2 years) must comply with EU public procurement rules, including publication through the Official Journal of the European Union (OJEU)<sup>34</sup> to promote open competition.

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<sup>32</sup> For example, in Scotland local authorities are required to provide an annual procurement report which includes details how their policies and procedures and previous year's procurement has contributed to meeting 'best value' to the council.

<sup>33</sup> For example, in England the Public Services (Social Value Act) 2012, applies to pre-procurement of services contracts, services plus goods or services plus works (but not goods or works only contracts). The intention is to ensure that a wide range of procurement options are considered before issuing a tender. Guidance in England emphasises that this involves focussing on "taking a value for money approach – not lowest cost – to assessing contracts" (Cabinet Office, 2012, p. 2). In Scotland by the Sustainable Procurement Duty in the Procurement Reform (Scotland) Act 2014 applies to non-works and works contracts above threshold levels (£50,000 and £2 million respectively). In Wales the Well-being of Future Generations Act (2015) further promotes economic, social and environmental value within public procurement (Future Generations Commissioner for Wales, 2020).

<sup>34</sup> <https://www.ojeu.eu/>.

Principles of fair and open competition are intended to prevent fraud and nepotism in awarding contracts. The formal requirement for competitive tendering thus reflects specific ideas about efficiency in public spending: mimicking a market is regarded as the ‘optimum’ way to deliver cost-effective solutions, and ensure value for money. Suppliers must be treated fairly (defined in the regulations as “equally and without discrimination”) and contractors, here a local authority, must act in a “transparent and proportionate manner” (Public Contracts Regulations 2006 and Public Contracts (Scotland) Regulations 2006). Suppliers can challenge award of a contract if they believe market distortion has taken place, with unfair advantage given to another.

The Public Contracts Regulations 2006 and the Public Contracts (Scotland) Regulations 2006 (as amended) applied to most of the energy projects studied in this thesis. These transposed the 2004 EU Directive (2004/18/EC) on public works contracts, public supply contracts and public service contracts. During data collection these public procurement regulations were updated, transposing new EU Directives into UK and Scottish law. The Public Contracts Directive 2014 (2014/24/EU) replaced the 2004 directive and 2006 regulations, and a new Concessions Contracts Directive 2014 (2014/23/EU) was introduced. They came into force at slightly different times between 2015 and 2016<sup>35</sup>. The 2006 regulations are summarised below, with a brief commentary about new 2016 regulations, as relevant to energy projects.

The 2014 thresholds for which Public Contracts Regulations applied were: £172,514 for services; £4,322,012 for works; and for small lots: £66,672 for supplies and services, and £833,400 for works (Cabinet Office, 2013). The Regulations require the publishing of a ‘contract notice’ on OJEU (the official

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<sup>35</sup> In England, Wales and Northern Ireland: the Public Contracts Regulations 2015 in February 2015 and the Concession Contracts Regulations 2016 in April 2016; and in Scotland these were both brought in under Scottish legislation in April 2016.

publication of public contracts governed by regulations), the Tenders Electronic Daily (TED) database and also in UK databases (such as Contracts Finder). Issuing a contract notice must include the award criteria and the relative weighting. Once a contract has been confirmed an award notice must also be published.

### **Contract award**

Contracts are awarded on the basis of “the most economically advantageous tender (based on criteria such as quality, price, technical merit, after-sales service); or the lowest price” (EU Directive 2004/18/EC, EUR-Lex, 2015). The price-quality ratio forms the basis of determining the ‘most economically advantageous tender’. The price-to-quality ratio takes into account: “factors such as the overall cost effectiveness, quality, environmental and social aspects, trading and delivery conditions” (EUR-Lex, 2016). Both the UK and Scottish regulations (Section 30) describe this as using:

criteria linked to the subject matter of the contract to determine that an offer is the most economically advantageous including quality, price, technical merit, aesthetic and functional characteristics, environmental characteristics, running costs, cost effectiveness, after sales service, technical assistance, delivery date and delivery period and period of completion.

Public Contracts Regulations 2006, s30

Local authorities use the specification to define the assessment criteria and weighting, and this feeds into the price-to-quality ratio. Thus, these are crucial dimensions to valuations in energy project procurement.

There are standard criteria for rejection of bidders on the basis of ineligibility. This includes issues such as fraud or money laundering, but also the financial stability of the bidder, and their technical ability.

Although public procurement is a distinctly rule governed attempt to promote fair competition across the single market, there are actually significant areas of discretion built into it. As a valuation practice, it is down to local authorities

to determine the scope of the contract, the tender specification, and the evaluation criteria. They may opt to award contracts on the basis of lowest price, or via a price-to-quality ratio. This can be defined in each instance of procurement.

What remains unanswered is how officers might actually use areas of discretion in procurement within energy project development. Public procurement rules require considerable specialist knowledge and expertise to navigate an energy project through them. Take for example using the tender specification and evaluation criteria to secure a high quality supplier and deliver the envisaged project. This relies on having the knowledge and expertise to define the specification, set the right criteria, and evaluate the responses. Understanding how this process unfolds is taken forward in Chapter 9.

### **Procurement routes, variations and exemptions**

Four types of procurement were allowable for regulated public procurement under the 2006 regulations, alongside two variations and exemptions:

*Open:* 'standard' single stage open market competition where the tender specification is advertised and eligible contractors are invited to submit tenders. Any party may submit.

*Restricted:* this involves two stage processes of 1) open competition in which any party may submit an interest in bidding, via a Pre-Qualification Questionnaire (PQQ); and 2) the local authority shortlists from stage 1 and selects bidders who are subsequently invited to tender in full.

*Negotiated:* this involves directly negotiating the contract with the bidders, i.e. the scope of the project is partly determined through the procurement process rather than prior to issuing a contract notice.

*Competitive Dialogue*: this is allowable in the case of complex contracts such as concession contracts (which since 2016 have their own regulations Crown Commercial Service, 2016). This is an extended mixture of the restricted and negotiated procurement routes and involves a two stage process of: 1) issuing a contract notice which leads to a selection process whereby bidders suggest solutions and engage in discussion with the local authority in a negotiated process; and 2) following stage 1, a final invitation to tender is issued to those bidders the local authority wishes to take through to the final stage (this is usually two; and there may have only been two remaining anyway). Final tenders are evaluated and the preferred bidder is brought into contract negotiation. It can only be used where the project is deemed to require a “particularly complex contract”, which is applicable when a local authority is unable to define the technical specification of the contract and/or unable to define the legal or financial structure of the project (‘The competitive dialogue procedure’, Section 18, Public Contracts Regulations 2006; Section 2, the Public Contracts (Scotland) Regulations 2006).

There are two primary exemptions to following the procurement process outlined: framework agreements and in-house awards.

*Framework Agreements*: these are not directly defined as a ‘type of procurement’ but must be established in accordance with the main body of regulations and principles of fair and open competition. A framework agreement sets up a defined list of pre-approved suppliers who can then bid for work in response to an ‘invitation to mini-competition’ (ITMC) issued by a local authority to only that group of suppliers. They are initially established by a ‘central purchasing body’ (which can be a local authority themselves) who conducts an OJEU compliant open procurement process. Subsequent ‘call-offs’ by local authorities are then intended to be quicker and cheaper than other types of public procurement with quality assessment already in place.

There are multiple procurement frameworks for Energy Performance Contracting (EPC) that have attempted to create a model which can be easily rolled out across the public sector estate; these include the use of standard contract templates and documents which can be adapted to local circumstances (Department of Energy & Climate Change, 2015). Different types of EPC are offered depending on which procurement framework is being used;<sup>36</sup> the EPC model is outlined in more detail in Chapter 5 (Section 5.3).

*In-house awards* (also known as ‘Teckal exemptions’): these are contracts which are above the threshold for public procurement regulation, but are defined as being issued to an organisation which is controlled by the local authority. This is usually through ownership and business operations, such as a local authority owned district energy business which primarily serves council owned buildings. Where the definition is met, the organisation can be directly contracted by the local authority without using one of the regulated types of procurement. The appointed organisation must however conduct its own procurement in line with principles of open and fair competition.

The 2016 regulations expanded on clarifying the definition of meeting the Teckal exemption. They also introduced further exemptions for ‘inter-authority cooperation’, which is where more than one local authority (or public body) conducts procurement together, but without setting up a new body. This builds on the Hamburg case where the city council procured a waste facility for multiple local authorities; usually this would have involved the authorities setting up a jointly owned entity to then procure the waste facility (similar to joint waste authorities across parts of the UK) (for elaboration see Pinsent Masons, 2015).

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<sup>36</sup> In the partner bid for example, the project sponsor usually details some of the specification and the contractor then proposes the individual measures to be installed. In the target bid the project sponsor is responsible for making detailed requirements and the contractor completes the work according to the set specification.

Multiple procurement routes suggest some scope to shape which type of procurement is used, though specific tests must be met for some (such as competitive dialogue and the Teckal exemption). Entire new framework agreements can also be established, or local authorities may use an existing one (where one is available). Framework agreements create a bounded regulated space within which to engage with a sub-set of suppliers on pre-determined types of energy projects. As this suggests, within the bounds of the overarching regulations that oversee spending public money and awarding contracts, each instance of energy project procurement could be tailored to the specific project.

## **6.5 Discussion: navigating valuation frameworks in energy project development**

This chapter has set out the formal rules and regulations governing use of each valuation framework. This analysis has identified there are varying degrees of interpretative flexibility designed into each framework. Thus, based on the guidelines, ‘users’ might interpret the rules in developing an energy project differently.

From the perspective of a valuation practice, the Best Value Framework is most wide-ranging intending to improve local services by shaping the organisation as a whole. There are however, unanswered questions about whether the Best Value model enables any material change from the lowest cost contracting-out model of local services, and if, so in what ways. Are local authorities able to enterprisingly use a management process to create areas of agency and discretion in energy project development? Potentially, more ‘marginal’ projects that have lower financial returns on investment could be positioned as contributing to the improvement of council services. In principle, guidelines are supportive of this, however, it is currently unclear how this plays out. The conceptual model introduced in Chapter 3 also takes

a cautious approach as to whether the Best Value Framework reshapes central-local governance. Particularly, it is mindful about the degree to which, as part of shaping local services and provision, Best Value actually frees up local government to assemble non-financial value from energy projects. Chapter 7 investigates this.

Within the overarching Best Value Framework, the Business Case model has no direct statutory basis. Guidance consistently recommends the business case tool to local authorities to support options appraisal for capital expenditure, such as the energy projects I examine. Guidance issued by UK Treasury places considerable emphasis on a standardised approach which prioritises calculating net present value and using it as *the* device for selecting the preferred approach of the options considered. As this suggests, where this model of the business case assessment is adopted, it is likely to play a considerable role in shaping the eventual form of an energy project. Payback and internal rate of return are specified in guidance as two metrics which, according UK Treasury, provide an incomplete picture of the ‘true’ costs and benefits of a project. However, it is unclear what constitutes a business case for energy projects; whether this guidance is adopted; and how, if at all, it is used to guide decision making. Chapter 8 tackles this.

Lastly, as a valuation system, public procurement regulations provide a uniform set of rules to structure the entire process of buying goods and services. This goes from issuing a tender, through to awarding a contract. Public procurement thus governs a local authority’s interactions with suppliers. Competition is heavily promoted as the optimum way to secure value for money solutions for public bodies. However, principles of open, fair and transparent competition, may not in themselves aid local authorities to gain trust in suppliers. For instance, this assumes that high quality suppliers will bid for the work, but this needs investigating further. There is also little evidence about the potential impacts of austerity on local energy



procurement. Reductions to back-office functions such as procurement, may have reduced capacity to manage these complex processes. Cost saving pressures may also influence how local authorities set the price-to-quality ratio in evaluating tenders. As such, there is a need to understand more about how this highly structured valuation practice actually shapes the energy project. Chapter 9 explores this.

In this chapter, I have explained the rationale for selecting three valuation frameworks for detailed investigation. Introducing the main rules and guidelines shaping each valuation framework has provided an overarching picture about how this programme of governing attempts to structure local energy projects at key junctures in their development. The next step is to explore local energy valuation practices in more detail. It is crucial to understand how officers actually use and interpret these frameworks in practice. This will progress investigating the claim that valuation frameworks are dependent on 'users' interpretations. In the next chapter I take forward this analysis, focusing on the Best Value Framework.

# **7 The Best Value Framework and Local Energy Projects**

## **7.1 Introduction**

Having introduced the Best Value Framework in the previous chapter, here I aim to understand more about its meaning and interpretation within energy project development, and how it is negotiated in practice. The remainder of the Introduction brings together key points about the Best Value Framework, and the conceptual tools used to investigate it. What then follows is a qualitative examination into what happens to the negotiation of value as energy projects encounter 'best value' in council decision making.

Chapter 6 argued that from the perspective of local energy valuation practices, the Best Value Framework is consequential as it intends to structure council decision making routines. Under the guise of 'improvement' in public services this spans front line services (i.e. statutory local services), back office 'corporate' support functions such as financial management and public procurement, along with internal scrutiny and audit of organisational governance. However, there are tensions between different descriptions of what constitutes 'best value'. For example, the definition of 'best value' as moving beyond lowest cost contrasted with descriptions from inspections which prioritised 'sound' financial management and 'value for money'. This variation implies that 'best value' could be enacted through multiple, potentially contrasting, processes of valuing. This could shift the negotiation of value in different directions. In addition, both development of a business case and procurement practices can be used to demonstrate that the Best Value Framework has been adhered to. How these devices are used to demonstrate Best Value is considered in this chapter.

Informed by the theoretical approach explained in Chapter 3, I conceptualise the development of an energy project as a process shaped by 'valuation practices' (Muniesa, 2012). This considers that value is produced through active material processes, rather than being inherent in any initiative. In this perspective, valuations are not performed by singular persons, but by an actor-network, a 'socio-technical agencement' (Callon, 2008). An 'agencement' considers the agency for valuation as shaped not only by the agency of human actors, but by interactions between a variety of human, infrastructural, material, and institutional objects and practices (Callon, 1999; Helgesson & Muniesa, 2013). The actor-network, rather than a single individual, has the calculative agency required for valuations. The implication of this is that the Best Value Framework is considered as an active, rather than passive, component of valuation practices in energy project development.

Insights from 'programmes of governing' (Miller, 2008; Miller & Rose, 2008), explains that governmental agendas are part of the active substance of valuation frameworks such as Best Value. This concept considers that governmental agendas attempt to control the actions and agency of local authorities through the application of valuation frameworks. Hence, valuation frameworks such as Best Value are conceived of as capable of exercising political power and control within local authority valuation practices. It is thought that this is permissive and pursued through attempting to shape the 'everyday' work (Miller & Power, 2013) of organisational routines.

Concurrently however, this perspective also reminds us that political attempts to structure value-making are inevitably more ambitious than what is achievable in practice. A programme of governing is thus incomplete. This is because the ability to actually structure decision making is contingent on how councils implement the rules set for them. Valuation frameworks for example rely on their interpretation by 'users'. As I explained in Chapter 3, finitism

(Barnes, 1995) suggests this is because users apply judgement and meaning in each instance of classifying, rather than simply adopting rules and guidelines or using previous knowledge. As such, there is potential for interpretative flexibility in negotiating the Best Value Framework that can disrupt or obstruct attempts to exert political power.

I use this theoretical perspective to consider that the value of an energy project is not fixed, but instead assembled and shaped by actor-networks in a value-making process, and is hence the result of negotiation. By trying to structure the terms of local authority valuation practices, I treat the Best Value Framework as an instance of a rule governed valuation framework, which encompasses political attempts to control the functioning of public organisations. Applying this to local energy projects leads to a focus on procedures for assessing value, which I treat as processes of value-in-the-making. In Section 7.2, I explore the different meanings that local authority officers attached to the operationalisation of 'best value' in energy projects. Section 7.3 moves on to consider how formal reporting procedures operationalised the Best Value Framework. This provides an entry point into inquiring how this programme of governing shapes value-making negotiations in the everyday valuations of a local authority energy project. Section 7.4 discusses the impact on the energy project as it is required to fit within the confines of established decision making procedures.

## **7.2 The meaning of 'best value' in local energy projects**

Officer accounts of the operation of what 'best value' means to local energy projects revealed three different interpretations. Explanations were associated with project objectives, the business case, and public procurement. These were not mutually exclusive. In particular, the affordability of the project's business case, and market testing within public procurement were inter-related. As such, both the business case and

procurement valuations were central to the demonstration of Best Value; after discussing their relevance to Best Value, Chapters 8 and 9 extend the investigation into valuation practices associated with business case and public procurement devices.

### **Defining 'best value' on a case-by-case basis: project objectives**

The first interpretation of 'best value' was associated with energy project objectives. Officers in Aberdeen, Derby, Edinburgh and Swansea emphasised that because objectives depended on the energy project in question, what constituted 'best value' also varied. This variation went beyond carbon or energy saving, to include social and welfare goals including fuel poverty amelioration, along with objectives such as wanting to improve the buildings that staff worked in. This illustrated a finitist application to value-making where 'best value' did not have an inherent meaning, but was instead defined according to the individual energy project.

In Aberdeen, Martin stressed that their objective to reduce fuel poverty in social housing tower blocks led them to proceed with establishing an independent not-for-profit district energy business<sup>37</sup>, Aberdeen Heat and Power Ltd (AHP). AHP provided heating and hot water, and also upgraded the external fabric of the buildings. Martin described how, by delivering on the project objectives, this energy project type with its ownership and business structure, had created 'best value' to the council:

best value work was done at the beginning as solutions to these buildings. [...] there's a big fuel poverty [problem] in these buildings and we've not seen anything else that's come along to say there's another way. In a multi[storey block] you'll get affordable warmth by that type of [district] heating... and it's working well... And this is the best way of achieving our targets.

Martin, Aberdeen City Council

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<sup>37</sup> See Chapter 5 for a description of ownership, business structures and contract models.

By contrast, Edinburgh's energy project was improving the energy performance of ten corporate council buildings, and hence objectives differed. Trudy emphasised that project objectives were reducing energy costs, but because of the run down condition of some of the buildings, it was also about making a more suitable working environment. Trudy described that what constituted 'best value' in this project therefore involved considering value in a "*wider sense*":

out of the best value discussion, it's about better value buildings, it's about comfort levels for our staff that have to work in some really horrible buildings [...] with overheating in some areas, cold in others... it's about creating best value in the round, in the wider sense.

Trudy, City of Edinburgh Council

Thus, in this instance 'best value' also incorporated staff welfare into the value of the energy project.

Again linking to project objectives, Sandra (Swansea) emphasised that social objectives, particularly skills development and local enterprise in deprived areas, had shaped their decision to establish Swansea Community Energy, a citizen owned solar energy cooperative. The council provided human and financial resources to set up the project<sup>38</sup> and offered rooftops for the solar PV. Importantly, these locally defined objectives provided the rationale for initiating the project as a Community Benefit Society<sup>39</sup>. These social objectives were further supported by a community benefit fund created from the project's long-term income streams (electricity sales and feed-in tariff) that pays for community-led projects. Sandra explained that this form of community ownership met the project objectives and therein generated 'best value' to the council:

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<sup>38</sup> Including developing the project, establishing the legal structure, running the share offer, operating a temporary board of directors and investing capital into the project.

<sup>39</sup> A Community Benefit Society (a type of Industrial & Provident Society) is a not-for-profit membership organisation owned and run by members for the benefit of local people and community purpose.

[It's] how we define best value... So the best value for us would be the social benefit alongside the financial benefit... and that's where the objectives of the project become critical. The objectives for this project... were all around enterprise... [and] community benefit.[...] We were able to say that [what] we went for, provides the best community input and also allows for protection of the public funds.

Sandra, City & County of Swansea

Sandra's account also alluded to the need to 'protect public funds' in the approach adopted, which I return to later in the chapter.

The idea therefore was that 'best value' in practice could be flexibly moulded to an individual project, and defined on a case-by-case basis. In principle then, any type of project, ownership and business structure that met council objectives could be determined as 'best value'.

Officer accounts that reflected this interpretation identified that the concept of 'quality', which is embedded in the Best Value Framework, was key to opening up this kind of interpretative flexibility in project development. John (Derby), noted that project objectives could respond to a variety of social, environmental and local economic values that motivated service organisation. John stated that, *"It's not all about price anymore and it shouldn't be. It's about quality and the different aspects of quality and the wider social agenda as well that needs to be part of that decision."* Martin (Aberdeen) agreed, also pointing out the move away from a sole focus on money or price, *"you can't always judge everything by the best business case. The best value should be monetary, to be held with other targets... sustainability, carbon reduction."* Furthering this point, Trudy (Edinburgh) noted that there was more balanced decision making, which in turn enabled projects to *"deliver a better outcome"*. In Edinburgh they had installed technologies which reduced ongoing maintenance costs (though may have greater upfront costs), and they had drawn on multiple council budgets to meet project costs. In this first interpretation, multiple forms of non-financial

value were thus incorporated into how a council considered whether an energy project could provide 'best value'.

### **Covering project borrowing costs: the 'best value business case'**

The second interpretation of 'best value' was associated with the energy project business case. Officers in Leeds and Gateshead described that a project which covered its borrowing costs (from the Public Works Loan Board, PWLB), represented 'best value' to the council. When a project was unable to cover its borrowing costs, alternative options needed to be considered. This included how to access grant funding to fill the gap in capital costs, through to the potential to outsource, or not proceed at all.

In Leeds, Peter noted that they had been unable to secure private finance on acceptable terms for the city centre district heating network (c.£21 million capex). The project would take heat from the energy from waste plant at Cross Green, and provide social housing residents with affordable heating and hot water. Subsequent expansion was planned for extending the network to the city centre, initially connecting public buildings, but with expectation of further connection to a range of customers as the network grew. Unable to secure private finance, Peter emphasised, *"It's about demonstrating a business case... that can hope to generate sufficient return to cover the borrowing"*. Andrew (Gateshead), similarly agreed, and emphasised that funding their district energy network (c.£18.5 million capex), primarily through borrowing from the PWLB, was similarly based on whether the project would have covered its costs:

best value is when we as the council decide we're going to go forward with the business case [... and] if we're going to borrow from the Public Works Loan Board [PWLB], is there a best value business case for that? [...] The reason we develop big capital schemes is because our potential schemes... they're good, they can generate income... and that's how we can then borrow from the PWLB.

Andrew, Gateshead Council



The business case thus became the object where dimensions of what constituted 'best value' to the council had to be made commensurate. This narrowed down the multiple non-financial objectives identified in the first interpretation of 'best value', into a financial evaluation of whether the project was affordable. The valuation practice was thus re-configured to focus in on the financial aspects of projects. Chapter 8 further explores the role of the business case.

### **'Best value': the outcome of market testing**

The third interpretation of 'best value' in an energy project was associated with procurement. Officers in multiple councils (including Aberdeenshire, Cambridgeshire, Camden, Edinburgh, Gateshead, Glasgow, Leeds), noted that securing 'best value' to the council was the outcome of market testing. This was orchestrated through public procurement, where the response from suppliers provided evidence about whether their proposed energy project – as defined in the tender specification and evaluated through the price-to-quality ratio – could be delivered.

As a valuation practice, this interpretation was thus based on a market/competitive exercise where suppliers' responses constituted 'best value'. Stephen (Glasgow) summarised that evaluation of bidders was, *"a best value assessment that we do that works out whether this is the best approach or not"*, for the individual energy project. Officers noted that this was not about lowest cost, but if suitable suppliers did not respond, then the project either did not go ahead, or it had to be revised to meet the definitions of value set by the 'marketplace' governed within public procurement.

This interpretation of 'best value' was contingent on the ability to emulate a competitive market within local energy procurement. Stephen (Glasgow) emphasised that, *"normally we'd go out... and assess best value through the market"*. Whilst Melissa (Camden) highlighted that tendering, *"is ensuring the*

*best value because of the competitive element*". Similarly, James (Aberdeenshire) discussed how projects, "would all be tendered to demonstrate best value". Creating market interest from suppliers by comparing bids was hence a necessary step in this interpretation of 'best value'.

Retaining control over value within procurement required carefully scripting the tender specification and setting the award criteria. Even in these standardised elements of the valuation practice, there was considerable scope for interpretative flexibility. Guidance (see Chapter 6, Section 6.4) does not stipulate how to set the price-to-quality ratio, this is left to the contracting authority. However, where the price-to-quality ratio is used, the contract must be awarded to the bidder with the highest combined score.

Sharon (Cambridgeshire) elaborated, discussing procurement of their energy performance contracting (EPC) project which targeted county council owned buildings, particularly the schools estate. Sharon noted that because the contract relies on a "partnership approach" with the energy services contractor<sup>40</sup>, 'best value' was defined in terms of how the partner would approach working with them. Specifically, the nature of the project – mostly installing retrofit measures in schools – meant price alone was not a helpful indicator of value in this energy project. Instead expertise and work ethic of the contractor as well as how they would work with individual headteachers were prioritised as the valuable elements:

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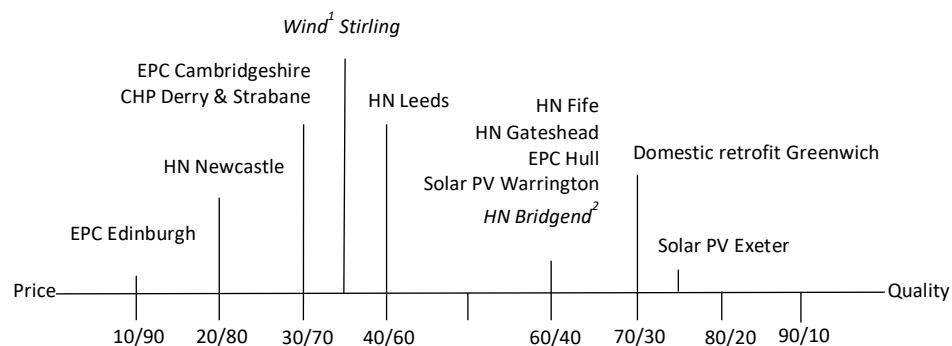
<sup>40</sup> See Chapter 5, Section 5.3 for description of the contract model.

the challenge... with developing best value on a partnership approach is that you can't say that you've got the cheapest price. So [we're] saying, 'well, what is it we value here?' We know [the] schools... don't have any technical [energy] expertise [...] So we needed to assure ourselves... that we were bringing partners in who were going to have the skillsets, have the customer responses that were needed. And we have tested them out on the price, it's just not the cheapest price for an individual building. But on balance, we thought that all the other parts would add up to value.

Sharon, Cambridgeshire County Council

Moulding interactions with suppliers to the individual project included tailoring the price-to-quality ratio on a case by case basis. Officers thus emphasised that setting the ratio was dependent on the project in question. James (Aberdeenshire Council) noted that it, “*varies from project to project*”, whilst Trudy (Edinburgh) commented that focussing more on quality or price was, “*a judgement that each council will make*”. The ratio was therefore a substantive way for local authorities to attempt to control value within public procurement: allowing them to exert judgements and malleably tailor procurement in each case to shape evaluation toward price or quality. Adaptation of the price-to-quality ratio is depicted in Figure 7.1.

Figure 7.1 Interpretative flexibility in setting the price-to-quality ratio



<sup>1</sup> Feasibility study. Ratio set at 35/60/5 price/quality/working practices.

<sup>2</sup> Feasibility study & business case.

In the sample, the ratio ranged from 10:90 (price:quality) in Edinburgh's evaluation of tenders for their energy performance contracting project of nine public buildings, through to 75:25 (price:quality) in Exeter Council's solar PV programme. Despite huge variation for some specific instances, officers reported that a middle ground of 60:40 – 70:30 (price:quality) was fairly normal. These middle ground cases showed evidence of sector norms embedded into a local standard approach. For example, Phil (Bridgend) said that *“we tend to have a heavy weighting on price... 60:40, 70:30 [price:quality], there's a little flexibility around that but I would always expect price to generally be about 50%”* .

In turn, the supplier with the highest score reflected the 'best value' that could be delivered through the marketplace. As Stephen (Glasgow) put it, when evaluating the tenders, *“you're assessing value and best value is evidenced by how it's scored”*. Chapter 9 explores this navigation of public procurement in more detail.

In an iterative process, this procurement valuation then fed back into the interpretation of 'best value' as the energy project business case. Andrew (Gateshead) and Peter (Leeds) both elaborated on how the procurement process provided evidence about the affordability of the project and thus shaped the 'best value business case'. As Andrew explained:

the best value judgement comes in when you get your prices back. You update your financial model, if it still stacks up it's best value, if it doesn't you don't go forwards and you've wasted half a million quid's [pound's] worth of procurement but at least you haven't committed yourself to a scheme that's going to lose money. So that's the challenge really.

Andrew, Gateshead Council

Across these cases, officers employed different, non-mutually exclusive meanings of what constituted 'best value' in energy project development. This revealed a number of insights. As a valuation practice, this illustrated a finitist interpretation of rules, which spanned diffused and varied notions of

value associated with numerous project objectives. This extended valuations beyond economic terms, incorporating social value and welfare into the justification for a particular project's scope, ownership and business structure. At the same time however, there were also narrower associations on how to finance a project, and secure suppliers. Nevertheless, officers used the flexibility within the price to quality ratio to attempt to secure suppliers that could deliver the project as envisaged by the council. Combined, this shows that the operationalisation of 'best value' resists conforming to a singular definition.

To varying degrees, the process of making 'best value' meaningful was also muddled amongst the programme governing local authority spending. Examples were the intermingling of the business case and public procurement as the loci of how to determine what 'best value' amounted to in an energy project.

This has revealed that 'best value' means distinct things within different energy projects. However, beyond the specifics of the price-to-quality ratio in public procurement, it tells us less about the material influence of the Best Value Framework in actual project development. For example, it is unclear, how, if at all, this kind of interpretative flexibility was actually a meaningful route to exert influence within energy project valuation practices and capture local forms of value. At least in the stages prior to procurement, there is limited evidence supporting this. For instance, it is not yet possible to say whether the Best Value Framework *per se*, played a strong role in adopting a specific ownership structure. To explore this further, the next section uncovers what happened to the negotiation of 'best value' as the energy project journeyed through council decision making apparatus.

### **7.3 From best value to value for money: procedural accountability in council decision making**

any money, any project, we have to demonstrate best value and that we've done due diligence on it. And that we've measured and assessed what the risks are associated with the project. So whatever project, it doesn't matter what it is, we still have to go through that process.

Sandra, City & County of Swansea

Internal decision making and reporting procedures operationalised the Best Value Framework into the everyday work of council business. As Sandra explained above, energy project valuations were in turn configured in response to the requirements of these standardised decision processes. Across all cases, these procedures involved compiling a report about the energy project that fulfilled pre-set requirements for submission. The report was the basis upon which decisions by Council Executive or a specific Committee were made<sup>41</sup>. As part of the local democratic process, councils are also expected to have internal scrutiny arrangements in place. This includes holding decision makers accountable via transparent review, audit and financial management. The task of ensuring that the council meets obligations set out in the Best Value Framework about council performance and securing value for money falls within the remit of the internal Scrutiny Committee. Internal Scrutiny Committees reviewed decisions which they determined needed further examination. Combined, this represented the system of accountability that enacts the programme of governing of local authorities. It underpinned council decision making, and in turn presided over formal valuations of energy projects.

#### **Shifting the terms of valuations**

The earlier interpretations of 'best value' in an energy project (Section 7.2) were reframed as it filtered through this system of accountability. Concern

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<sup>41</sup> See Appendix II for overview of Executive and Committee Structures.

over 'demonstrating' value for money in the use of public resources was a particularly influential requirement that entered this valuation practice. Formally, value for money specifically encompasses economy, efficiency and effectiveness in the public sector (see Chapter 2, Section 2.3). Although value for money also operates outside its formalities, as introduced in Chapter 6 (Section 6.2) the Best Value Framework, is actually one of the ways it is enacted within local government. When discussing formal council procedures, officers discussed 'best value' and 'value for money' interchangeably. This makes them difficult to disentangle within this valuation practice and suggests that the concept of Best Value has not successfully repositioned council decision making beyond narrower definitions of value for money.

Crucially however, the parameters of the valuation practice shifted as the measures for demonstrating public accountability and value for money came into play. The notions of 'creating' varied forms of value in relation to delivering on project objectives (Section 7.2) faded into the background. In its place, was a move toward 'demonstrating' that the council had developed an energy project that could defensibly be argued to provide 'best value for money'. Although the shift might appear subtle, a transformation in the assembly of value was underway; from 'creating' – making value from a project, in a material sense – to 'demonstrating' – substantiating that principles of value for money underpinned decision making. The embedded assumption, is that the latter produces the optimum outcome for the energy project. From the perspective of a valuation practice, this programme of governing attempts to control the procedure, whilst remaining agnostic to the outcome of these decisions.

In providing the demonstration of 'best value', the specific choices, such as an energy project's ownership structure, were less significant than the process used to underpin the decision. Comparative options appraisal and

due diligence were routinely emphasised by interviewees as necessary to verify that value for money was the foundation upon which energy projects were assessed. Sandra (Swansea) elaborated, noting that from an audit perspective, value for money tests were satisfied by showing that they had examined potential options for delivering the solar project (Swansea Community Energy), and investigated the risks associated with the investment:

We've been able to justify through the due diligence that this is the best value approach for us and that we've done comparisons against different technologies, different business models. [...] As long as [our decision makers] can show our audit committees and our auditors... that the rate of return on the financial investment is sound. And that we are confident we've done enough due diligence on the business structure [...] that that money is a safe investment.

Sandra, City & County of Swansea

Simon (Birmingham) agreed, and envisaged that the potential extension to district energy provision in the city would be called in for review over the value for money by the Scrutiny Committee covering transportation, waste and sustainability. The potential expansion represented a major extension to the existing district heating scheme and would, if pursued, connect to heat sources at Tyseley Energy Park<sup>42</sup> (3-4 miles from the city centre). This included a proposed new energy from waste facility, as the replacement for a council owned waste incinerator the contract for which was due to expire in 2019. There was also potential to utilise heat produced from 10 MW waste wood biomass power plant which supplied manufacturing on the Tyseley site. How, if at all, this proposed extension would integrate with the existing city centre networks (operated under a long term concession contract with Engie Ltd) had not been resolved at the time of our interview. However, Simon emphasised that a review of a project of this scale was to be expected:

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<sup>42</sup> Tyseley Energy Park was a relatively new renewal of an old industrial area.



you'd expect that we'd be called in and scrutinised and told to explain exactly why these things are a good idea. When we go we expect that they'll be looking at the minutiae to the big overarching outcomes. [...] They always like to scrutinise the financial, the legal and commercial.

Simon, Birmingham City Council

As Simon pointed out, the focus on the review would be about the financial, legal and commercial issues. Conversely, carbon saving or clean energy were not noted as significant. Hannah (Bath) agreed, but expanded that the internal Scrutiny Committee 'called in' projects for different reasons. Hannah explained that following a change in administration from Liberal Democrat to Conservative, the Scrutiny Committee reviewed the decision to co-finance the 2.34 MW Wilmington Solar Farm (alongside a member share offer) through a loan to Bath and West Community Energy, a community benefit society. The review considered whether onward lending represented value for money, as well as dealing with queries about State Aid<sup>43</sup>. But it also provided a route to discharge political opposition to the solar farm. In particular, the new Scrutiny Committee included opponents to onshore renewables in rural Bath and North East Somerset. Thus, although the energy project had represented 'best value' to the council under one political party, this was not set in stone. Within formal channels that were notionally about ensuring councils incorporated the Best Value Framework, the incoming administration had the opportunity to attempt to destabilise subsequent development of the energy project under the same procedure. This provides an example of the potential destructiveness of such a fluid and slippery boundary object as Best Value; there was scope to attempt to disassemble the value of the energy project.

### **Preparing the report: negotiation and translation**

The programme of governing built around the Best Value Framework in the council system of accountability is enacted through Executive and Committee meetings and formal reports which are submitted for approval. These reports

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<sup>43</sup> State Aid is where there is potential for public funds to distort market competition.

varied, depending on the stage of the project, but they explain what decision is being made, why and detail the relevant underpinning evidence. For example, a report could be detailing the resources needed to further develop a project, an update/review on progress, approval of capital investment, approval of a formal business case, or award of a major procurement contract (sometimes with the status of a Key Decision, see Chapter 5). Council decision making which these reports feed into, and the review and scrutiny function described above, form an important element in satisfying the requirement that councils ensure decisions are underpinned by Best Value procedures. Small areas of interpretative flexibility existed within the preparation of these reports for submission. Officers attempted to exploit these opportunities to progress energy projects through this formalised process.

The standardised process entailed completing a formal report template. Where the project was at a stage involving allocation of resources, the evidence used included assessing different options for the energy project, such as different business and ownership models against a do-nothing situation. A preferred option needed to be presented, and justified as to how it met project objectives. Options appraisal and financial due diligence emerged as particularly significant to demonstrating this. Some form of options appraisal or business case evaluation was typically used to meet this requirement.

Officers accounts revealed that considerable negotiation and 'translating' work was fundamental to the procedural system that governed report preparation. A formal step here was securing sign-off from various council departments on the content of the document. Officers in Derby, Fife, Leicester and Swansea explained how different departments were responsible for documenting the expected 'implications' arising from the project proposal. As Chris (Leicester) put it, *"there's a range of people that*

would feed into these [reports ...] There'll be comments on finance... from legal... there will be any other implications which pull in a range of comments on that particular scheme." 'Implications' were grouped into sub-sections spanning finance, legal, personnel, equalities, ICT, health and safety, and in some cases environmental sustainability (with slight variation depending on the council/project). Each sub-section was completed and signed off by the department responsible. Sandra (Swansea) made the point that this was "a standard process" that applied to every report.

To progress the report through decision making channels, different actors across the council therefore needed to converge. The interactions between project officers, and Finance and Legal teams in this valuation practice were pivotal. Sign-off from these teams was a fixed requirement, with little flexibility or option for divergence. As John (Derby) stated, "*So on that report [for Ram Energy] you **have** to see that Legal have signed it off for it to go through*". Charles (Fife) similarly noted the significance of Finance colleagues, "*the finance professional **has** to say, 'I believe this will work.' So they have to trust what they see in front of them*". Within the confines of this valuation practice, constituting that the energy project demonstrated 'best value' was dependent on the success of this specific internal collaboration. "*For a report to go through for consideration [by Council Cabinet], there won't be any disagreement. The disagreement will happen before it goes through*" (John, Derby). Legal and Finance teams were thus key gatekeepers in defining that an energy project provided 'best value' to the council.

Although securing sign-off from Legal and Finance departments was a standard step, it was not straightforward or predictable. Interviewees' accounts (including in Cambridgeshire, Derby, Hull, Fife, Leeds and a Welsh intermediary agency) illustrated that this process of value-making was reliant on relationships across council departments, and officers' interpersonal skills. However, this also depended on the level of knowledge about local energy

among colleagues in Legal and Finance teams, and their preconceptions about the value of a local authority energy project. The lack of direct statutory function meant local energy had no central legitimacy, and as a result, Legal and Finance departments were typically not familiar with the intricacies of energy initiatives.

Securing commitment from Finance and Legal involved answering questions, considering their comments, and revising the proposal iteratively before the final sign-off. At each stage, the energy project and how it demonstrated 'best value' was open to negotiation and change. A key aspect was understanding why the specified recommendation was being made. Depending on the outcome of these negotiations, proposals either incorporated comments and were submitted, or required revision to secure sign-off. Where this valuation practice failed, energy projects were prevented from going forward in their development. In this way, energy projects were shaped by the cross-council assembly of formal valuations.

Energy officers therefore needed to ensure there was enough 'translation' so that Finance colleagues understood the value of the energy project. Issues were particularly acute in unfamiliar or 'novel' projects. A specific area of tension in energy performance contracting projects was the 'guaranteed savings' contract structure. This is a core aspect of the council contract with the energy services company that underwrites a specified level of savings from retrofit of council buildings (see Chapter 5, Section 5.3). Darren (Hull) and Daniel (Cardiff) both identified that Finance colleagues were unfamiliar with this contract structure. A key task to securing sign-off on the report was to spend time explaining how the contract worked in more detail:

Politically there was a buy in to Re:fit [the energy performance contract] but... some parts of Finance wanted more reassurance that we actually were going to be able to deliver the energy savings that were guaranteed. [...] So we've had to work quite hard in terms of showing how the [contract] works. That the guarantee is a solid thing.

Darren, Kingston upon Hull City Council

All the energy performance contracting projects in this sample were a first for the respective councils. Prior knowledge, or lack thereof, was thus at least part of the explanation for the understandable lack of knowledge about the financial and legal arrangements. This is explored further in Chapter 9.

Similarly this applied to other types of projects that were new to individual councils. John (Derby) for instance emphasised there was initial uncertainty from Legal colleagues over supporting Ram Energy, which was a project to set up a local energy tariff. Having researched different options, John recommended in the report the use of a white label approach that partnered with a not-for-profit municipal energy supplier (Robin Hood Energy Ltd).

Under a white label arrangement, a local tariff is offered to a specified area (i.e. Derbyshire) or group of people (such as social housing tenants) and an existing licensed energy retail company is used to provide the back office functions and comply with licensed energy supply regulations. Being unfamiliar with the regulatory differences between types of energy tariffs and supply companies, Legal colleagues originally thought the council would need to obtain licenses from Ofgem and were unsure about supporting the proposal. Following some discussion between John and his colleague, and confirmation from Robin Hood Energy that they had the necessary licenses and regulatory approval, the Legal team signed off on the report and it was submitted. Securing collective agreement on the recommended approach, here a white label initiative, was thus significant to material development of the project. The recommendation which is supported as a demonstration of 'best value' to the council, simultaneously represents a judgement about which local energy governance and organisation model is most suitable.

Where the concerns of Finance and Legal teams were unresolved and they decided not to support the proposal, this stopped the valuation practice, and the project, all together. As Sandra (Swansea) stated, *“if they feel that the risk is too great, they won’t move it forward”*. The entire internal procedure intended to ensure that ‘best value’ is secured to the council could therefore by default prevent energy projects ever getting beyond initial development stages.

The process prior to submission was hence a crucial point which aimed to establish consensus on the direction of the project. Rob (Calderdale) emphasised that, given the lack of a ‘corporate agenda’ for local energy, he could not *“necessarily expect”* legal personnel to assist in developing project proposals or documentation for formal valuations. Grace, who worked in an intermediary role supporting Welsh local authorities to develop energy programmes on their own estates, elaborated. Grace noted that Finance Departments she worked with had limited reference points over the value of local authority involvement, and were generally not familiar with reviewing energy project proposals. Insufficient ‘translation’ work had been done to overcome this and make opportunities more acceptable to Finance teams.

Council [X] could be saving £2million [on the corporate estate through energy retrofit [...] We identified the asset savings, and they still haven’t managed to implement it yet [...] They have a risk averse Finance team because people haven’t understood the opportunity. No one has translated the report into something that Finance can understand.

Grace, Welsh Intermediary Agency

As a result, instead of developing the report provided by Grace’s organisation into a formal document for approval, progress on the entire project of upgrading council buildings had stalled. The programme of governing built around the Best Value Framework can thwart an energy project from going ahead. The justificatory activity involved in demonstrating ‘best value’

through formal valuation channels was demanding for an energy project, given the lack of necessary expertise in the council.

### **Preparing the report: co-creation and collaboration**

Securing the support of other departments thus involved a degree of creative thinking. Progressing through this critical juncture was often reliant on a willingness to adopt a collaborative approach between project officers and Finance teams. The cases of Leeds, Fife and Cambridgeshire exemplify how the combined authority of the respective specialisms underpinned the preferred approach for the energy project recommended in the report.

In Leeds, the team responsible for leading development of the city centre heat network was located within the Projects, Programmes and Procurement Unit that developed major capital schemes. For the heat network, skills and knowledge within the Unit included technical energy expertise, but also project accountants and solicitors experienced in large scale private finance initiatives, financial modelling, contractual issues and risk mitigation. The heat network business case was based on council ownership and part-financing through prudential borrowing, alongside grant and housing revenue account budget.

Approval needed to be secured from the Executive Board to access around £14 million of prudential borrowing from the PWLB. For this, the Unit relied on expertise in Corporate Finance, who emerged as a particularly critical actor. Peter emphasised that Corporate Finance's experience in capital borrowing provided a reference point for financing the heat network which translated the 'novel' heat network project into something more familiar. The Corporate Finance team had *"been surprisingly relaxed, even when we highlighted all the risks"* (Peter, Leeds). In turn, the Corporate Finance team helped Peter with the crucial tasks of building the business case and preparing the report. Peter stated that, *"they've been very able to help us to*

*get the paper to the Executive Board to get the borrowing approved [... they] help[ed] build the business case in the right way to secure prudential borrowing*". The skills, expertise and willingness of finance officers were thus critical to demonstrating that the heat network project could be evaluated within the formal confines of the procedures governing the operation of the Best Value Framework in council decision making.

In Fife, to secure sign-off from Finance and in turn senior management, energy officers started working more closely with finance colleagues on preparing the reports. This first emerged because the Energy team had exhausted most of the 'easier' energy projects (these were routinely included for approval as part of the capital expenditure programme, with a payback of under five years). Projects no longer fitted this criterion and the Energy team's request for capital funds faced opposition from Finance, who operated as gatekeepers.

Charles' (Fife) account emphasised that the Energy team's limited ability to write the report in "*finance speak*" prevented projects moving forward. Thus, the problem was not the energy projects *per se*, but rather the associated material that was not interpretable to Finance. In response, the Energy team devised a valuation practice which included a collaborative process of 'translation'. This involved co-producing the documentation with an accountant, Sally, to ensure that the material would be convincing to the Finance approval group.

Charles noted that this process sought to share ownership of the project across Energy, Finance and Management. Importantly, this collaborative process created a route for the Finance team to understand the value of the Energy team (as opposed to the project *per se*), and their expertise in local energy. Charles (Fife) described this as helping the accountant understand that energy projects were underpinned by the "*skills and profession... and*



*expertise*” of Ed, the Energy Manager. This assured Sally, the finance expert, that Ed, the energy expert, “*understand[s] what the measures [a]re and understand[s] the risks in that process*” (Charles, Fife). With an improved understanding about the energy knowledge and expertise that underpinned the projects being proposed, Sally then translated this into the report and explained it to Finance managers. In turn, this provided Finance with confidence that the proposals and associated risks had been fully understood and evaluated by the Energy team. Critically, without this translation work, it was not possible to assemble the value of energy projects within the formalised system of approval.

In Cambridgeshire, the council’s Mobilising Local Energy Investment project (MLEI, 2012-2016) was funded through Intelligent Energy Europe. As part of this, the council was awarded a ‘technical assistance’ grant to fund an in-house team to deliver a programme of local energy investment<sup>44</sup>. This had a minimum capital expenditure value of £15 million. Cambridgeshire had chosen to develop a large scale 12 MW solar farm and retrofit county council buildings through an EPC. PWLB borrowing financed the individual projects. Approval required preparing documentation for the Finances and Resources Committee. Sharon, who led the team was, like Charles (Fife) above, reliant on the expertise of a council accountant to help prepare the documentation.

However, the first attempt at the necessary inter-departmental collaboration was a failure. This prevented development of the funding model that would allow the efficiency improvements to be made on the corporate estate. Subsequently, the Finance Director agreed to change the accountant working with Sharon. The new accountant, Thomas, created a cash flow model over a 15 year loan that would enable the EPC project to be rolled out

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<sup>44</sup> The programme in Oxford was funded under the same MLEI programme; in the sample, larger programmes were delivered in Bristol and Manchester as part of the Elena programme delivered through the European Investment Bank (see Tingey & Webb, 2020b).

across the schools estate. They also worked on an off-balance sheet to satisfy the funding conditions of academy schools in England. Similar to the Fife case, Thomas was able use his relationships within Finance to gauge support from the Director for the financing structure that was being developed. He also directly helped prepare the formal report for the Committee. Sharon explained how this opened up a route to ensuring the energy project report conformed to the decision making process:

the Finance Director helped by moving in a group accountant [Thomas] who was, 'we can do this, this is how we do it. OK, there's a bit of risk, let's manage that.' And [that] just transformed how we could all bring in the multi-disciplinary set of skills to make it happen and do it.

Sharon, Cambridgeshire County Council

In a further step, both Sharon and Thomas attended the Finance and Resources Committee together, and respectively answered questions about the project and its funding. Significantly, this demonstrated the authority and expertise behind the energy proposal. As Sharon's words explain:

when you're leading a project you can't be expert in everything [...] one of the best things is when an expert is willing to put themselves next to you. [...] Thomas]... sat with me [at the committee meeting] and when people were giving finance questions [...] he took them. And he came across with authority... If I'd been on my own [...] I don't know how I would have dealt with [those questions], which might have put an uncertainty in member's minds.

Sharon, Cambridgeshire County Council

Collaboration within this formal valuation system was thus a critical juncture that secured the sign-off of the borrowing and the overall project structure. The report's function satisfied the requirement that councils underpin decisions with Best Value procedures. Without this, the pipeline of project investments being developed by the energy team would have stopped, at least until an alternative funding route was found, but potentially all together. As this case in particular emphasises, the willingness of an individual officer – here an accountant – to understand a novel energy initiative and help create a solution was critical to the project successfully getting through the decision making procedures in the council. This case also highlighted that

this was down to chance; the first attempt failed, and it was dependent on the availability of a second accountant to step into this joint valuation practice. The ability for an energy project to be made commensurate within the report thus relied on a high degree of serendipity. As such, this suggests it is unlikely that energy projects are routinely translated into the formal requirement to demonstrate 'best value' in procedural terms.

## **7.4 Conclusion: making sense of the Best Value Framework and local energy**

In this chapter, I aimed to uncover what happened to the negotiation of value as the energy project was made the subject of the Best Value Framework. The analysis was built on the conjecture that local authorities' routine and everyday 'valuation practices' are developed around, and in response to, a 'programme of governing'. The Best Value Framework is one such attempt within this programme of governing to control the actions and agency of local authorities.

Guidelines discussed in Chapter 6 explain that council duties for securing 'best value' in local services combine an uneasy mix of both narrower value for money concepts associated with public sector efficiency, and broader notions of social value, environment and sustainability. As a valuation practice, findings reveal much of what was practiced in relation to the Best Value Framework was narrowly constituted as procedural accountability: the mechanisms in place that enabled a local authority to *demonstrate* that their decision making processes were aligned with 'value for money'. Within procedural accountability, the broader value concepts of social and environmental value were not routinely stabilised.

These findings provide new depth about the extension of a programme of neo-liberal governing through formal tools and procedures, and its effects on local energy. First, findings illustrate that as a framing device, the entire

decision making process in local government that this chapter examined – the preparation of reports, the sign-off from different council departments, formal approval from decision making bodies, audit and scrutiny of decisions – pursued a restricted enactment of the Best Value Framework, closely tied to the extension of value for money. The energy project in turn needed to be made calculable and representable within these valuation practices. This translated the assembly of value in an energy project primarily into a technocratic process which functioned to show ‘correct’ decision making principles had been incorporated, in particular options appraisal and financial due diligence.

This provides evidence in support of the argument that such procedural accountability enacts and extends “historically specific modes of power” (Miller, 2008, p. 57). In this instance, they brought into being notions of value for money in public spending, rather than the material substance of the project in terms of energy or carbon saving, or the wider value concepts which the Best Value Framework supposedly includes. Despite the fact that some officers interpreted project objectives about energy, carbon and social values in relation to what constituted ‘best value’, energy and carbon saving were essentially irrelevant to this procedural valuation practice. The valuation practices that satisfied the Best Value Framework were not, therefore, those which delivered carbon saving or clean energy. Consequently, it is important to question the suitability of framing devices such as Best Value for delivering local energy projects.

Nevertheless, findings illustrated officers’ subtle and complex understandings of the value for money concept. It was interpreted in relation to the energy project in hand, and the skills, expertise and capacity to deliver it. Particularly, this related to the diversion of limited resources to more complex, large scale and multi-actor energy projects. This was often at the expense of progressing on more manageable and deliverable small scale

corporate estate projects. Furthermore, the lack of necessary legal and financing expertise for energy projects was raised. This suggested limited capacity for councils to pursue more complex energy projects with unfamiliar political, technical and financial risks. Discussions focussed on whether devoting officer time and council resources to such developments were good uses of public money. The lack of a statutory mandate for energy and the mounting pressures of austerity exacerbated these issues.

Additionally, findings provide new evidence about the status of expertise and the necessary cross-council collaboration required to underpin energy project valuations. It was critical that valuations could defend that multiple voices across the council – notably, Legal and Finance teams – had been consulted and agreed on the proposed approach for the energy project. These teams were integral elements to showing the authority of knowledge and expertise that sat behind the energy project. If the energy project could not fit and conform to these established procedures, evidence showed they could stall at this juncture. ‘Co-producing’ energy projects with Finance teams emerged as a successful tactic which officers deployed to assemble the actor-network required. The status of expertise, or types of knowledge, therefore matters to valuations. Importantly, not all forms of expertise appear equal. Energy expertise, on its own, did not appear sufficient to progress an energy project through the formal decision making procedures.

This chapter has tracked the energy project as it became entangled with the Best Value Framework. Formal decision making procedures which enact this were primarily focussed on the public sector concept of value for money. This was generally reduced to financial value within the procedural system of decision making (although some officers had more nuanced views), and largely edited energy and carbon saving out of valuation practices. Beyond these formalised procedures, this chapter also reported findings about how officers actually interpreted ‘best value’ in a local energy project. This

concluded that some officers linked what constituted 'best value' in an energy project in relation to its business case, especially financial affordability and whether a project could cover borrowing costs. Additionally, what substantiated 'best value' was determined through public procurement and the responses from bidders. The next two chapters respectively build on each of these points. Chapter 8, which directly follows, considers the 'business case' in more detail. Analysis asks what this object is, examines the influence of financial value in shaping investment decisions, and considers what impact this has on the scale and scope of local energy projects.



## 8 The Business Case and Assembling the Value of Local Energy

### 8.1 Introduction

The previous chapter identified that some form of ‘business case’ was variously implicated in satisfying the procedural requirements of the Best Value Framework. Building on that, my aims in this chapter are to examine how local authorities are assessing options for energy investment through development of a business case, and explore the contested valuation practices surrounding it. The remainder of the Introduction reprises key points about the business case model depicted in guidelines. I also elaborate on the concept of economisation, which plays a more prominent role in the analysis of energy project valuation practices in this chapter. What follows is a qualitative examination into negotiating value, as the business case is brought into being and the energy project is made commensurate with it.

Chapter 6 argued that the business case is a significant and consequential valuation framework. Across guidelines, the business case is recommended as the ‘correct’ options appraisal tool for assessing new programmes and projects, including capital investment projects. The UK Treasury’s *Green Book* develops the ‘five case model’, which involves constructing and assessing the strategic, economic, commercial, financial and management case. This is proposed to take place over three phases of project development: at scoping stage (strategic business case), prior to procurement (outline business case), and prior to awarding contracts (full business case).

Of particular relevance to this chapter is the *Green Book*’s method for constructing the economic case. This involves calculating ‘net present value’,



which intends to assess the socio-economic value of options in relation to their net benefits to society. Guidelines argue calculating a net present value figure is *the* optimal way of measuring benefits to society. Consequently, guidelines strongly advocate that decision makers use the highest net present value figure to decide how to proceed. By attempting to standardise the representation of value, the business case therefore has considerable potential to influence decisions about whether to proceed with an energy project, its structure and finance. However, evaluation of the actual use of the business case reported mixed findings in how it was adopted among local authorities (see Chapter 6). This invites an investigation into what assembly of the business case actually entails.

To explore this further, in this chapter I draw more centrally on the concept of 'economisation' (Çalışkan & Callon, 2009; 2010) to conceptualise the business case as a valuation practice. Economisation suggests a particular pervasiveness of economic rationales in valuations using frameworks such as the business case. Callon (2007) uses the term 'economics in the wild', to denote valuation frameworks in a broad range of different settings and contexts that are involved in the calculation and rendering of economic value. In a local authority context, the calculation and measurements associated with the business case are a form of economics in the wild. It is not a setting of economic science, or the formal application of a finance theory, but rather an organisational context drawing on a set of tools to create an assessment of an energy project's value. According to this perspective, business case assessments are likely to conform to economic definitions.

I use this to interrogate how forms of economic and financial value shape the assessment of options for investing in a local energy project, and how this restricts other forms of social and environmental value, and public goods. In Section 8.2, I explore the construction of the energy project business case, emphasising how contra to guidelines, it resists conforming to a single stable

definition. Section 8.3 considers how the energy project business case is actually assessed. This explores the influence of wider organisational pressures in restricting the inclusion of socio-economic and low carbon values in business case valuations. Section 8.4 explores how short-term financial pressures were mediated and contested. This identifies how some local officials have wrestled with these tensions and attempted to institutionalise local energy through the creative use of the business case. Section 8.5 discusses the struggles in translating the value of local energy initiatives into a 'viable' business case for investment.

## **8.2 Constructing an energy project business case**

In contrast to the standardised object described in the guidelines, this empirical investigation into the process of constructing a business case revealed a variety of approaches. Reflecting a high degree of interpretative flexibility, I observed seven different energy project business case assembly processes. Practices spanned instances when no formal business case was put together, through to extensive business case development. The influence of local standards and norms, and specific tailored approaches that responded to the financial arrangements of an individual energy project were key themes. Table 8.1 summarises the seven approaches.

Table 8.1 Seven different business case assembly processes

<b>Projects subject to business case formalities</b>		
<b>Business Case Assembly Process</b>	<b>Description</b>	<b>Energy projects &amp; capex range</b>
Akin to 5 case model	Assembly process follows iterations of techno-economic feasibility studies & business case development, generally following outline, strategic to full business case <sup>1</sup> . Process can take several years for large scale projects. Often to draws on external consultancy and legal expertise.	District energy, under £5m-£20m+
Technical assistance model	Similar to above, with additional requirements: IEE MLEI & EIB Elena programmes <sup>2</sup> investment targets requiring extensive business case development & monitoring for individual projects to ensure the investment target is met.	District energy, EPCs, domestic retrofit, solar PV, hydropower, Leverage targets range £15-£30m
Finance department-led model	Devised approaches prioritise different elements of the financial case of a project, such as cash flow models.	LED street lighting, solar PV, EPCs, under £1m-£25m
Onward lending model	Project involves onward lending &/or investing directly in community owned scheme. Due diligence & compliance with State Aid shape extensive scrutiny of financial case within business case evaluation & use of legal expertise.	Solar PV, under £1m-£10m
Carbon reduction plan model	Individual business cases which assess factors such as payback, KPIs & carbon reduction. Projects funded through spend-to-save criteria from internal climate change budgets.	Corporate estate EE & onsite gen, under £1m
<b>Projects largely avoiding business case formalities</b>		
Light touch model	Similar to Carbon reduction plan model in terms of using spend-to-save criteria of capital cost & payback as main evaluation factors, but distinct in that officers specifically noted that this was not a business case evaluation.	Corporate estate EE & onsite gen, under £1m
No direct business case model <i>per se</i>	Energy projects reported under different functions without formal use of business case.	Domestic retrofit, district energy, CHP, solar PV, biomass boilers, under £1m-15m

<sup>1</sup> May not include all 5 cases, or all 3 stages.

<sup>2</sup> These were European technical assistance 'Elena' and 'MLEI' programmes where an investment target must be met.

As Table 8.1 shows, district energy projects in particular shared much more extensive, and often iterative techno-economic feasibility studies and business case development. The latter sometimes took place over several years with multiple iterations following the more prescriptive progression through strategic, outline and full business case processes associated with the recommended 'five case model', such as in Enfield. For instance, calculation of net present value was commonly included.

The 'five case model' however emerged as a narrow definition of what constituted a business case assembly process. The six alternative valuation practices (identified in Table 8.1) illustrated quite extreme levels of interpretative flexibility. In the technical assistance model, grant funding paid for a 'project development unit' in the local authority to develop a pipeline of local energy projects. Grant conditions required meeting a specified investment target (in Bristol, Cambridgeshire, Manchester, Oxford). If the target is missed, the local authority is liable to repay some of the grant. In response, there was a high level of business case development for the project pipelines to meet the target. Sometimes, but not always, this involved calculating a net present value; for example, in energy performance contracting it was typical to consider costs and payback, but not generate a net present value. In contrast to both of these approaches, the finance department-led model had more focus on structuring project financing to cover borrowing and secure cash flows. For example, street lighting and corporate estate projects in Warrington and Peterborough used different accounting devices to manage this. This is explored further in Section 8.4. Hence assembly of the business case was shaped by project specific factors and did not conform to the narrower definitions set out in guidelines.

Illustrating further interpretative flexibility, projects involving onward lending required that the business case incorporate due diligence and demonstration of compliance with State Aid. For example, in Bath and North East Somerset

Council, the business case process for the Wilmington Farm solar project had additional requirements because it involved onward lending to Bath and West Community Energy (BWCE) who were the official project owner. As a result of having established a cooperation agreement with BWCE, the Council intended to provide a £500,000 loan from their Green Investment and Jobs Fund, as partial financing alongside a member share offer. This led to a series of tailored valuation practices in assembly of the business case. First, the sustainability team *“had to really demonstrate that the finances stacked up”* (Hannah, Bath), which led to a greater degree of coordination with finance than normal, as well as presenting the business case to senior managers. Second, compliance with State Aid meant the business case represented what Hannah termed *“a whole burden of proof”*, that resulted in a back-and-forth process with external financial and legal advisors in order to understand how to meet the requirements.

on the State Aid question, we went round on that for a little while, thinking that we didn't need to worry about it, then finding that we did. That was, 'Are we offering a market advantage in terms of offering a particularly low interest rate?' We had to demonstrate that the rate we were offering, which I believe was 6% was comparable to the market. That is a hard case to make because the case we made for giving them a loan in the first place was that they couldn't get this sort of money from the bank.

Hannah, Bath & North East Somerset Council

Hannah characterised this complex procedure as *“much more formal as a process”* than for many other projects undertaken by the sustainability team. For most energy projects *“saying business case maybe makes it a bit more formal than it is. It's more like we would put a case, so we would make the argument”*. It thus went beyond the more informal development which characterised many other energy initiatives Hannah's team worked on, and illustrates how the business case in practice is much more open to interpretation than suggested by guidelines.

Less extensive business case assembly processes were associated with the carbon reduction plan model, whilst the light touch and no direct business

case models both largely avoided the formalities of business case assembly altogether. Generally, but not exclusively, these were all associated with smaller scale corporate estate energy projects funded through internal climate change or carbon reduction funds of around £1 million. These funded projects were on a 'spend-to-save' basis where financial saving and/or income generation accrued from the project covers or exceeds its capital outlay.

In the carbon reduction plan model the construction of a business case was used for individual projects. For example, an internal revolving Climate Change Fund (around £1 million) in Cambridge City Council was used for corporate estate carbon reduction projects. Rebecca noted the key aspects that the individual business cases focussed on, stating, "*[Projects] were all put forward and the business cases were developed for each of the projects that started to identify some of those key performance measures and the payback and the carbon reduction.*" Depending on the complexity of the project and the amount of Climate Change Fund budget a project would require, business case assessment also variously incorporated initial desktop assessment (i.e. small feasibility studies), risk registers, and named project leads.

In the light touch model there were some similarities, namely the use of examining costs and payback. The main difference was that these valuation practices were not reliant on the use of a business case for individual corporate estate energy projects. As a result, even projects with similar characteristics were developed with different valuation practices. For instance, Chris (Leicester) highlighted this lighter touch approach, noting key questions about financial costs and carbon saving for individual projects, "*does it stack up financially, does it reduce carbon? You know, it ticks those particular boxes so go ahead and invest in it. I don't think there's anything more that really features*". This light touch model was thus a relatively

straightforward approval process for small scale carbon reduction projects on the corporate estate. After a small assessment these could go ahead, as long as they were within budget.

Finally some established procedures negated the use of formalised business cases of any kind. This was for councils' carbon management plan projects, which also used internal carbon and climate change budgets (i.e. same funding approach as previous two models discussed), and for grant funded domestic energy efficiency and district heating. An example of the former comes from Jason (Aberdeenshire), who emphasised that because the annual Carbon Reduction Budget (around £500,000 – £1million per annum) was already established, projects were reported against the budget, rather than undergoing individual business case assessment. James stated, "*There isn't a business case to develop [for these projects] because they're just reported to committee as the delivery of that budget*". Again, this reinforces that projects with similar characteristics were subjected to different business case assembly processes.

Dundee's council-owned and operated district heating network and external insulation project also fell within established procedures, here reporting to the Housing Committee. The heat network served c.1,100 social housing properties (primarily multi-storey with some low risk blocks) and was mostly externally funded from Energy Company Obligation financing (via British Gas), with limited Council capital investment from the housing programme and a government grant.

The Dundee case serves to further illustrate the high level of interpretative flexibility in how to apply the business case device, if at all. Dundee adopted an "*opportunistic*" and "*evolving*" (Alison, Dundee) process of project development without a 'formal' business case evaluation. Scottish Quality Housing Standards and alleviating fuel poverty initially drove Dundee's

exploration of different funding routes suited to district heating and insulation measures, which were preferred to straight renewal of electric storage heating. Alison described this process as the “*opportunistic grabbing of available external funding [... to] put multiple measures in*”, where identifying an energy supplier who was willing to work with them “*almost evolved to a conversation of, ‘This is the stock we’ve got, we don’t know what to do. On their side this is the funding they’ve got, what can we do?’*” Having identified the potential partnership with a willing supplier, a report, but not a business case, was provided to the Housing Committee because there was some financial input from the Council’s housing budget.

there’s was no formal VFM [value for money] exercise or anything like that [...] if we were going to a more formal procurement route those sort of considerations would come into it, and these kind of [business case] exercises, a bit more formal, financial modelling and such like. But no... although it was a multi-million pound contract, it was slightly more informal.

Alison, Dundee City Council

In Alison’s own words this process was “*more informal*” than it might be in other energy projects. Under the surface this emphasises the adaptability of the business case ‘stage’ in an energy project. Alison’s account also alludes to the relationship between demonstration of value for money – a key issue to local authority valuations raised in Chapter 7 – and procurement. This is explored in more detail in Chapter 9.

Starting with the energy project and not the guidelines uncovers considerable diversity in what actually constitutes the business case. What is shown most clearly is that the ‘five case model’ promoted in government guidelines fails to capture the diversity of what ‘users’ of the business case device actually do.

Generally business case development, of any type observed, was more prominent in larger projects. But as we have seen, what this amounted to was noticeably varied. The business case device was thus not clear cut,



having no stable form across the local authorities. Instead, as a valuation practice, the process of constructing the business case was open to customisation and resisted conforming to a single definition. As a result of this, despite efforts to govern decision making, council valuation practices resist conforming. This serves to illustrate the limits of the programme of governing, as exercised through this valuation framework.

In particular, business case valuations illustrated finitism in the interpretation of rules. They relied on high levels of user discretion and interpretation. Examples of this included the seven different types of business case assembly process, as well as the fact that officers noted nuanced modifications to their own established business case development processes for individual projects. The process was open to a high degree of tailoring for the project in question and depended on user discretion and judgement.

Taking assembly of the business case as a valuation practice therefore leads to considerable problematisation of what constitutes the 'business case' in an energy project. It strongly implies the 'stage' of a business case in the energy project is more complicated than it first appears, and that this is poorly captured in guidelines. Given these findings, it also suggests that assessment of the business case is unlikely to utilise the NPV approach recommended in 'five case model' guidelines. The next section considers how decision makers actually assess the energy project 'business case', however it has been assembled.

### **8.3 Assessing the energy project business case: money talks**

The narratives presented in guidelines concerning both the business case and the Best Value Framework promote the idea that councils should be able to incorporate multiple forms of value when assessing energy projects. Asking officers about investment decisions showed that reality contrasted

with the suggested implementation of the business case device. A central theme was a continual marginalisation of non-financial objectives at the point of the business case investment decision. This is an instance of economisation: despite the prominence of carbon saving, environmental and socio-economic objectives in shaping the original rationale, non-financial value was squeezed out of decision making.

Both questionnaire and interview data identified a variety of social, environmental and local economic values that motivated development of energy initiatives. In the questionnaire, 36 respondents answered a multiple choice question about energy project objectives. The most frequently selected objectives, where over half of respondents chose these options, were carbon reduction (29 responses), energy resilience (23), reducing energy demand and affordable warmth (both 19). Officers consistently reinforced and elaborated on this during interview, describing numerous non-financial objectives and benefits across multiple types of projects. For example, for the phased development of the Energetik district energy network, William (Enfield) raised multiple benefits which were expected to accrue locally:

there's some huge benefits, fuel poverty, local air quality – especially in London which is a huge issue – so at Meridian Water [the new housing development] you won't be needing any individual gas boilers. [...]. Obviously the carbon reduction, the regeneration and investment [...] certainly the feeling is that there's so much local benefit to be had that it's well worth doing [... And] there'll be certain jobs that could definitely match capabilities. I think, well, harness that.

William, London Borough of Enfield

Energy projects were thus commonly framed in terms of 'multiple benefits' (including fuel poverty, carbon reduction, air quality and local economic activity). For example, Andrew (Gateshead) raised how multiple local economic objectives shaped the council's interest in pursuing energy projects, particularly regeneration, local business activity and supporting developers. Similarly, Rebecca (Bath) emphasised the contribution to

improved health, amelioration of fuel poverty, community resilience and carbon saving. Ben (Manchester) described the inter-connections between local energy and the overall health, well-being and prosperity of local residents. Paul (Greater Manchester Combined Authority) emphasised that as a public sector organisation, financial value was not the primary objective. He stated, *“with a public sector outlook as opposed to a private sector outlook [...] it’s about why there’s a benefit to GM [Greater Manchester], the community, the workforce... rather than, ‘How much money can you make me and how much money can you bring in?’”* This opinion was shared by others, such as David (Newcastle) who pointed toward fairness and equity.

Affordable heat was important to many councils developing heat networks that serve local residents (such as Aberdeen, Camden, Dundee, Enfield, Leeds and Islington). For example, Emily (Islington) discussed social value in terms of securing an affordable heat price for their social housing residents. This was one of the central purposes of the local authority owned and run Bunhill district energy network.

the heat price for our residents is the overall objective. [...] We are delivering cheaper heat than large-scale gas boilers on a commercial tariff. [...] Now] it’s about trying to expand it [to other residents] to provide that benefit. The administration has a very clear objective around fairness, particularly for the most vulnerable, the poorest residents.

Emily, London Borough of Islington

Expanding the heat network was thus a key priority in order to benefit a greater number of residents. Action on climate change also emerged as significant. John (Derby) pointed out that the council’s climate change programme in the mid 2000s was the central rationale for developing their hydropower project on the River Derwent, stating, *“the whole premise of the hydro was really clearly justified by being part and parcel of the council’s climate change agenda.”*

However, business case investment decisions were not at all adept at incorporating these wide ranging motivations. Instead, there was a narrowing toward financial value, where questions of affordability were heavily prioritised. This was particularly associated with austerity budgets and cost pressures.

John (Derby) for example, noted that climate change and carbon saving objectives *“just don’t register anymore [...] really would not carry much weight at all now”*. Angela (Bristol), Daniel (Cardiff), Karen (Exeter) and Andrew (Gateshead) all agreed. Andrew explained the shift toward financial value, *“being honest, the financial case is the driver [...] five years ago it was a very different place in public sector and it was all about the environmental and the carbon saving [...] finance and income is key now”*. Andrew’s account emphasised that austerity was a key factor that had changed how energy project business cases were assessed. Andrew explained that there had been some scope for energy projects to receive cross-subsidisation from council budgets prior to about 2010. Subsequently, projects’ business cases were required to stand as an independent financial case capable of covering borrowing costs, and preferably also generating a surplus income.

This was a shared perspective across the cases, with interviewees consistently noting that cost pressures meant decision makers were zeroing in on affordability criteria in assessment of the business case. As captured by Jason (Aberdeenshire) who explained that, *“Councils have now got cuts to make and savings to make and other issues. [...] In reality it will come down to what the council feel they can afford to do”*. Questions of affordability also emerged in the form of general risk aversion:

Because of the resource issue that we've got in the council, there's risk adversity, there's all sort of debates about, 'Can we actually afford to do this in the first place?'

Daniel, City of Cardiff Council

[We're] becoming increasingly risk averse because of the financial difficulties that we've got. [...] a lot of projects are being heavily scrutinised and [...] I think it's just in general indicative of the way the councils are going, kind of what their appetite for risk is.

Simon, Birmingham City Council

As a valuation framework, the business case could thus be reduced to a financial decision making tool. Council decision makers were a critical 'user' of the energy project business case, and were negotiating investment options in the context of considerable budget pressures and competing priorities. As this shows, tensions stemming from austerity were influencing these instances of economisation.

However, how this form of economisation unfolded varied. Reliance on financial valuation materialised along a continuum, as the following examples illustrate. For some, there was a prioritisation of cost but not at the total exclusion of carbon saving. *"Mostly the council would look at it from the financial aspect of it but secondarily maybe they'd look at it from the carbon aspect. Maybe that's the wrong way to do it but obviously cost is more important to the council"* (Colin, Derry City and Strabane). Colin's discussion of cost as *"obviously... more important"* illustrates how carbon saving was poorly integrated into the business case evaluation by comparison.

This was further reinforced by Sophie (Leicestershire) who described how financial calculations in the business case formed the basis of decisions, *"I'd say generally it's looked at from the [financial] savings and the rate of return on the project"*. Ben (Manchester) agreed, noting that despite recognition of inter-connecting objectives which local energy served (above), the decision to approve the city centre heat network was based on the project's economic, rather than carbon case:

The decision to go ahead with the project was based purely on the economics of it. The carbon didn't have a lot to do with it [...] the fact that there will be a carbon saving project is great. But a project that saves carbon but runs at a loss isn't going to get anywhere [...] You can touch on stuff like equity and things... but it's definitely commercially led.

Ben, Manchester City Council

In practice, assessment of the business case allows for varying levels in the marginalisation of non-financial value.

Going further, Angela (Bristol), Tony (Warrington) and Mark (Peterborough) described how localised approaches to financial assessment were applied to energy projects as *the* valuation method for determining whether projects went ahead. For Angela, projects had to meet financial parameters set by the council, stating, "*if a project hits the parameters then it can go ahead. It's as simple as that*". Whilst Tony and Mark, both in finance roles themselves, emphasised that income generation was the priority in their councils, mediated by financial criteria. In turn, business case valuations could be moulded to deliver on income, rather than diversify value:

I look at the financial models in great detail, come up with a funding plan ... I will then take that to my finance director, and if it doesn't make money I won't even bother with it.

Tony, Warrington Borough Council

[The Council's] invest to save pot, [was] about £100m at the time I was doing the energy unit. [...] The criteria [for accessing the pot] is, 'Does it make a profit?' Yeah, you'll play the risk profile on it, but the simple answer is if it's going to make a profit it's going to make a profit.

Mark, Peterborough City Council

Following the energy project business case into decision making valuations has shown that clean energy, climate protection, social and local economic objectives were all in tension with financial value. Although guidelines suggest ideas about decision making balancing financial and non-financial value this did not materialise. Instead, councils largely applied tighter questioning of affordability, covering costs together with income generation, to business case investment decisions.

Thus, the 'viable' energy project business case was one which satisfied the challenges of affordability. Austerity was strongly emphasised as a key factor influencing greater attention to financial value during assessment of the business case. Critically, environmental objectives were no longer compelling reasons for pursuing energy initiatives. However, there was some evidence that this was an exaggeration to existing economising trends already taking place in the programme of governing for local councils. Ben (Manchester) and Melissa (Camden) for example, emphasised that the financial, economic and commercial case was already a significant requirement to the energy project business case evaluation, but had intensified. Rhys (West Yorkshire Combined Authority), agreed when he explained that as a general rule of thumb "*carbon on its own doesn't get a project moving really*" and was not sufficient to secure a project's progression through the business case assessment process. Rhys also went on to say that he didn't think that business case assessment practices would change until something like 'hard hitting' carbon taxation was introduced.

From a value-making perspective, these interviews all illustrated the significance of the financial aspects of the business case. Although subtle distinctions were apparent, processes edited out social, carbon and local economic value at the point of an investment decision, despite these being core project objectives. At least in the 'wild' (Callon, 2007) of austerity pressures, the business case was not a tool for incorporating financial *and* non-financial value. Instead, local authorities were pushed down a route which marginalised forms of non-financial value. The next section explores the different valuation strategies that officers devised to negotiate this general process of economisation, and push the energy project through the confines of the business case framework.

## 8.4 Contesting and resisting business case valuations

Short-term financial planning was the form of economisation which emerged from austerity pressures in many councils. This had specific impacts on how the payback period – a financial device within a project’s business case that calculates the number of years to recover capital costs – mediated valuations of local energy.

As discussed in Chapter 6 (Section 6.3), there are a series of related calculations in the economic case of Treasury’s ‘five case model’. The advice here strongly encourages using NPV as the main decision making metric in the business case assessment. Conversely, whilst the payback period is a formalised element of calculations, it is specifically discouraged as the device on which base decisions (UK Treasury, 2011, p. 39; 2015a).

However, the guidelines fail to acknowledge that the business case framework is not isolated from wider organisational pressures. First, as Section 8.2 illustrated, the variation in assembly of the energy project business case meant that full economic assessment was not always conducted. Therefore, the NPV device was not available to use in all business cases: sometimes it did not exist. Second, irrespective of whether there was NPV, other metrics were sometimes more compelling to decision makers. Namely, in the context of a prioritisation of short-term financial planning, the payback device was a convenient and appealing measure of value.

Officers reported that even though long-term investments were previously considered, this was no longer possible. *“We struggled to get the go ahead for ten years [... and] in this day and age, to try and get them approved for something that’s got a 30, 40, 50 year pay back, you’re wasting your time even asking the question”* (Ed, Fife Council). John (Derby) elaborated,



emphasising how the Council had previously made long-term, 25 year investments, including into the 230kW hydropower scheme on the River Derwent which provided renewable electricity to the main council building and exported excess electricity to the grid. Critically, the hydro project was developed in the mid-2000s when the council had been comfortable to proceed with prudential borrowing for projects paying back over 25 year periods. Now the basis of valuations had changed, meaning John was unable to pursue projects which had longer payback periods like the hydro scheme.

the finance people were comfortable with... the payback, after 25 years, the thing's in profit and significantly in profit as well. So it was looked at as a long term investment. [...] There's no way we'd get away with that payback now. [...] we are a single authority now, we are all about the bottom line.

John, Derby City Council

This move towards shorter-term financial planning was thus a considerable stumbling block for energy projects with a business case entailing longer payback periods.

As a result, some energy projects were not even brought to the table for consideration, particularly if they paid back in excess of 5-7 years. *"Beyond seven years we don't even consider it. It's too long a payback period in the current climate"* (Darren, Hull). Colin (Derry City and Strabane) agreed, explaining that it was only exceptional instances when the council would approve a business case that paid back in over five years, stating, *"generally... anything more than five years is highly unlikely unless it's very good technology, so it has all benefits to the council. But generally over five years it wouldn't go at all."* Sometimes this was extended to ten years, but that was described as, *"the absolute maximum that we want to be looking at"* (Melissa, Camden). In Camden there remained a preference for payback periods of five years or less for projects within their corporate estate carbon reduction plan.

Narrowly structuring the economisation of valuations on the basis of a limit to payback period in the business case was not necessarily a formal restriction articulated in a local authority policy. However, it was often incorporated as a local norm in business case assessment. *“It’s not written down, but there’s an unwritten rule [...] that you know what’s going to be approved [...] you know it’s just so far out [for some projects] that there’s just not any point in them”* (Colin, Derry City and Strabane). This informal approach by default excluded certain local energy infrastructure which exceeded borrowing payback limits, *“There is a kind of golden decision somewhere that if you go over that you’ve got a flashing red light above your head. So it doesn’t matter how good the project is, you just can’t borrow anymore”* (Daniel, Cardiff).

Irrespective of whether restrictions on borrowing were formally or informally mediated via the payback calculation, the payback period intersected with debates over estate rationalisation and prevented investment in otherwise ‘viable’ local projects. Although council buildings are a prime target from an energy and carbon saving perspective, uncertainty over which buildings were being retained or sold delayed investment:

this building is a perfect example, it’s a real gas guzzler, by far... the biggest component of our energy bill. But there’s constant debate about whether we should even be in here, should we sell it and move? [...] So we’ve been prevented from doing work on this building. Even though, here we are two years later and no sign of [selling].

Daniel, City of Cardiff Council

Uncertainties surrounding the future of the building stock for cost saving reasons thus created doubt about the value of investing in certain buildings. Even business case proposals that met shorter paybacks of five years were held back in some councils:

we're coming up with a proposal that will reduce running costs, reduce carbon emissions [...within] a five year period, but at the moment we're scrutinising all of our buildings.[...] And that's one of our frustrations... this delay of options as to what's the future use of those buildings? Are we going to retain them?

Chris, Leicester City Council

In the context of short-term financial planning, buildings were translated into assets, and business case valuations were subject to trade-offs between cost saving from estate rationalisation and cost saving from investing in energy performance.

Mediating business case decisions through the payback device also restricted district heating projects. Although the infrastructure is long lasting (for example pipes typically last 40 years), district heating projects have relatively high capital expenditure costs and a long payback term. As a result, it was difficult for officers to construct the case for this longer-term system infrastructure compared to shorter-term renewal and upgrades of individual boilers. Emphasis on the payback device was thus criticised by some officers who perceived that this limited their options.

If you're just doing a straightforward boiler replacement it may be cheaper than connecting to district heating, but [that's] in the short term, and this is the short term capital budget pressures that you have to argue against... The capital cost will be a bit more long-term [for district heating] but it's a better approach.

Martin, Aberdeen City Council

Charles' (Fife) account furthered this point and emphasised that the payback device failed to adequately represent what he perceived as the genuine financial and risk parameters of district heating infrastructure. Short-termism was perceived to lead to false economies.

We need to open up the discussion about long-term paybacks. The interesting thing [when I asked the energy consultants working for us], 'What is the energy price for district heat for that model over a 40 year and a 10 year payback?', [is that a] 40 year payback is two pence a unit, 10 year payback, eight pence a unit... District energy has a short early risk period and a very stable future period.

Charles, Fife Council

Using payback as the primary valuation metric therefore obfuscated the value of certain energy projects. As Charles pointed out (above), the relationship to the unit cost of energy is not itself apparent through the payback calculation and it fails to account for the cost of bills. Others such as Angela (Bristol), agreed noting that with the payback device “*it’s not going to give you the full picture*”. The metric is hence only one representation of (financial) value which excludes other (financial) costs.

In this type of economisation – which was largely tied up in short-term financial value – the status of the payback device transformed into a clearly appealing device in business case decision making. Guidelines suggested individual financial devices in the business case have designated roles that should not be changed. Interviewees noted the deficiencies of reliance on the payback device. Despite this, accounts illustrated how the payback device was almost invited to take on a life of its own. A new, or at least more central role was established for the payback device in these economic valuation practices associated with short-term financial planning. Critically, the effects of such a focus on the payback device in this valuation practice were the restriction and exclusion of energy efficiency upgrades to the corporate estate, and more complex long term projects, where the business case coupled longer payback periods with higher upfront capital costs. Energy and carbon savings were further marginalised in these business case valuations that prioritised short-term financial value.

### ***Negotiating longer-term borrowing in the payback device***

Breaking out of the mould of normative limits on payback in the business case assessment was nevertheless variously tackled by officers. The success of previous projects was one route used to make the case for modifying and changing local valuation practices. In particular, success in small schemes was a means to gain ‘hands-on’ experience and knowledge about other energy opportunities and confidence to proceed. This allowed

officers to make the case for adapting payback limits, as illustrated by Cambridge, Exeter and Gateshead.

Building on the success of earlier more 'straightforward' projects within their revolving Climate Change Fund, Cambridge City Council recognised the need to shift priorities. This included focussing on bigger energy users within the council, which they recognised "*may mean that projects have a longer payback period*" (Rebecca, Cambridge). In particular, Rebecca noted that this could mean that a large scale (c.£24 million) city centre district heating proposal which had previously been abandoned might actually resurface again, though probably in a revised form.

Equally in Exeter, there was a modified approach to evaluating the business case following initial success in their solar programme. Karen described how the early projects acted as frontrunners, and this enabled extending the payback limit to around 10 years.

[Evaluating the business case is] just really payback, nothing more. [...] Initially five years was a safe amount of time considered to be the acceptable level. But as projects grew and support grew, we were able to push that... For projects where there was a greater return... we've had support for projects that have [a] ten, eleven, year payback.

Karen, Exeter City Council

As Karen noted however, this extension of the payback limit to the business case assessment was restricted to those projects which provided a greater return.

Payback of around ten years also falls short of including the full range of local energy projects (small scale hydropower and district heating both typically extended this in my sample). However, these cases illustrated how earlier projects created routes to institutionalising a broader range of energy projects within the council and created opportunities to modify business case valuations, particularly extending payback limits. This illustrated how the

intersecting processes of short-term financial planning and the payback period were not set in stone.

The potential for wider organisational change is well illustrated by Gateshead where the longer-term character of energy projects pushed the Council's capital investment programme to take a longer-term view:

We've always had a capital bidding process, [but] what we've found is energy projects are having to look at that 20, 30 year life anyway, so probably the improvements we've seen in that [are] overall at the Council. I like to think the energy work has pushed them in that direction to be more whole life.

Andrew, Gateshead Council

This emphasised that a council's energy valuation practice is not entirely fixed, and the ability to respond adaptively to changing timelines prevented opportunities from being missed.

### ***Structuring capital cost borrowing in the business case***

In a further development, creatively structuring the repayment profile of capital costs was central to escaping short-term financial planning in the business case assessment. As exemplified by two different approaches in Calderdale and Warrington, this enabled modified valuation practices for producing the financial model. Critically, these actions helped in navigating the energy project through the business case assessment.

In Calderdale the process of constructing the financial model needed to be presented in such a way that, within existing budgets, the business case showed it was solving a problem. As Rob explained, *"If you've got a solution that says we can pay it back, then you've got a much easier ride through"*. For their £22 million LED street lighting and column replacement project this involved demonstrating how, unlike the existing street lights, the new lights and columns required less withdrawal from the maintenance budget. The business case then proposed that, instead of drawing on the maintenance budget each year, the project would access an equivalent amount upfront

(equal to four years maintenance budget), as a source for some capital costs.

Using the maintenance budget upfront needed to be combined with multiple sources of finance and structured accordingly. This included £5 million of Salix interest free finance (government lending), which needed repaying first, within five years, and prudential borrowing (low cost government lending), which would be paid back within 15 years. *“The continued saving on energy and maintenance cost of the next 15 years is going to be so much less, this will pay for the project overall”* (Rob, Calderdale). This provided key audiences within the council with a business case ‘solution’ by showing that borrowing repayments were covered by reductions in energy bills and reduced ongoing maintenance costs without ‘additional’ council resources.

In Warrington, Corporate Finance was directly involved in developing the business case for energy projects. In Warrington’s LED street lighting replacement, Tony (a capital accountant) took building the financial model in the business case a step further than Calderdale’s use of maintenance budgets. Tony developed a bespoke approach, focussing attention toward structuring borrowing to minimise interest and maximise cash flow within the early years of a project. This structured borrowing for the £25 million capital expenditure costs according to the payback periods of different aspects of the investment (i.e. bulbs, cabling and columns).

You borrow the money, you make the payment every year. But I decided because of that, you’re limited then to the shortest period of payback. But I thought, ‘Well, hold on a minute, we’re doing lights and we’re doing columns. It’s a piece of concrete or a piece of steel. Why do I want to pay the same amount of time for a bulb?’

Tony, Warrington Borough Council

This was identified as a more cost effective way of putting together the borrowing than one single tranche, because it created more flexible payback options.

Since then, new accounting rules also allowed the council to structure payback by deferring loan and interest repayments in the initial years of a project. In Tony's view this was, "*effectively... free money for the first few years*", making the financial case even more attractive because the financial savings are greater in initial years which shows the project is more cash positive. Debt repayments are then met from energy savings and reduced maintenance costs.

Importantly this more creative use of new financial and accountancy methods within the business case enabled 'de-risking' the construction phase and initial period of operational projects. Louise, who worked in bringing forward energy projects was convinced that Tony's approach to structuring capital costs, borrowing and repayments was unusual within local government. As was raised in Chapter 7, finance personnel in councils tended to be experienced in revenue budget management, but not in larger capital budget risk management.

it's not terribly sophisticated, it's just looking at it in a bit more of a creative way... From talking to other local authority officers, they often have... revenue managers so they're not used to working with capital... to borrowing big sums of money and, the risk profile appears very different to them.

Louise, Warrington Borough Council

By contrast, Warrington's more creative structuring of the financial case allowed what Louise perceived to be a more accurate representation of the financial risk parameters of energy projects:

if we borrow into the principle repayments to year four, then we'll have built up sufficient funding and the early defects period and the risk will have been taken out of it [...] projects are at their riskiest during construction and in the first couple of years. And after that really any revenue income you can pretty much rely on.

Louise, Warrington Borough Council

With support from the Finance Director described as, "*exceptionally forward thinking... very open to new ideas*" (Louise, Warrington), and Senior



Management, this 'successful' business case served to raise the profile of energy across the Council. Crucially this was helping to institutionalise the value of energy projects across organisational siloes. *"The head of our regen[eration] scheme... now says in meetings, 'Can we put solar panels on these buildings?' Is that not a victory?"* (Tony, Warrington).

These cases illustrated the creative and improvisational aspects of using the business case device. One of the effects of these adaptive business case valuations was securing direct long-term council investment in energy projects. As was well illustrated in the case of Warrington, buy-in of financial personnel and 'know how' was essential for localised business case valuations to go against the local authority norms which have resisted energy projects in other cases.

### ***Moving away from the payback device: whole life costing***

Given the limitations of the payback device in mediating business case valuations, officers also argued that the basis of these should change. In particular, greater use of whole life costing, which calculates the lifetime costs of a project, rather than only initial capital expenditure (payback), was suggested as essential for district heating projects.

Whole life costing is one component of the assessment recommended in guidelines. But as is clear by now, scripting business case valuations in line with the advocated approach was not routinely possible for councils. Emily (Islington) for example, was frustrated with reliance on the payback calculation and strongly made the case for using whole life costing, which includes factors such as operation and maintenance costs:

one thing that I've always banged on about with anything to do with investment in energy and heat and heating is the day-to-day delivery of heat. [...] Our housing colleagues have an asset management plan, they know how old boilers are and really their thinking is, 'we're going to need to put new heat in', but they just replace the boilers... [because] they're not required to do any whole life costing.

Emily, London Borough of Islington

Whole life costing was therefore perceived by some officers as a calculation which balances financial, social and carbon values. For example, whole life costing can include factors such as the reduced boiler maintenance costs from a centralised plant, which are ignored in other metrics. But as Emily explained, the Housing department were not routinely using whole life costing in their business case development process. Critically in the absence of whole life costing, the Bunhill energy centre and heat network business case in Islington didn't 'stack-up' on payback figures alone and would not recoup capital expenditure costs. Consequently, Emily was required to develop the business case primarily on the basis of securing grant funding.

Although there was no local norm for using whole life costing in Islington, it had become a standard practice in Gateshead. Here, the Energy Services Team had developed an in-house specialism to create energy project business cases that used whole life costing, alongside other metrics. *"We do the whole life costing, annual cash flows for 20 years, with inflation, with as much information as we can now, and we do it all in-house now"* (Andrew, Gateshead). Again this emphasises the possibilities of alternative adaptive valuation practices that go against the overriding struggle over short-term financial value. Where there are the skills and expertise to develop use of devices such as whole life costing along with the willingness to incorporate this into business case decision making, new valuation practices can emerge.

### ***Shifting the business case focus: a programme of projects***

Other strategies involved taking the profile of a group of energy projects rather than focussing on individual business cases. Importantly, this removed the requirement for an individual energy project to cover its own costs. As discussed earlier, this ability for a project to cover costs restricted approval of some energy projects. Considering the overall programme of projects as a single business case allowed for cross-subsidisation of projects.

In Peterborough, the energy team was situated within the Finance Department, and the Finance Director was responsible for translating energy projects into income or saving opportunities. Here, Mark, the Financial Director, was instrumental in moving away from a focus on projects as individual assets, to instead consider whether a project brought in enough income or savings to cover costs within the wider energy programme.

In a divergence from the guidelines, this meant paying greater attention to 'cash'. *"For me, cash is king. People talk about discounted cash flows and IRRs [internal rate of returns] and that. Cash is king. If it makes cash, it makes cash."* (Mark, Peterborough). To consider energy project finances as a group, rather than individually Mark used a profit and loss statement which he viewed as a particularly helpful tool. He explained, *"I've got a P&L [profit and loss statement] that I manage. But what I try to do to obviously hit the P&L, ideally beat it, as I need to have money so I can develop new products as well [... and also] afford to give more to the central [council budget]."* By allowing cross-subsidy of energy projects within the programme, this model of economising energy services as new revenues had considerable advantages in creating forward momentum. It also, however, represents a financial liability, where the focus on clean energy *per se* and its wider social welfare and climate protection purposes could become submerged. In the conclusion, I will return to consider whether this form of economisation created a greater diversion in energy and carbon saving valuation than the other business case valuation practices being deployed.

### ***Political priorities, support and business case valuations***

The interactions between officers and councillors were critical to the success of an energy project's progression through the business case framework. An essential task for officers (including in Bath, Birmingham, Enfield, Islington and Swansea) was to creatively position the energy project in relation to local political priorities.

Political support improved the business case of less financially attractive projects, but it was also significant to securing the support when political administration changed. This involved a degree of creative thinking on how to progress in such situations. It entailed 'realignment' to the political priorities of the administration. *"Obviously when you get a new administration in there's a lot of 'out with the old, in with the new, do things differently'"* (Hannah, Bath). Emily (Islington) summarised their process of reframing of the energy strategy to meet changing political priorities as *"just which way around you order the words"* when political control switched from the Liberal Democrats to Labour.

in the case of changing administration from Liberal Democrat to Conservative, this sentiment was echoed by Hannah (Bath) as ultimately, *"a matter of being quite nimble and seeing what way the wind blows and saying, 'OK, well, actually this is how our work aligns'"*. With an incoming Conservative political control in Bath, a popular narrative concerning energy project business cases was based on the retention of money in the local economy rather than being handed over to the 'Big 6' energy providers. For the partnership with Bath & West Community Energy group however (where the council was co-investing in a solar farm), the most compelling argument surrounded how the project could provide income toward extending broadband cover in rural areas.

Officers were thus adept at utilising the business case not just as a financial tool but to secure political commitment, particularly for benefits associated with projects that were perceived to be harder to capture. In terms of valuation practice, the business case could, if necessary, communicate narratives that introduced different actors. Officers positioned the business case to suit a particular moment in time, even to priorities like internet availability, which from the outside could appear an unrelated local non-energy 'co-benefit'. The valuation work associated with an energy project

business case therefore at times extended beyond the aspects of financial value which have dominated this chapter.

## **8.5 Conclusion: the constraints of the Business Case**

This chapter problematised the business case 'stage' in energy project development and uncovered what happens to the negotiation of value within it. The analysis was based on the notion that as a valuation framework, the 'business case' is an instance of what Callon terms 'economics in the wild'. Not economic science per se, but the "calculations, optimisations, and the management of rare resources" (Callon, 2007, p. 338) that make the economisation of society possible. Using these insights, I considered business case valuations as active processes that had the potential to determine the assembly of value from an energy project.

Government guidelines reviewed in Chapter 6, describe the business case as a standardised optional appraisal object (e.g. Scottish Futures Trust, 2011; UK Treasury, 2011). Importantly, UK Treasury's 'five case model' is the business case model *par excellence* in the guidelines. It includes use of methods which attempt to calculate and represent socio-economic value, and inform decision makers on the optimal approach in terms of net benefits to society.

As a valuation practice, findings revealed that what actually constitutes assembling the energy project 'business case' is considerably more varied than is captured in guidelines. Far from a standardised valuation framework, there was a high level of user adaptation in both *constructing* and *assessing* the business case. *Constructing* the business case spanned formalised completion of a business case akin to the 'five case model', through to avoiding the formalities of the business case entirely. The energy project

business case is thus diverse and nuanced; it resists a single definition and stable form.

Business case *assessment* was routinely co-opted by councils' prioritisation of short-term financial value in response to austerity and cost saving. Although this took place with subtle differences, evolving codes of practice in councils enrolled financial devices into management strategies for responding to budget pressures. In this context, negotiating the value of an energy project was particularly open to mediation through the payback device calculation. Under this form of economisation, a project's business case needed to be made commensurate with the confines of short-term financial value, as opposed to broader socio-economic value, carbon saving or public goods. Consequently, some long-term energy projects were de-prioritised. Escaping this was difficult, but several instances of adaptation and resistance sought to reposition the boundaries of constructing and assessing the business case. In these cases, familiarity of working adaptively with the business case and the support of decision makers to consider alternatives were both essential.

These findings provide considerable depth to understanding the economisation of energy projects in local government. First, findings tell us more about how individual devices in the business case are pulled into the wider struggle associated with the programme of governing of local authority finances. Financial devices such as the payback period were openly acknowledged as deficient in terms of their ability to represent multiple forms of value. Despite this, at least in the context of austerity, payback period exercised power regardless. There was some debate surrounding the extent to which economising trends were already occurring in local government. But data clearly emphasised an intensification in response to austerity in terms of short-term financial value and long-term curtailing of investments.

This form of economisation was consequently not pre-fixed, and under the right conditions could be changed. Budgetary pressures are therefore at least part of the explanation as to why business case valuations could be directed toward certain types of economisation. The influence of austerity on valuation practices illustrates that economisation is not set in stone. This indicates the need to know even more about the politicisation of valuations. Consequently, it is necessary to pay much greater attention to the wider programme governing local authority agency and autonomy along with its interactive relationship with business case valuation practices.

Furthermore, findings provide evidence in support of the argument that 'financialisation' is emerging as a compelling form of economisation (Chiapello, 2015). According to Chiapello, financial calculation and reasoning render objects as seen from the perspective of an investor, and this overshadows other forms of value. These findings show that, at least in the context of budget pressures, business case valuations were able to facilitate financialisation. An energy project could be deemed un-valuable if it did not conform to certain financial metrics be it a payback term or meeting some level of income generation or return. In support of this, 19 respondents in the LEUKES questionnaire also reported that the energy project either saved or generated money that released pressure on other budgets. Only 6 respondents said that this did not happen<sup>45</sup>.

Additionally, findings show that economising (or financialising) the energy project to economic (or financial investor) value through the business case was highly varied and not done in any one way. Rather, when the business case device was brought into being it was considerably adapted. There was actually interpretative flexibility in abundance, and users exercised extreme finitist application of rules and judgements around its meaning. However,

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<sup>45</sup> There were 34 responses and 9 were unsure.

these tended to ultimately revolve around economic or financial value, rather than energy or carbon saving.

Finitism (Barnes, 1995) explains that such variation in valuation practices is due to rules governing a valuation framework being subject to continual user interpretation. Every instance of business case valuations requires judgement or 'acts of classifying' to establish meaning. Previous applications, including guidelines about the business case, do not themselves determine future application. Rather, variation in the business case depends on how people are using them. This helps to reinforce the findings of Doganova and Eyquem-Renault (2009) and Doganova and Muniesa (2015) who, though not focussed on local energy, emphasised that the business model emerges in a variety of different material forms.

This chapter has explored what happens to the negotiation of value within the bounds of the business case framework. Opposed to broader socio-economic value, business case valuation practices overwhelmingly reduced the energy project to a measure of short-term financial value. In particular, the value of the energy project had to be made commensurable within the confines of short-term financial planning. The valuation practices that progressed a project through the business case stage of development were not therefore those which consistently prioritised carbon saving or clean energy. This has also illustrated that only looking at the 'ideal type' of business case depicted in guidelines, has serious deficiencies in understanding actual energy project valuation practices. Taking this investigation forward, the next chapter explores the valuation practices devised to navigate the highly rule governed valuation system of public procurement.





## **9 Public Procurement and Valuation**

### **Practices in Local Energy: Configuring the Intelligent Buyer**

#### **9.1 Introduction**

This chapter moves onto the direct focus on public procurement in local energy valuations. At the end of the previous chapter, I pointed out that guidelines provide only a partial account of energy project valuation practices. Also, in Chapter 7, we discovered that some officers interpreted that what constituted ‘best value’ in an energy project was the outcome of assessing suppliers under competitive public procurement. The conceptual model I use in this thesis argues that how things are valued matters (Muniesa, 2012), and that the current programme of governing (Miller & Rose, 2008) local authorities, is extended and contested through valuation frameworks. Thus, I consider local energy procurement as a set of valuation practices that impact energy systems development.

In this chapter I extend my investigation into local energy value-making by analysing what happens in public procurement: the most complex rule governed and economised valuation framework studied in this thesis. My aim is to investigate the technocratic set of rules governing public procurement valuations and examine practices where energy projects are negotiated by multiple actors. This allows for considering how, as a valuation framework, public procurement shapes the value of energy. The rest of the introduction highlights key issues about public procurement for local energy valuations. The following qualitative analysis traces negotiating value as the energy project proceeds through multiple procurement ‘events’ throughout its development.

In local authority energy projects, public procurement is considerably diverse. Depending on the project, procurement can be a time consuming, resource intensive and expensive aspect to its development. UK public procurement was reported as the most expensive across the single market, with an average of £40,000-50,000 to complete a tender for regulated procurement (not specific to energy) (House of Commons Communities and Local Government Committee, 2014, p. 29). Research into district heating reported procurement costs were much higher. These ranged from £200,000-£500,000 (Wiltshire et al., 2013, pp. 29-30), with higher costs associated with the competitive dialogue route (see Chapter 6, Section 6.4).

Local authorities also lack experience in procuring local energy projects (King 2016b). Procurement emerges multiple times across project development, including procuring a wide variety of external expertise to assist in project development. This can range from external legal, planning, consulting engineers, project managers, finance and procurement energy specialists. Local authorities thus procure expertise that feed into procurement for a local energy project – procuring to procure. It also involves buying goods, such as individual components like solar PV panels, LED lights, invertors, CHP units, insulated pipes and so on. This extends to replacements when kit wears out, breaks or is damaged, along with various delivery partners and ongoing services for operational projects. These services differ depending on the project's ownership and ongoing control. Services can range from standalone maintenance contracts, through to procuring a fully outsourced model for the energy project where the supplier designs, builds, finances, operates and maintains the energy project over the course of a long-term 'concession contract'. These contracts can extend for periods of up to 80 years (such as the Cranbrook network near Exeter which is operated by E.ON). Combined, this means at multiple stages of project development, a considerable number of actors are involved in local energy procurement valuations.

Formal aspects of public procurement can therefore occur at every stage in a project's lifespan, from initial conception where a feasibility study is procured, through to replacing a CHP unit, c.15 years into operation of a heat network. In Chapter 6, I argued that from the perspective of valuation practices, the rules structuring public procurement are significant because they govern these diverse buyer-supplier interactions and relationships. This includes promotion of competition as the ideal means through which to negotiate value and secure 'optimal' solutions from market actors for public sector clients (see Chapter 6, Section 6.4).

The remainder of the chapter analyses valuation practices configured in local energy procurement, and considers the consequences for the assembly of value. In section 9.2 I develop and analyse a typology of the 'intelligent buyer' configured to navigate local energy procurement valuations. First the typology is described, emphasising four distinct constellations of actor-networks. Analysis of each configuration follows, focussing on how attempts to adapt procurement processes to capture locally determined value are contingent on expertise, trust and resources. Section 9.3 discusses how the findings relate to understanding how a programme of governing through valuation frameworks only partially achieves closure.

## **9.2 Assembling the Intelligent Buyer in local energy procurement**

Navigating public procurement for local energy entailed configuring an actor-network, characterised here as an 'intelligent buyer'. I use the term 'intelligent buyer' to encompass the agency required to exert influence within the valuation practices of local energy procurement. Reviewing public procurement regulations in Chapter 6 illustrated the complexity of the procurement apparatus which local energy projects are exposed to. I argued that this spanned designing tender specifications, selecting which type of procurement to adopt (open, restricted, negotiated or competitive dialogue)

deciding whether to use an existing ‘framework agreement’ or establish a new one, and whether to apply an exemption for negating competitive procurement (known as Teckal), as though it was an ‘in-house’ award to the local authority itself. These are covered later in the chapter, and are described in Chapter 6, Section 6.4. All this while ensuring compliance with the regulations.

Although this implies somewhat flexible valuation practices, exploiting this in-built discretion for energy projects is likely to rely upon specialist energy and procurement expertise, establishing trust in suppliers, ‘back office’ procurement support resources and ‘know how’. Thus, I use the notion of the ‘intelligent buyer’ to characterise the specialist knowledge and expertise in *local energy provision* and *procurement for local energy*, that equips councils’ agency in valuations.

Local authorities developed a variety of strategies to configure the intelligent buyer. These ranged from in-house models for developing council-owned energy initiatives, to models which relied on some outsourcing of expertise for projects to local organisations and public sector intermediaries, and models which outsourced project ownership and operation to the private sector. Table 9.1 summarises the variety of approaches, structuring data under a typology of four configurations.

Table 9.1. The intelligent buyer for local energy procurement

<b>Projects required to apply public procurement rules</b>		
<b>Intelligent Buyer</b>	<b>Description</b>	<b>Energy projects</b>
In-house intelligent buyer function	LA aimed to control procurement process (using open, restricted or negotiated devices), ongoing organisation & management of energy projects. External expertise regularly secured through procuring consultancy expertise to perform set intelligent buyer tasks.	district energy (7); biomass boilers (1); LED streetlighting (1); CHP (1); solar PV (1); corporate estate EE (1).
Close Friend performs intelligent buyer function for LA	Local organisation delivered local energy project on behalf of LA, using 'in-house' award (Teckal device), or open procurement (use of tender specification device crucial; not guaranteed to be awarded contract); VEAT device; or service level agreements. Close Friend commonly has ongoing ownership &/or management role; complies with public procurement rules, sometimes with reliance on council procurement services.	district energy (2); renewable electricity (4); white label local energy tariff (1); feasibility services via SCA <sup>1</sup> (1).
Framework Agreement contributes to intelligent buyer function	Closed list of pre-approved supplier(s) offering pre-specified goods & services to pre-defined group of public sector bodies. Once established, use of 'mini-competition' device negates openly competitive procurement for eligible projects. Established by LAs & public sector intermediaries.	external framework: EPCs (8); domestic energy retrofit (1); district energy (1); biomass (1); hydropower (1); LA's own framework: EPC (1); solar PV (2).
Outsourcing through Concession Contract	Competitive dialogue procurement device used to procure private sector energy company to finance, build, own & operate project under a long-term 'concession contract' through establishing either a commercial-SPV or a JV. LA becomes paying customer.	district energy (3)
<b>Projects not required to apply public procurement rules</b>		
Avoided formal procurement	Below the threshold governed by public procurement regulations.	district energy (1); Innovation Hub (1)
Procurement not applicable	Procurement was not relevant to the project for various reasons <sup>2</sup> .	district energy (2); solar PV (1); heat pumps (1); smart grids (1)

<sup>1</sup> Scottish Cities Alliance (SCA) collective procurement for variety of LA energy projects and strategies.

<sup>2</sup> Project was at feasibility stage during data collection or was a demonstration or innovation project not involving public procurement. One case was a Combined Authority that was not involved in procurement for the project.

Structural distrust of supply chain actors meant managing trust was a central function of the intelligent buyer. This emerged in procurement valuations in the following ways: first, the ability to secure high quality and trustworthy suppliers that have relevant expertise in the design, installation, operation and/or maintenance of projects. Suppliers' reliability was questioned, with officers concerned about poor quality services across consultants, installers and operators.

Second, incorporating high design standards and robust procurement specifications that enable procurement valuations to deliver the envisaged project. Officers had a shared perspective that lowest cost solutions often resulted in higher costs overall because cost-cutting can result in problems that need resolving within operation and maintenance budgets. However, officers also had suspicions that suppliers inflated prices of both goods and services, and wanted to avoid being overcharged. As exemplified by David's (Newcastle) comments, in relation to the concession contract configuration, *"the bidder's own knowledge and approach to pricing is they'll just try and develop a cost to see what they can get away with."* Benchmarking costs across all configurations aimed to test suppliers expertise and whether the prices submitted were reflective of costs.

Third, participating in the contractual arrangements between the local authority (the 'project sponsor') and the contractor(s) delivering the works and services. Especially this entailed negotiating allocation of responsibility and risk in complex energy initiatives. Fourth, capacity to hold a variety of actors to account, including designers, contractors and operators, if, and when, issues arise. Each configuration took a specific approach to managing the trust in the buyer-seller relationship.

### **9.2.1 In-house Intelligent Buyer**

The in-house intelligent buyer had most overall control of local energy and was deployed for a wide variety of projects (see Table 9.1). This spanned more straightforward projects such as installing a new CHP unit in a leisure centre (Derry City and Strabane), through to larger scale district energy networks. Projects were funded from council borrowing, grants, housing revenue account, internal spend-to-save funds and maintenance budgets.

In-house configurations aimed to control the procurement process and secure forms of value which were perceived to be more difficult under some other configurations. Councils particularly valued area-based integrated low carbon local energy provision (Leeds), and affordable heat under this configuration (Islington and Camden), but also capturing income streams from local energy (Exeter). A high degree of private sector involvement in project ownership, financing and/or setting prices associated with other procurement configurations, especially concession contacts (Section 9.2.4), were thought to be in conflict with these. Leeds and Camden provide illustrative case examples.

In Leeds, the council wanted to maximise use of ‘waste’ heat from the Recycling and Energy Recovery Facility at Cross Green (operated by Veolia). A new district heating network was being built to connect to the energy from waste plant (procurement at time of data collection). The heat network was oversized for the number of customers already signed up (social housing and some public buildings) and was being developed prospectively. This kind of oversizing reflects the concept of ‘passive provision’ discussed in Chapter 6 (Section 6.3). It is a concept encouraged in UK Treasury’s *Green Book* supplementary guidance (UK Treasury, 2015b) for evaluating infrastructure and building the business case. However, private finance priced risk too high to build out the network using passive provision. It proved unaffordable without enough customers to guarantee return on



investment from long-term heat sales. A different configuration, such as a concession contract, would therefore have required scaling down the project.

Camden's procurement of the Somers Town district heating network showed that affordable heat to residents was a particular area of contention with commercial operators. Phase one was primarily serving local residents. Phase two was procuring and installing a CHP engine to provide heat to the network, and sell electricity to the new Francis Crick Institute via a private wire<sup>46</sup>. Outsourcing ownership to the private sector was thought to be in conflict with the responsibility to ensure affordable heat to social housing customers.

Concern over private sector gain from heat sales was reinforced in Camden, after running two 'meet the buyer' procurement events where around 14 organisations showed initial interest. When the council confirmed that the scope of the phase one project was to design, build, operate and maintain the primary district heating network, but did not include secondary distribution system and customer base, the majority dropped out. Only three formally responded to the tender (of which two were compliant).

[...With] the utility-led contractors, they're interested in [the] customer base and having that control, so as soon as you take that away they're like, 'Oh no, it doesn't fit with what we want to deliver.' Then it leaves... contractors who are just getting their margins from the design, build O and M and not from... billing.

Melissa, London Borough of Camden

As Melissa's words illustrate, different procurement configurations and valuation practices shaped the kind of local energy projects being created. In Camden it was a project which prioritised affordable heat, and integrated area-based infrastructure.

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<sup>46</sup> Funding made available through the planning process for the Francis Crick Institute (Section 106 funding) provided majority of the finance required.

***Procuring consultancy expertise in project development:  
feasibility studies and business cases***

The in-house configuration demanded a range of energy and procurement expertise and resources throughout project development. Procuring design engineering consultancies for feasibility studies and business case development was common for both unfamiliar and more complex projects. As was procuring specific areas of legal and financial advice. Typically this was associated with district heating projects (such as Camden, Gateshead, Glasgow, Islington and Swansea<sup>47</sup>), but it also encompassed projects that involved setting up new organisational structures and contractual arrangements.

Multiple external actors therefore fed into procurement valuations even in the in-house configuration. Success with use of external consultants to assemble value was dependant on securing high quality expertise. When procuring consultants, officers emphasised the need to prioritise quality when setting the price-to-quality ratio for tender evaluation. Andrew (Gateshead) reflected that high quality input to project design helped determine the tender specification for procuring the components, civils, and construction. This meant they could then prioritise price when assessing tenders for building the Gateshead energy centre and heat network (which was assessed under 60:40 price:quality ratio, see Chapter 7, Section 7.2).

Aligning consultants to the values defined by the council, defining the tender specification of consultancy works, and holding consultants delivery to account were all crucial valuation practices to the 'success' of the in-house intelligent buyer. There was some suggestion (Officer, LA\_21) that consultants lacked understanding about the organisation, including corporate sustainability goals and internal decision making processes. The latter had

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<sup>47</sup> The Swansea project was at the earliest stage, procuring consultancy feasibility studies and business case development.

led to a lack of coordination across relevant teams. Julia (Reading) added that it was difficult to get consultants to think outside of the conventions of the energy market. She stated, *“assessing all the different options doesn’t necessarily happen... it’s how the energy market is structured really... It’s very difficult to get third party views that are not really that biased in the market.”* Defining the scope of consultancy work was thus crucial to successfully bringing external expertise into council-led valuations. The tender specification of consultancy work was an essential procurement device in this, but officers’ accounts also made broader comments about the role of active and hands on project management by the council.

This meant having a clear idea about the role the consultant played within the council-led process. *“If you then want a consultant to do it, then [...] you have to [...] really give them the boundaries”* (Melissa, Camden). Previous experience had shown officers that without clear boundaries, consultancy reports tended to be *“very generic”* Julia (Reading). Sandra (Swansea) agreed, suggesting some studies for their heat network proposal had failed to make clear recommendations on adoption of a business structure, or about the heat source. She stated, *“they’d fudged around the energy centres and [made] no specific recommendations about [the] heat source”*. Sandra emphasised that heat networks consultants in particular, were sometimes hesitant to give firm *“advice”* and tended to include *“caveats”* in any recommendations.

This contrasted with Swansea Community Energy, where a charity specialising in supporting community energy had provided the council a consultancy report identifying five options which were compared with the project’s objectives<sup>48</sup>. Sandra emphasised comparison of the different business structures made the council’s decision much clearer. In the

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<sup>48</sup> Energy Saving Trust, which defines itself as a ‘profit for purpose’ organisation, also provided feasibility studies.

absence of recommendations, consultancy expertise was of limited use to configuring the in-house intelligent buyer.

Procurement regulations did not themselves provide any particular solutions to these issues. Instead, stronger use of the tender specification and ensuring consultancy outputs delivered as agreed were largely improved through capacity building by learning from other councils, and support from public sector intermediaries. For example, officers in England and Wales noted the Heat Networks Delivery Unit (HNDU) gave them greater capability to ensure consultants delivered high quality outputs in heat network projects.

HNDU provided funding toward project development costs (including toward consultancy fees for feasibility studies and business cases), and reviewed the scope and outputs of consultancy input. In Swansea, Sandra's colleague was also seconded into HNDU to cover South West and Wales so they benefitted from exposure to procuring expertise for heat network projects in other councils<sup>49</sup>. The secondment, combined with Swansea's reference point of the consultancy recommendations provided for Swansea Community Energy, ensured their subsequent specification for consultancy input on the heat network proposal was more suited to their goals. As Sandra explained, *"[it's] enabled us to become quite intelligent clients... our latest commission was very detailed, very specific about what we wanted."* HNDU then used Swansea's tender as a best practice example, sharing it with other councils.

Melissa (Camden) agreed, adding that the *"backing"* of HNDU helped put pressure on consultants to actually deliver against the scope of work, stating *"[it's] making sure you're getting the best out of your consultant relationships"*. More purposeful consultants expertise within the intelligent buyer was in turn thought to feed into improved procurement specification for

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<sup>49</sup> Other local authority officers in Islington and Gateshead had also been seconded into these roles, covering other areas of the country.

design and build contracts. Melissa thought a likely outcome would be higher performance standards in heat networks. As illustrated, the apparatus of procurement itself was not sufficient to assemble the expertise and trust needed in the intelligent buyer to deliver the high standard heat networks councils were developing. Instead, it required the creation of new support functions to ensure tenders for procuring consultancy services were suitable, and to exert pressure on design engineers to improve the level of service provided to councils.

***Procuring to procure: consultancy expertise to conduct aspects of procurement valuations***

When it came to procuring the energy project components, civils and construction, external consultancy expertise was also brought into valuations, feeding into design specifications and evaluation of tenders. Especially for unfamiliar projects, namely district heating, technical design typically went beyond in-house expertise. Technical input was however, also sought for more 'straightforward' projects such as solar PV.

For Gateshead district energy network, the tender needed to include a scheme design for bidders to respond to, but the energy team were unfamiliar with developing the model for CHP. *"You have to spend a lot of time doing the specifications [...] Particularly around the combined heat and power engines [...] that's a full model in itself... we had to work up as part of our procurement package"* (Andrew, Gateshead). Similarly, in Camden, they did not have the technical expertise to assess whether bidders' suggestions were a suitable design solution for the Somers Town Energy network. *"We're not designers... we're not able to... go, 'Actually... considering your expansion plans, this needs to be this diameter'"* (Melissa, Camden). A large engineering and design consultancy were contracted to complete a technical review of submissions. This outsourcing of energy procurement expertise was thus in response to gaps in the technical expertise needed for procuring

energy projects that do not align with the traditional in-house expertise of councils.

Officers noted that an overreliance on consultants led to *“becom[ing] an uninformed buyer”* (Melissa, Camden) which left the council exposed to unforeseen problems downstream. Andrew (Gateshead) also said that the use of consultancy support also added to project development costs. He stated, *“external consultants... can only take you so far and a financial consultant can charge a thousand pounds a day and then hang on to the spreadsheet. So it’s in your interest to get that in-housed as much as you can.”* Building the in-house Energy Services Team in Gateshead was therefore a priority.

In particular, Andrew noted a benefit of bringing expertise in-house was deploying officers more flexibly to projects. The team’s expertise enabled them to provide *“the full suite of energy services”*. This covered things like metering, billing and monitoring systems through to capital investments in energy projects. The team managed the whole process from initial concept to ongoing management. Having recognised the additional expertise needed to expand the local energy programme, they were increasing internal expertise for the technical design, hence feeding into procurement specification. Broadening the in-house expertise was developed over time.

Bristol City Council had similarly emphasised developing in-house expertise and had the biggest Energy Service with around 40 staff (in 2016). In addition, the council was delivering over £50 million investment in energy efficiency, renewable electricity and low carbon heat projects through an Elena ‘technical assistance’ grant of c.£2.5 million (see Chapter 5, Section 5.3). This grant allowed the council to recruit new staff to deliver the local project pipeline, but also provided a budget for contracting additional legal, financial and technical expertise. Importantly, when using consultants, they

focussed on upskilling officers in contract management and procurement at the same time. Subsequently, more of the design specification was completed in-house. The council had also managed to deploy their new in-house expertise to set up a framework agreement (see Section 9.2.3) to run a solar PV programme. This illustrates that where funding is in place to develop in-house teams, their expertise can be deployed for a variety of local authority-led energy initiatives.

***The critical link in valuation practices: back office procurement support***

As described in Chapter 6, a whole regulatory system governs public procurement. Professional Services provided a critical internal link for procurement valuations, by providing the expertise and resources needed for running compliant procurement, as well as for finance, legal and contract negotiations. The Procurement Dept./team were responsible for coordinating the procedural aspects of tendering, making sure it was compliant. Both energy and procurement specialisms thus needed to work hand-in-hand. *“We manage [...the] technical specification... and then [the] procurement team take all that... and they run the procurement and make sure we’re not doing anything illegal [and] we stand up to audit”* (Andrew, Gateshead).

It was emphasised that as a Corporate Service, Procurement Departments were specialist in procurement regulations and the mechanics of conducting procurement valuations, but not energy. Andrew (Gateshead) described his team as being, *“sort of like the client... they help us procure”*. Procurement teams were thus unable to detail specifics in the tender specification, but could potentially provide input on how to structure questions about the quality of suppliers. *“They [Procurement colleagues] would want us to sit down with them to decide those questions... as a precedent to what you are procuring... they’ve got to... help you make that decision”* (John, Derby).

However, this 'client' type relationship was not always established. Two particular issues emerged. First, some interviewees reported a lack of problem solving within Procurement Depts./teams to guide them through procurement for projects. According to Daniel (Cardiff), lack of problem solving in Procurement Departments was because of their necessary focus on compliance, which meant by default, they were *"not about delivery"*. This was in conflict with the focus of project officers. In general, whilst interviewees routinely acknowledged there was a role for regulation and oversight, the sentiment echoed was that public procurement was expensive, complicated and bureaucratic.

Second, the effect of cut backs to Professional Services including Procurement Depts./teams limited in-house capacity to run procurement and contracting for energy projects. For example, in Cardiff and Exeter, a greater level of responsibility for procurement remained with project officers. As project officers, they were not experts in the field of procurement, and found navigating the whole process complicated. Daniel (Cardiff) described muddling through procurement as best he could, relaying that, *"I often fear that I'm a bit of an amateur procurement expert, and that's a dangerous thing"*. Concerns included ensuring compliance with competitive tendering so that the council was not exposed to the potential for legal challenge over award of a contract. Application of procurement regulations are a specialist field of knowledge. Withdrawing that knowledge in the council erodes the ability to develop local energy projects.

In Exeter, Karen described procurement for their solar programme as a *"painful process"*, because both Procurement and Engineering Services had been hollowed out. With little experience in preparing tenders, Karen explained that, *"it was dreadful writing out your own specifications and tender documents"*. Like others, Exeter had engaged some external assistance for the procurement specification, which had included identifying what panel



rating to specify. Despite this, Karen was left feeling that ultimately they needed more in-house procurement expertise to support the solar programme.

Whilst this was a challenging environment for delivering the solar programme, Karen stated that the council had since made initial steps to address the problems via a procurement review. Karen attributed problems to, *“a legacy of cut backs and not understanding the effect that they could have”*. It was Karen’s view that this was a widespread problem among local authorities, where the impact of cut backs on functions such as procurement had not been fully considered.

Even relatively straightforward contracting was delayed as the result of downsizing Legal and Procurement teams for cost saving. In Haringey, for instance, there was a six-month delay to issuing a contract to consultants supporting the multi-party ‘dating agency’ Innovation Hub initiative. Ian attributed delays like this to austerity, stating, *“it’s a wider function of the absolute mulling [beating] that local authority budgets have taken”*. For Ian, the ability to participate in this kind of multi-party initiative as an intelligent buyer was directly undermined by the reduced in-house professional services.

Particularly damaging was the fact that this collided with councils having fewer policy tools at their disposal,<sup>50</sup> whilst being increasingly expected to engage with private sector developers. This was a point of deep frustration, with a sense of compounding inter-relating pressures limiting the council’s success in configuring the intelligent buyer.

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<sup>50</sup> Particularly the code for sustainable homes, and zero carbon homes policy in England (see Webb et al., 2017).

there's a really big issue there if... the world that we're heading into is about really engaging the likes of private developers. [...] It's really going to be increasingly reliant on really clever officers and politicians and having the back-up in-house to be able to argue the toss with the developer. And when it's taken you six months to produce a simple contract, it really like gives the lie of the land basically.

Ian, London Borough of Haringey

The extent of legal contracting for projects was also sometimes underestimated. This occurred in Warrington's programme to install rooftop solar on large distribution centre buildings. There was unclear building ownership and contractual relationships across large institutional investors, leaseholders which were separate large multinational organisations, and managing agents. Ultimately, negotiating over leases was more difficult than expected and involved considerably more input from Corporate Services than originally intended. As Louise (Warrington) reflected, *"If I could go back 12 months, I would sit down the heads of all of the departments and put cards on the table, [...] this is the implication for your team. [...] Are you on board? Are you going to support your staff to help us?"* Louise described relying on the good will of colleagues, which was running in short supply. Having recently shrunk Corporate Services because of budget cuts, configuring the intelligent buyer for the project was even more testing.

These cases illustrate that procurement valuations needed a critical mass of officer expertise to feed into procurement specification and evaluation, backed-up with professional services to run compliant tendering and engage in contract negotiation. District heating projects typically went beyond in-house energy expertise and demanded careful integration of high quality, trustworthy consultancy expertise to configure the intelligent buyer. Upskilling and expanding in-house teams was emphasised as crucial to developing a more substantial local energy programme. Cut backs to professional services also limited the capacity of the in-house intelligent buyer. Energy officers were left navigating procurement rules without the specialist expertise to do so. Limited capacity for legal contracting delayed multi-actor projects and

was perceived by officers as damaging to the credibility of the local authority as energy actor.

Limitations were not however a simple matter of expertise. Although no one person could perform valuations, assembling the in-house intelligent buyer was reliant on having enough human power to undertake the work. In some councils, austerity budgets meant there weren't enough people for value-making from local energy to expand beyond the projects already struggling through public procurement.

### **9.2.2 Close friend performs the Intelligent Buyer function**

The valuation practices in close friend configurations took specific approaches to assemble the expertise in local energy which fed into procurement. These entailed developing trusted supplier relationships, and securing the procurement resources required for valuations. Combined, these allowed this intelligent buyer to deliver procurement within a shorter timeframe than in-house and concession contract configurations.

In each instance, the close friend was a public or third sector organisation related to the council, albeit under different arrangements. Stirling was involved in collaborative procurement led by Glasgow, as part of a Scottish Cities Alliance initiative. Derby expected to contract Robin Hood Energy, a licensed energy company owned by Nottingham City Council, for a local energy tariff. For district heating projects in Aberdeen and Enfield, and renewable electricity in Swansea, Plymouth and Oxford, each council was involved in establishing an independent local energy enterprise. Councils considered these organisations best placed to create value from local energy. In particular specific goals concerning ameliorating fuel poverty, carbon reduction, and community ownership and engagement. Glasgow used its existing arm's length management organisation (ALMO) for its schools solar PV programme.

A distinct arrangement within this configuration materialised through a collaborative cross-council workstream in Scottish Cities Alliance<sup>51</sup>. Stirling was party to collective procurement of a single contract for feasibility studies assessing potential for urban turbines in six local authorities<sup>52</sup>. The idea of collaborative procurement was to reduce overall costs, avoid duplication and secure a high quality consultant. Hazel (Stirling), described that it helped to, “*share the pain, risk and benefit*” of public procurement.

As a valuation practice, procurement was led by Glasgow City Council. Each participating council input their chosen site(s) for assessment and fed into the procurement specification. An officer from another council, Hazel from Stirling, conducted the tender evaluation jointly with Glasgow. She stated, “*It’s a joint procurement [...] Everybody gets together with the questions and methods and statements... and everyone agrees it. And then [one] council leads.*” As lead council, Glasgow set the weighting with the agreement of other councils.

### ***Appointing preferred partners and dealing with competition***

Procurement rules usually prohibit directly appointing any organisation without a competitive process. Consequently, diverse valuation practices were configured in the areas of discretion within the regulations. This involved using either the Teckal device, open competition, sub-contracting through a VEAT device, or service level agreements. In each of these, responsibility to comply with public procurement rules transferred to the close friend, who was then responsible for procurement and other elements of the project<sup>53</sup>. In Aberdeen and Glasgow, close friends ran their own procurement

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<sup>51</sup> Scottish Cities Alliance is a partnership of Scottish cities and Scottish Government and is hosted at the Scottish Council for Development and Industry (a non-profit cross-sector economic development membership network in Scotland).

<sup>52</sup> This fed into wider co-working around other areas such as planning guidance for connecting to district heating (led by Aberdeen); and development of the Non-Domestic Energy Efficiency Framework, a procurement framework agreement for EPCs developed for Scottish public bodies (led by Edinburgh).

<sup>53</sup> This varied in each case. For example, Aberdeen Heat and Power also owned the district heating networks, whilst City Building in Glasgow was used for sourcing and installing the solar PV panels but

without direct input from the council. In Enfield, Swansea and Plymouth, new organisations did not initially employ staff, and the council offered access to procurement services through service level agreements. Thus, councils had differing levels of ongoing involvement in procurement.

### ***Valuations applying the Teckal device***

Aberdeen, Enfield and Glasgow utilised Teckal, a procurement device which classifies appointing the close friend (City Building Ltd (Glasgow), Aberdeen Heat and Power Ltd, Energetik Ltd (Enfield)), as though it were an ‘in-house award’ (see Chapter 6, Section 6.4). Teckal therefore provides a regulated exemption meaning there was no procurement award *per se*. Consequently, the standard competitive process for appointing these organisations was circumnavigated.

Procurement regulations only allowed a Teckal Exemption where 80% of business operations are provided to the local authority. The Teckal device is typically used for contracting with ALMOs that are the outcome of transferring an in-house council service to a separate body (such as housing stock, leisure services, catering, building management or waste). This included Glasgow’s Building Services which was transferred in 2006 to create City Building Ltd. A more diverse group of organisations than traditional ALMOs like City Building fell within the definition of Teckal. Aberdeen Heat and Power Ltd (AHP, est. 2002) and Energetik Ltd (est. 2015) are both independent companies wholly owned by Aberdeen and Enfield Councils. They were established with the specific remit of owning and operating district energy. They are hence much smaller organisations than ALMOs and did not emerge from the transfer of council operations to an external body. Nevertheless, meeting Teckal definitions they were directly appointed to procure, own and operate district energy networks.

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the council retained ownership of the project.

Having made the direct 'in-house' award, the Teckal device transferred responsibility to comply with public procurement rules to the close friend, who was then responsible for delivering set elements of project on behalf of the council. *"They [Aberdeen Heat and Power] go and do the public procurement compliant tender parts for the district heating system, so we don't have to"* (Martin, Aberdeen). Thus, these organisations are brought into the value-making process and have direct responsibility on the councils' behalf.

Glasgow's direct appointment of City Building via Teckal procured and installed solar PV across school buildings. Reductions to the feed-in tariff required moving quickly with accrediting buildings, and sourcing and installing PV panels. Open procurement with multiple bidders, and establishing a new relationship with a selected contractor, would have taken too long. Crucially, the council would miss out on securing the higher rate of subsidy. *"If we were to bring in a company external to this, that we'd never worked with before [...] that would have cost us too much time"* (Stephen, Glasgow). The existing relationship gave confidence in what the Council was buying. *"We've worked with City Building before, they've successfully deployed for us, we knew what they could do"* (Stephen, Glasgow). The Teckal device was thus a mechanism within procurement regulations, that allowed circumnavigating the requirement for open competition. It appointed a trusted supplier and reduced procurement timelines. In turn, quickly assembling the intelligent buyer with City Building enabled Glasgow to meet their goals of securing a long-term income stream from the feed-in tariff, emissions reduction and engage local people in sustainable energy.

The ability to avoid open procurement was seen as *"easier"* (Martin, Aberdeen) compared to the complexity of competitive procurement routes. According to Martin, competitive procurement for the heat networks would take longer because the council would need to procure external expertise for the scheme design. This would complicate the procurement specification for the

energy centres and heat networks. Internal decision making procedures to approve this, plus the time to appoint a consultant, complete the work, and run the actual procurement for building the network, would mean that the whole project would take longer to deliver.

By contrast, working with AHP resolved issues of expertise, trust and time. Their specialist expertise and experience in district energy was particularly significant because responsibility for design and operation fed into their capacity to ensure high quality procurement for the networks. *“Procurement is part of their [AHP’s] job and that expertise is crucial [...] A fail seems to be down to corner cutting or a poor procurement, a poor design. [...] you want someone who specialises,”* (Martin, Aberdeen). Thus, working with the close friend resolved some of the issues which in-house configurations had been challenged with resolving.

#### ***Valuations via the tender specification in open competition***

Where the Teckal device could not be invoked, alternative valuation practices relied on running a standard open competitive procurement process. In these instances, officers needed to make full use of the interpretative flexibility afforded within defining the tender specification. By exploiting this area of discretion, it was possible to steer the process so that the preferred contractor, here the close friend, was most likely (but not guaranteed) to be awarded the contract.

Derby expected to adopt this approach to procure Robin Hood Energy (owned by Nottingham City Council) to provide the back-office services for Ram Energy, a local energy tariff in Derby. Similarly, Swansea awarded Swansea Community Energy (SCE) – a community benefit society set-up by the council – the contract for installing, owning and operating solar PV across council-owned buildings. They needed to balance avoiding too much competition that might lessen SCE’s ability to provide the best bid, with

ensuring they would not be challenged by another supplier for offering preferential treatment to SCE.

obviously we want the local company to get that contract... to make sure we don't break laws associated with procurement, [...] how we advertise... ha[s] to be careful [...] we make sure there's some element of competition [...] but] we're fairly confident that it only becomes one company.

Sandra, City & County of Swansea

Detailing the community benefit and income to the cooperative's members within the tender specification and scoring was crucial to meeting the test of open competition. It also helped limit the chances of another organisation winning the contract. Although this didn't eliminate the risk of SCE not legitimately winning the contract, Sandra thought it was unlikely to be a major problem. Updated procurement regulations have since attempted to make it easier for local authorities to promote awarding contracts to SME and mutual organisations.

However, there was no guarantee open competition worked for appointing a close friend across all energy-related procurement. In 2018 for example, Bristol Energy (owned by Bristol City Council), failed to win the council's gas and electricity supply contract by a slim margin, which was awarded to a major energy utility (Bristol Energy, 2018). Thus, the requirement for open competition means that reliance on tightly defining the tender specification was not always a fully reliable route to securing preferred contractors.

### ***Valuations applying the VEAT Notice device for direct appointments***

Working on a local programme of projects with community owned local energy enterprises required further adaptation beyond reliance on either Teckal or open competition. In Oxford, the city council identified the Low Carbon Hub (LCH), a local energy enterprise it has supported establishing, as the organisation with the, *"drive, ideas and experience that related to community owned energy and how that could be scaled up"* (Fiona, Oxford). However, IEE funding rules prevented LCH from applying to lead the



Mobilising Local Energy Investment project (2012-2016) which created a pipeline of low carbon projects. Oxford City Council therefore applied for, and held, the IEE grant award, meaning the council was formally responsible for delivering the project pipeline<sup>54</sup>.

LCH was directly appointed via a device called a VEAT (Voluntary Ex ante Transparency) notice. This is permissible in instances when the local authority determines there is only one suitable supplier. This supplier (here, LCH) is directly awarded the contract and a VEAT notice is issued giving other suppliers ten days to contest the award. Using a VEAT notice, LCH went on to deliver renewable energy projects across public and commercially owned buildings and land throughout Oxfordshire. LCH could also access 'technical assistance' funding provided by the IEE grant (held by the council<sup>55</sup>) to support project development. This included establishing community ownership, running share offers, coordinating with building owners, and procuring installers and maintenance contracts.

The responsibility for compliance with public procurement rules also applied to LCH. With responsibility for public procurement delegated to the Hub, the council had then not been directly involved in procurement for the project pipeline. For example, the LCH had established a procurement framework agreement (see Section 9.2.3) for delivering the solar PV projects and the council had not directly fed into setting the evaluation criteria for selecting suppliers. Thus, once responsibility for procurement passed over to the close friend, the council does not automatically retain an ongoing role in procurement.

### ***Procurement valuation practices change over time***

Conversely, in Plymouth the council had initially provided procurement services for Plymouth Energy Community (PEC). PEC was established in

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<sup>54</sup> The county council was also a formal project partner.

<sup>55</sup> The council also provided short-term construction finance loans to the Hub.

2013 where local political priorities promoted a cooperative council model for delivering local benefits<sup>56</sup>. A service level agreement paid for council officer time for day-to-day management as initially PEC didn't employ its own staff.<sup>57</sup> For the solar projects PEC made use of the council's procurement services.

However, PEC was keen to, "*maximise local benefit and... work with reputable, reliable, local installers*" (Tim, Plymouth) and in practice found council-led procurement unable to deliver this. Council eligibility criteria around a suppliers' financial position excluded some smaller local contractors from tendering. Some local suppliers also said the costs of engaging in public procurement were too high because of the warranties expected for workmanship and the indemnity insurances needed. Reflecting the same issue as Glasgow (using the Teckal device), PEC also found Council-led procurement took too long when the subsidy regime for renewable electricity which they were trying to secure was rapidly changing.

In response, as an independent organisation, PEC took the decision to run its own procurement, rather than continue to rely on the council service.

[Plymouth Energy Community] piggy-backed onto the council procurements before, now we've put that to one side, [its] too expensive and we're [PEC] able to get cheaper prices and use more local contractors who have a good track record and a good financial [position]... obviously we [PEC] looked into credit record and all the rest of it.

Tim, Plymouth City Council

Although working with the council-led procurement was initially convenient, it had drawbacks to PEC in terms of assembling value through a local supply chain, as well as lowering costs by accessing more affordable contractors. Being an independent organisation it was able to reconfigure the intelligent

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<sup>56</sup> The 2012 Plymouth Labour Party manifesto included a cooperative council model for delivering local benefits and was integrated into the council's corporate plan following local elections.

<sup>57</sup> Loans and a start-up grant to establish the organisation were also provided by the Council.

buyer again, away from the council model configured around public procurement regulations.

Across these cases, expertise, trust and procurement timescales were all reasons for working with close friends. In some cases they were already a trusted delivery partner which the council had worked with previously. For newer relationships, a trusted partnership was built through councils' involvement in their establishment, which had solidified shared goals. Close friend configurations also provided specific expertise in local energy, hence overcoming some of the issues discussed with the in-house intelligent buyer. This was especially true for district energy in Aberdeen and Enfield, and community-owned renewable electricity in Oxford and Plymouth.

Although use of the Teckal device, VEAT notice, and tender specification were successful, all are open to challenge. Concerning open competition, as seen in Bristol, there is also no guarantee that another organisation won't submit a response that scores higher than the close friend.

### **9.2.3 Framework agreement devices in the Intelligent Buyer**

Framework agreements intend to reduce the complexity of multiple dimensions of public procurement. As explained in Chapter 6, a framework agreement can be established for any kind of procurement. Procurement frameworks targeted four types of energy project in the sample. Primarily, upgrades to council estates through EPCs; but also, renewable electricity, retrofit to social housing and district energy.

Framework agreements were costly and time consuming to establish but, once in place, offered an OJEU compliant route to standardised common procurement by setting out the types of works, services and contract structures available. This was supposed to smooth navigating procurement rules as project owner. Critically, this configuration was expected save time and money by avoiding open competitive procurement for individual projects

(Department of Energy & Climate Change, 2015; Local Partnerships, 2016). Instead, local authorities 'call-off' the framework agreement, rather than the open market, through issuing a 'mini-competition'. This mini-competition device is intended to simplify valuations by restricting access only to the pre-approved supplier list. The pre-approved supplier list was expected to weed out poor quality suppliers, ensure minimum levels of energy expertise needed for projects, and determine whether suppliers offered value for money. In principle, the procurement framework should assist in establishing trust in the buyer-seller relationship.

This configuration, however, was reliant on the suitability of a framework agreement for the individual energy project. Local authorities can and did establish framework agreements themselves (e.g. Warrington, Bristol, Peterborough), but as noted above they are resource intensive to set-up. They can also access an existing framework agreement that they are eligible for (e.g. Greenwich, Manchester, Cardiff, Hull, Cambridgeshire, Edinburgh, Leicestershire, Leicester), but this proved more complicated in practice.

### ***The adaptability of the framework agreement device***

Despite the relative ease in accessing existing framework agreements, in practice some projects were unable to fit within the scope of an individual framework agreement. For example, in both Greenwich and Manchester, Elizabeth and Ben reflected that because of the difficulties of moulding the framework agreement to the energy project, they would not use the chosen framework agreements again. In Greenwich, RE:NEW, available to local authorities and social housing providers in London, was used for the Barnfield housing estate renovation (577 homes across 30 blocks). In Manchester, the Carbon and Energy Fund, primarily for NHS bodies, was used for the Civic Quarter heat network.

In Greenwich, the council were tackling energy retrofit and housing upgrades at the same time, attempting to more systematically incorporate energy into

whole house renovation (see Chapter 5). However, when they encountered procurement it became more difficult to deliver this multifaceted project within the framework agreement. RE:NEW was designed around energy retrofit of social housing. However, as a whole house renovation that incorporated energy retrofit as one component, the project went beyond the scope of the framework agreement. Squeezing the non-energy elements into the contract was particularly challenging, as Elizabeth explained, *“from a procurement and legal perspective it’s been horribly complicated just because of the kind of large scale nature of the works and the fact that we are kind of shoe-horning it into our procurement arrangement”*.

Furthermore, framework agreements are time limited and involve re-tendering through open competition every few years. RE:NEW was close to its expiry date as Greenwich issued the mini-competition. As the council was attempting to resolve these issues tension emerged over division of responsibility. This involved GLA who had initiated the framework agreement, Capita who had been contracted by GLA to act as the managing agent and provide technical support, and Greenwich as ‘project sponsor’. Elizabeth’s account noted that there was a lack of willingness from both GLA and Capita to take a hands-on problem solving role to assist the council.

Thus, whilst framework agreements intend to smooth procurement, both the scope of the project and the sets of actors involved made it more challenging for the council to actually configure itself as the intelligent buyer. Existing framework agreements have already set some of the parameters for determining value in a project, which are not always aligned to how a project unfolds. This configuration of the intelligent buyer was therefore unable to sufficiently incorporate the project in some instances.

Utilising the ability to set up their own framework agreements, some local authorities took on the additional resource burden of establishing them

themselves. Peterborough designed its own framework, Peterborough EnPC, for energy performance contracting (see Chapter 5, Section 5.3).

Peterborough EnPC was a single-supplier framework that lasted eight years and was made available to other local authorities (discussed later in section). Bristol and Warrington also established their own framework agreements to speed up procurement for their solar PV programmes. Angela (Bristol), and Tony and Louise (Warrington) reflected that, compared to open procurement for an individual solar PV project the framework agreement was hard to set-up. However, once established, they made subsequent procurement quicker and easier than open competition.

In Bristol, set-up costs and resources had also been covered by its in-house team (discussed in Section 9.2.1), which was supported with EIB Elena funding. According to Angela, because they could go straight to issuing a mini-competition, it reduced the internal approval required for procurement. Thus, for their own solar programme the framework agreement provided more consistency in procurement.

Angela explained how this allowed them to operate more like a business and sidestep internal bureaucracy for approval. However, reductions to the feed-in tariff for renewable electricity had stopped their use of the framework agreement. This was because they could not secure prices that made the business cases affordable, and some suppliers on their own framework went out of business. At the time of our interview, Angela reflected that this might only be temporary issue. If costs came down they might be able to re-establish the framework agreement with supplier and run further solar PV projects in the future. As this shows, the high level of user discretion and adaptability of the framework agreement device is not detached from the energy project. Once the subsidy regime changed, the device and the valuation practices in this configuration became unusable in this case.

### ***Securing trusted, high quality, suppliers with energy expertise***

For EPC projects, the contractor's technical expertise and commitment to a long-term partnership with the council were perceived as key. *"Buying into that knowledge and that partnership with somebody was really important to us"* (Sophie, Leicestershire). A lack of in-house expertise and capacity in energy management were reasons driving a focus on contractor expertise (including in Cambridge, Leicester and Leicestershire). This was partly because of difficulties in recruiting engineering expertise on public sector salaries, but also because of cut backs from austerity budgets which reduced in-house resource.

The fact that EPC projects targeted the corporate estate and hence fell within the council's direct responsibility was significant to securing a long-term partnership with high quality solutions. *"We are going to be looking after these [buildings] for a number of years"* (Rob, Calderdale). The framework agreement device itself should in principle mitigate the issue of structural distrust of suppliers because quality assessment took place at the set-up stage. For EPCs, the contract guarantee should provide another layer of security. Thus, with minimum standards to get onto a supplier list and a guaranteed contact, Rob (Calderdale) pointed out that, *"in theory the quality is in some way guaranteed"*.

Despite this, councils were unsure whether, in practice, enough quality checks had been completed in the pre-approval process for framework agreements. Ed (Fife) for example, said one supplier bidding on a mini-competition issued via the Scottish Government biomass framework did not meet the minimum financial standards the council itself set.

Officers also remained concerned about suppliers' expertise. Lowest cost evaluation was thought to open up potential for poorer project outcomes. In part this was attributed as the result of low standards within the contracting

and supply chain. As Trudy (Edinburgh) explained, *“with many contractors... the experience isn’t quite there”*. To manage this, Trudy (Edinburgh), Rob (Calderdale) and Sharon (Cambridgeshire) all emphasised that it was better to pay more in upfront costs for a better long-term solution from high quality suppliers. As Trudy said, *“If you skew it so it’s more about price... You’re leaving yourself open to having something that’s really cheap, [and...] you have no real sense of their delivery, approach, technology”*.

As explained in Chapter 7, local authorities made use of the interpretative flexibility in setting the price-to-quality ratio to manage this. Nevertheless, the price-to-quality ratio was a theoretical valuation and officers devised valuation practices to test whether claims made by suppliers were genuine. This included the relatively simple action of cross-checking component costs and challenging those which seemed inflated. Councils also explored the supplier list in more detail. Edinburgh took the important step of inviting bidders in for an interview to explore their experience and expertise.

Equally, confidence to proceed was gained from speaking to other councils that had recently completed an EPC project using the same framework agreement. For example, officers in Hull spoke to counterparts in Leeds about their experience of using the national RE:FIT framework agreement to find out more from a trusted local authority perspective. Councils also sought input from the managing agents, which provided varying levels of consultancy services to councils. Application of the framework agreement, at least for EPC projects, thus went beyond drawing on formal guidance. It was shaped by the experience of other councils, managing agents who mediated how to apply the device, as well as localised valuations practices such as informal interviewing. In turn, these shaped how an individual project was assembled.



### ***Negotiating competition within the procurement framework device***

Avoiding full open competition is one of the ways framework agreements intended to reduce procurement timelines. However, this assumes that the pre-approved competitive suppliers are available, willing and interested to compete for the work when the 'mini-competition' tender is issued. As explained above, some suppliers went out of business. But it went beyond this; availability and interest in bidding for the contract also shaped how useable this configuration was in practice.

Cardiff initially ran a mini-competition for constructing and installing its hydropower plant at Radyr Weir through the Water and Environment Management Framework (WEM) run by the Environment Agency. Following lack of responses, (this was around the time of the Somerset floods during 2013-14 and all contractors were already busy), they subsequently re-ran it under open procurement. This extended the costs and timeline of procurement which delayed the project, and also meant the council had to evaluate tenders from suppliers that had not been pre-approved. Daniel explained that contractual issues over delivery ensued.

The entire Radyr Weir project also hinged on being registered for the higher rate of feed-in tariff subsidy, as this paid toward the costs of the project. Following significant delays of almost a year, the project was registered in the final days left to register before the subsidy rate dropped. As Daniel explained, it was clear that the whole process had added pressure and stress to getting the project operational. The extent to which the framework agreement device provides a procurement 'solution' is hence dependent on suppliers being available. An unrelated flooding event in South West England destabilised the ability for the council to use this device. To compensate they had to develop alternative valuation practices configured under open

competition. This caused delays, and increased costs and resource requirements.

### ***The role of competition in demonstrating 'best value'***

Competition was considered important because it was invoked as key to demonstrating 'best value' to council decision makers. These were an audience concerned with value for money and documenting accountable decisions (see Chapter 7). Framework agreements usually include multiple pre-approved suppliers which enables competitive valuations. However, public procurement regulations allow framework agreements to be structured around a single supplier.

Councils interpreted the significance of how competition was organised differently between single and multiple-supplier framework agreements for EPC projects. Peterborough Council used the interpretative flexibility within procurement to establish Peterborough EnPC in 2013 through 'competitive dialogue' (one of the OJEU compliant types of procurement). It was an eight year single-supplier EPC framework available to all local authorities. Mark – who'd been instrumental in establishing Peterborough EnPC – was satisfied the process for appointing the single supplier was a competitive process of market testing. This included outline interest from around 13 potential suppliers. Six bidders engaged up to outline solution stage and two bidders engaged up to full evaluation where different solutions were discussed with the council. Consequently, there was no use of the mini-competition device, scoring or evaluation in procurement valuations for an individual councils' 'call-off' from Peterborough EnPC.

Conversely, RE:FIT – initially established by the GLA for London public sector organisations, but since extended across the UK<sup>58</sup> – operated as a multiple-supplier framework agreement (refreshed every three years). As

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<sup>58</sup> RE:FIT was also the template for establishing a Scottish specific framework the Non-Domestic Energy Efficiency Framework (NDEEF), with Edinburgh the lead council for Scottish Cities Alliance.

individual councils' 'call-off', valuations from RE:FIT involved the mini-competition device, and bidders were evaluated with scoring and a price-to-quality ratio.

Mark (Peterborough) thought the mini-competition device added unnecessary time and costs to project development, and Peterborough EnPC was specifically designed to negate this step. According to Mark, when establishing the framework agreement, the process of market testing meant they'd appointed the best partner available from the market for all users of the framework agreement. Further competitive procurement between suppliers for individual local authority contracts simply duplicated work. Mark reported that Peterborough EnPC was being taken up by Basingstoke, Durham and Luton, amongst others. Chris in Leicester also said they were in the process of signing-up.

However, both Sharon (Cambridgeshire) and Rob (Calderdale) were unsure about their own council's ability to demonstrate that the supplier offered 'best value' without multiple bidders competing.

Peterborough [EnPC] was just one contract to [the single supplier] and they said, "We've decided that's best value." But I couldn't see where we could really demonstrate it. We needed a framework [agreement] of companies to do that.

Rob, Calderdale Council

In these cases, competition at the point of selecting a supplier was considered crucial to achieving 'best value'. The simplicity of the single-supplier framework did not easily translate into existing ways of working across all councils. From this point of view, the single-supplier framework appeared both more complicated and less transparent. *"I didn't feel like [Peterborough EnPC] really understood how councils look at things, which was kind of odd"* (Rob, Calderdale). In particular, the structure of Peterborough EnPC – which involved a refundable access fee to the single supplier – was seen as less *"defendable"* (Sharon, Cambridgeshire) than

running a fully documented mini-competition which provided the paper trail of a council-led valuation.

However, in practice not all suppliers on a multi-supplier framework responded to a mini-competition. In Cambridgeshire they had three responses (of which only two were compliant). The non-compliant bidder had a strong bid, which Sharon reflected would have introduced too much competition between the top two tenders. Thus, negotiating value through competition was nuanced. A single supplier did not provide enough competition (irrespective of upstream competition with many), whilst in this instance, three suppliers were too many to feasibly manage procurement valuations.

Furthermore, Cambridgeshire's RE:FIT project had used the interpretative flexibility in the tender specification device to structure the remit of the EPC to include the city and district councils in the area. This meant these other councils could directly contract the county's selected EPC supplier on their own local EPC projects. In effect this operated as a localised version of the single-supplier valuations because this too negated the need to run subsequent mini-competitions to the whole supplier list. However, what differed was that these participating councils input into Cambridgeshire-led valuation and appointment of the supplier, and had the documentation to evidence it. As an outcome, the same debate over the role of competitive award of contracts in valuations practices was not raised.

#### **9.2.4 Concession contracts and the Intelligent Buyer problem**

Long-term concession contracts involved procuring a private sector company to design, build, finance, operate and maintain the energy initiative for the contract duration of between 25 and 40 years. In this sample it was used for district energy in Birmingham, Leicester and Newcastle. During the contract, the concession holder had exclusive rights over the permitted development,

and the local authority was the paying customer. This configuration therefore represented the highest degree of outsourcing for delivering projects.

The ‘competitive dialogue’ procurement device was used when procuring long-term concession contracts. This was the most complicated, drawn out and expensive of the four procurement types. Competitive dialogue was only permissible when the council was unable to determine the technical specification, and/or legal and financing of the project prior to procurement (see Chapter 6, Section 6.4). Long-term concession contracts for district energy fitted this definition because the private company was responsible for designing the networks (i.e. the specification) and for the majority of the financing. Although, some public finance contribution was made in each case.

Importantly, this meant that potential suppliers were heavily involved in defining the parameters of value of the energy project, spanning its scale, scope and customer base of projects, legal structure and financing.

### ***Procuring the concession contract***

At the time of data collection, procurement was underway in Newcastle<sup>59</sup> and had already become more complicated, expensive and time consuming than the council originally envisioned. Overall, procurement took over three years to complete (June 2015 – August 2018) with several further months until conclusion of negotiations allowed public announcement of the JV. A year into the process, David already reflected it was, “*interminably long, far too long as far as we’re concerned*”. Procuring the concession contract was estimated to cost around £800,000 which had been supported with a grant, and Phase 1 capex. costs were estimated at £15 million (costs may have gone up since).

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<sup>59</sup> In December 2018 the 40-year concession holder was announced as Engie Ltd under the JV Regenerate Newcastle Partnership: <https://www.engie.co.uk/about-engie/news/engie-signs-pioneering-40-year-partnership-with-newcastle-city-council/>.

Although procurement was led by the city council it also included Newcastle University, and Legal and General through a new development called Science Central, as well as health bodies in the area. Overall, David noted there was a lack of coherence and clear decisions from the public sector partners which introduced new risk factors within procurement itself. *“Getting anybody to say definitely what they want to do and are going to do is two different things. And that has given uncertainty to the bidders”* (David, Newcastle).

The lengthy procurement process intersected with the wider programme of governing local authority funding. During procurement, the council was offered time limited capital grant funding of c.£3 million<sup>60</sup> to contribute to the Helix Energy Centre and district heating network serving Science Central, including the procurement costs noted above. Originally the Helix network was intended for a later phase of district energy development. However, the grant funding presented an opportunity for the council to minimise its direct financial contribution into the scheme and was perceived to represent better value for money.

Due to the heavy involvement of suppliers in designing the energy projects, in the dialogue stages the two bidders in Newcastle were tasked with designing and costing up development. This had already been structured around the Civic Quarter network (identified as the first project to be developed under the contract) when the grant funding was offered for the Helix network. Procurement rules heavily promote the fair treatment of suppliers. This meant modifying the scope of the tender to the Helix network, as the first scheme to develop presented a considerable challenge. Procurement was already live and had proceeded to the point where two final

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<sup>60</sup> From the Local Growth Fund, administered through the North East Local Enterprise Partnership.

bidders were designing against Civic Quarter. Newcastle had also already invested time and effort in its own work on the benchmarking for Civic Quarter. It had mocked up its own capital costs, connection charges and tariffs for the scheme which they gave to the two bidders to respond with their own designs and costings.

The time limit condition stipulated in the grant funding, which had set in motion the entire modification, was then relaxed; compounding frustrations over how convoluted the procurement process had become. David surmised that, had the grant funding time limit been more flexible from the outset, they may have avoided making modifications within procurement of the concession contract and navigated the process more smoothly.

### ***Value-making under the concession contract***

Although procuring the concession contract was particularly challenging, once in place, it was expected to provide a number of specific solutions to the council. For instance, a single long-term relationship with a district energy specialist was expected to secure continuity in the local delivery approach for district energy. According to David (Newcastle), this was crucial to their ambitious goals. He explained, *“It was very much related to the ambition to have a city-wide network, not to just build one off schemes and have to keep procuring them with a different partner each time”*. One time procurement to create a JV in Newcastle was thus preferable to multiple different delivery partners procured for each new phase of network development.

Experiences in Birmingham and Leicester, however, where the concession contract was already operational, illustrated that this was much more challenging to secure. In particular, requirements about private sector return on financial risk for network expansion had been underestimated. Consequently, although network expansion had been written into the contracts, practical routes for enforcing this were minimal.

One of the stipulations is to grow the strategic ambition of BDEC [Birmingham District Energy Company]. [...] It's quite clear though [...] they're very focused on their bottom line on this and won't do anything [with] financial risk... We can talk about the grand visions of Birmingham City Council to decarbonise the city centre, but ultimately if we are just relying on Engie through BDEC [...] that's not going to happen.

Simon, Birmingham City Council

Beyond the initial phase written into each contract, without guaranteed customers signed up to long term supply contracts, the concession holder had little incentive to proceed with network expansion.

Especially difficult was growing area-based networks that extended into social housing. These were perceived as less profitable. In both Birmingham and Leicester the only domestic customers connected were those specified in the original phase of the contract.

Despite an *“original aspiration”* being to serve those in fuel poverty, connections to adjacent social housing in Birmingham were unachievable. This led Simon (Birmingham) to conclude the aspiration to address fuel poverty through the concession contract was *“slightly misguided”*. Birmingham was considering whether the concession holder would extend to the nearby tower blocks if they accessed a grant or directly made a financial contribution. However, Simon was doubtful, stating, *“I think fuel poverty is going to have to be delivered through another means outside of BDEC”*.

In an attempt to mitigate this, during procurement in Newcastle, they attempted to ensure that connection charges and tariffs would be affordable to developers, building owners and customers they wanted to serve under the 40-year JV, including domestic customers. As the council also has an ownership stake in the JV, this could open up a route to developing more coherent area-based networks than the SPV concession contract model.



### **9.3 Conclusion: the limits to Public Procurement for local energy**

This chapter investigated public procurement in local energy projects and revealed diverse valuation practices configured to navigate its complex rules. Analysis was based on the argument that as a valuation framework, public procurement is one component of the 'programme of governing'. Miller and Rose (2008, p. 21) explain that understanding a programme of governing involves turning attention to the "forms of calculation [and] ways of categorising" that attempt to fix the terms of representation. Applied to local authority energy, I treated public procurement as a set of norms and standards that attempted to fix the terms of valuation practices.

Public procurement regulations outlined in Chapter 6, detail a variety of different possible routes and options for structuring buyer-supplier relationships. Crucially, these were all built around political-economic beliefs concerning the promotion of competition as the most efficient means through which to assemble value. For instance, individual procurement devices such as framework agreements created specific rules for how to organise competitive valuations in terms of negotiating value, eligibility to compete, and resource and time intensiveness.

As sets of valuation practices, findings uncovered that local authority agency to adapt procurement to deliver the envisaged project was dependent on configuring multiple forms of expertise, trust and resources. 'Competition' as the ideal means through which to create value was contested. Councils had different interpretations and strategies concerning their obligation to make use of and/or demonstrate that value had been mediated through competition.

The 'competitive markets' did not themselves automatically produce high quality suppliers, or provide agency for local authorities to hold contractors to

account. Instead, I characterised that the calculative agency required to navigate the complex web of procurement rules and assemble value was dependent on configuring an 'intelligent buyer' in local energy. Each configuration was shown to assemble differential capacity to negotiate value within procurement. They involved different buyer-seller relationships including the in-sourcing and out-sourcing of forms of energy and procurement knowledge and expertise, and recruitment of specific procurement devices to coordinate valuations.

In turn, the agency of the four intelligent buyers had material consequences on the kinds of actors involved in development, procurement, and ongoing operation and ownership of local energy projects. Procurement, therefore, was not detached from the assembly of value, but rather a constituent element shaping the associated forms of value, which could be created from energy projects under each configuration.

These findings provide new knowledge in understanding how the programme of governing through valuation frameworks shapes energy projects. With limited resources at local authorities' disposal, configuring all intelligent buyer configurations within the boundaries of formal public procurement valuation systems was highly demanding. Officers had a shared perspective that energy project procurement was time consuming, resource intensive and complicated. In support of this, 21 respondents in the LEUKES questionnaire also reported that public procurement rules were constraining local energy projects. Only five said it was either enabling or motivating. This indicates the need to further examine the effects of 'austerity localism' (e.g. Morris et al., 2017) in local authority energy. In particular, the contradiction between the in principle autonomy over how to procure local energy, compared with the reality of constrained resources and unfamiliar territory of procuring often novel energy projects.

Findings also provide evidence in support of the argument that expertise is significant to a host of different forms of valuations (Lamont, 2012). These findings show that expertise was critical to configuring the intelligent buyer and making use of the areas of interpretative flexibility within local energy procurement. The tender specification for instance was one key area where the local authority could mould procurement. But exerting control was dependent on having the combined energy and procurement expertise to do so. This reinforces findings that the in-house composition of expertise influences how local authorities proceed with ownership and operation of local energy infrastructure (Hannon & Bolton, 2015; Roelich et al., 2018; Rutherford & Jaglin, 2015; Webb, 2015).

Additionally, findings provide new evidence about the significance of trust in valuation practices, which appears to have been underexamined. For example, Lamont's (2012) review, argues for greater attention to be paid to the role of human judgement, but there is less around the role of the building trust within valuations. Similarly, trust itself makes no clear appearance in the articles published in *Valuation Studies* (2013–2020). These findings, however, show that trust was central across sets of valuations practices in all configurations. For example, although the pre-approval of suppliers into framework agreement configurations was expected to only permit trusted suppliers and therein streamline the buyer-seller relationship, councils developed additional valuation practices to supplement this. Hence, trust was a central rather than peripheral element of these valuation practices. This indicates the need for further investigation into the significance of trust in valuations, particularly where energy projects involve multiple actors across project development, procurement, ownership and ongoing operation.

This chapter has considered the ways in which the value of local energy was mediated through public procurement. The current programme governing local authorities stipulates that competitive valuations are the optimum route

to securing 'best value' solutions for the public sector. The ability to navigate an energy project through these complex processes that attempt to create 'markets' and 'market actors' and conduct the demanding work of procurement valuations, was reliant on expertise, establishing trust and sufficient resources. The next chapter brings the thesis together into a final discussion about the struggles to assemble value in local authority energy.



## **10 Conclusions: Struggles Over the Value of Local Energy**

### **10.1 Research problem revisited**

UK Local Authorities are a critical institutional civic actor for UK 2050 net zero climate goals. However, literature (see Chapter 2) emphasises current investment in local energy and carbon saving projects is fragmented, and not at the pace or scale needed. Evidence from qualitative analysis of 40 local authority case studies was used to analyse the intersecting dimensions of valuation practices in local energy projects. Findings reveal that the value of energy projects is not pre-determined, but is shaped by processes of ‘value-in-the-making’.

Local authorities are required to negotiate formal valuation frameworks at key junctures throughout project development. Three of these are the Best Value Framework, the business case model and public procurement. The application of these tools and decision making procedures represent the contemporary programme of neo-liberal governing which attempts to improve public sector efficiency through market organising techniques.

In these terms, these valuation frameworks represent “the complex of mundane programmes, calculations, techniques, apparatuses, documents and procedures through which authorities seek to embody and give effect to governmental ambitions” (Rose & Miller, 2010, p. 273). Governments across the UK advise these valuation frameworks are able to balance and ‘optimally’ represent economic, social and environmental value in evaluation of local investment options. However, evidence from the case studies demonstrate that this balancing did not routinely happen in practice.

Instead, it was largely short-term financial value that was optimised during the application of these devices in energy project development. The impact was that, for the most part, only those projects which could be framed within confines of short-term financial affordability were developed. Long-term project investments were largely disincentivised. Many projects were either delayed or scaled down, whilst others did not get beyond the negotiation of these valuation frameworks and were abandoned, or shelved until a new window of opportunity presented itself.

Neither carbon saving nor social benefit were compelling enough forms of value to justify proceeding with project development through to operational stages. Instead, these forms of value were marginalised in this process. Financial value in its multiple guises, could not easily be escaped.

Where projects went ahead, they required considerable ingenuity to establish alternative decision making – or valuation – practices. But overall, energy projects that emerged remain smaller scale than demanded by climate protection goals. For example, almost every UK building needs to be net zero carbon to meet 2050 policy goals (CCC, 2019), yet even net zero carbon local authority estates cannot be created via these tools and procedures. From the perspective of municipal scale energy and carbon reduction, in their current applications, these valuation frameworks do not serve the goals society needs them to.

The conceptual model applied in this thesis bridges economic sociology of valuation and programmes of governing. According to the sociological concept of valuation (Muniesa, 2012), the value of something is not fixed but malleable; its value is not the same before and after it has been valued. The implication of this conjecture is that the value of an energy project is assembled through active, material processes of valuing, not by some pre-given characteristics.

Economisation, Çalışkan and Callon (2009) tell us, is one of the most ubiquitous forms of valuation in contemporary advanced capitalist societies. The value of an energy project is hence likely to be assembled in economic terms. Insights from programmes of governing (Miller, 2008), explain that it is through rules, guidelines and instruments of valuation, that governmental agendas exert political power in an attempt to control the actions and agency of local authorities. This re-inserts the political agenda being pursued by promotion of particular forms of calculation, such as economisation. Governmental agendas are thus implicated in the economisation of society, and vice versa; rather than detached processes, they are intertwined and self-reinforcing. Applying this combined perspective to local energy revealed a major gap in sociological understanding about how valuation practices take place within project development, why, and what happens as a result.

In the remainder of this chapter I discuss each of these in turn. *How* 'programmes of economisation' unfold in local authority valuations is first outlined, before discussing the causes of this. This is particularly important for considering how some longer term projects were nevertheless brought forward. The resulting implications for energy projects are explored. In particular considering how exclusionary economisation was in practice, and how this influenced potential for assembling energy, carbon saving and other forms of value. I also discuss limitations and further research arising from the findings. The chapter closes with discussion of the contribution this thesis makes to social studies of energy.

### **How did economisation unfold?**

This thesis has revealed diverse processes of economisation operating on energy projects across all three valuation frameworks investigated. In the applications of the Best Value Framework, some officers represented the



council's interpretation of 'best value' in an energy project as financial affordability, namely whether the project would cover its borrowing costs, mediated through a marketplace structured by public procurement rules. In assembly of the business case a strong process of economisation prioritised short-term financial value. Austerity and budgetary pressures exacerbated this, as budget cuts simultaneously intensified both short-term cost saving and the need for income generation. Whilst some projects could conform to this model of economisation, long-term carbon saving projects were not routinely prioritised. Public procurement economised interactions with suppliers, with ideas of 'best value' to the council brought about through suppliers' (i.e. market actors) responses to tenders.

Then was the considerable time spent doing the 'administrative' valuation work of translating the project into an accountable form across each framework. Energy project valuations needed to withstand not only audit tests of (best) value for money, but also compliance with procurement rules and principles of competition. A critical step in valuation practices was to translate the energy project into an object which Finance and Legal teams, in particular, could sign up to. Since these teams were generally unfamiliar with energy projects, this required translation work to redefine the energy project as a financial object, at least temporarily. I return to the impact of this below.

This research shows, therefore, that the economising of local energy projects is not one dimensional, but emerges in diverse ways. Multiple forms of economised valuations continuously emerged in relation to the three valuation frameworks, at multiple stages of project development, over a variety of projects and across multiple local authority cases. Analysis of this larger number of cases, encompassing different project types, has thus contributed to knowledge about the extensive reach of this programme of economisation in municipal energy.

## **Devices in energy project valuations**

Attentive to the influence of formal tools in decision making, this thesis contributes the following interconnected explanations to the economising of local energy project valuations. Termed 'devices' in social studies of markets (Çalışkan & Callon, 2010; Muniesa et al., 2007), the valuation frameworks I examined *intervened* in energy project development. Capturing and structuring valuation practices, these devices were able to organise the human activity in energy project development, at times to the frustration of project officers.

They became the lens through which officers saw and spoke about the project, and interacted with others across the council. They were the devices that funding proposals were dependent upon, and through which decisions were made, and audit trails were created. The work that people carried out in securing contractors, buying solar panels, and purchasing expertise was assembled and administered through public procurement rules, specifications, timeframes, evaluation criteria, notice websites, and contracts. The future of the project relied on procurement valuations being correctly conducted, in terms of compliance, but also being designed in such a way that they created the outcomes needed.

This mundane work of filling out reports, securing approval of the business case, and advertising procurement tenders, added up to considerable mediation of value. These valuation frameworks were thus integral elements of the energy project valuations and economisation processes observed, intervening across multiple stages of project development. They were, in this sense, devices that were hard to escape.

## **A series of economised processes: making the energy project governable**

These were not however, omnipotent singular devices demanding attention from their 'users' in any one specified way. These devices did not create a one-stop-shop of economisation through which every energy project emerged rendered as a specific type of 'economic object'. Much of the work required by these devices involved a series of processes which made the energy project, as an extension of the local authority, governable according to pernicious notions of '(best) value for money', 'competition' and 'efficiency' in public spending. For example, energy projects were made governable through public procurement, which attempts to create a competitive marketplace for societal solutions, here climate protection. These devices are hence integral components in economising society and the extension of markets into public services.

Findings therefore contribute new evidence that analysis of the application of concepts of 'economisation' and its 'devices' in local government context needs to pay attention to 'programmes of governing'. The concept of 'programmes of economising' goes some way to incorporating the combination of concepts required to capture the dynamics observed. However as Chapters 7 and 9 showed, valuation practices were not always directly about economic or financial valuations, but about documenting due attention to satisfy set measures and procedures. This emerged both in relation to attempts to standardise the negotiation of value, but also the concurrent fluid valuation practices that were simultaneously navigating these complex frameworks. Escaping, sidestepping or reorienting formal valuations that attempt to extend the contemporary programme of neo-liberal governing in local government institutions was continually at stake.

Moreover, if decisions to proceed with an energy project tend to be reduced to financial affordability, there is a need to query the value of the work done

to demonstrate wider notions of 'value for money', and 'best value'. What purpose is served by committing all the human, financial and time resources to building the wider case? Here I invoke Power's (2010 [1997]) notion of the 'audit explosion' as an authorised ritual of trust that seeks to provide comfort to society through 'risk processing'. Organisational governance is not about pure economics, but about systems of control which rely upon audit and management processes of documenting, recording, ordering and checking. Valuation studies therefore could develop its general agnosticism to economic valuation (Doganova et al., 2018) by engaging further in the way political agendas attempt to exercise power and control through myriad forms of valuing<sup>61</sup>.

As such, I avoided significant use of the concept of 'financialisation', which Chiapello (2015) argues is a prevalent form of economisation in public policy. Instead I opted to apply 'economisation' (Çalışkan & Callon, 2009), taking it as the higher order, or more generalised concept. Chiapello argues that financialisation is a form of exclusionary valuation based on calculations that squeezes out public goods by transforming the object, here an energy project, into something viewed from an investor's perspective. Even though financial metrics and some form of financial value (for example short-term cost saving) were often being prioritised in valuations, I saw the emergence of this process as more nuanced and multifaceted. Not always was it a metric such as net present value that was transforming the terms of valuations. Any number of procurement valuations across an energy project were under negotiation, with ratios, evaluation criteria, testing of suppliers and benchmarking.

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<sup>61</sup> For a short summary of valuation studies' perspective on valuation and politics, see Helgesson et al.'s (2017) reflections on a stream covering the topic at the 2017 European Group of Organisation Studies (EGOS) conference.

The concept has however been helpfully adapted in other studies, such as Webb's (2019) analysis of 'financialised governance' in Glasgow's energy strategy, suggesting scope to further application in empirical studies of local energy. Economic sociologists have also acknowledged the tendency for silo thinking and a lack of overarching or unifying concepts (Fligstein & Dauter, 2007; Lamont, 2012; Mackenzie, 2019). By retaining the focus on bridging the concepts of economisation, valuation and programmes of governing, I have generated conclusions which may be of wider relevance and interest to economic sociology.

### **The political-economic context: politicising energy project valuations**

Furthermore, the political-economic context matters to valuation practices. This was not a study of a particular market, such as financial trading and its 'market devices' (Mackenzie, 2019), but a study of 'economics in the wild' (Callon, 2007). This is where forms of valuation have been transposed from one (economic) *situ*, into another; here, public organisations and energy projects. The valuation practices I studied were in a specific context of local government, which over the last 40 years has seen an extension of market governing techniques, but also in a specific period of major budget reductions and organisational change.

Austerity budgets, as emphasised in Chapter 8, pushed short-term planning to the forefront, as pressures demanded cost saving and income generation opportunities. Short-term financial planning is part of what makes metrics, such as payback, potent representations of the value of an energy project. Valuations based on payback had a certain appeal in this context, being amenable to wider organisational pressures. These austerity measures are not the outcome of 'economics' per se, but *political* decisions about addressing national debt through reductions to public funding. Specific forms of economic knowledge are (perhaps) part of that political decision, but

political decisions are not reducible to economics alone. Consequently, the economising of local energy projects cannot be untangled from the highly political context of austerity. The rendering of a local authority energy project through economic or financial valuation is thus as much about power and control as economics (or finance). There is therefore a need for sensitivity about the (new) context within which devices are used, and new, or at least modified, valuation practices develop.

Considering devices and their environment has revealed an inherent politicisation of local authority energy valuations. This helps to explain why, although government advise each valuation framework can provide a balanced evaluation of local investment options, this did not routinely materialise. This adds weight to the argument about ‘austerity localism’ (Hastings et al., 2015; Morris et al., 2017), where although local authorities, in principle, have discretion to prioritise multiple forms of local value, their agency to go beyond narrow bounds of financial value is tightly constrained. As emphasised in Chapters 7 and 9, austerity localism has further eroded the already limited internal resources that provide local authorities with confidence they can manage larger scale and/or multi-actor projects. I conclude that the programme of governing through these valuation frameworks, combined with austerity, created the ideal conditions for intensifying the economising of local energy.

Further evidence in support of the sensitivity of valuations to the political-economic context concerns the changing incentives, grant programmes and subsidies for small scale renewables, retrofit and district heating (e.g. the feed-in tariff, Energy Company Obligation, the Carbon Reduction Commitment and Green Deal). Considerable change to energy policy provides little continuity in energy project valuations. The energy project business case in particular was subject to continual reform and arduous problem solving, as officers scrambled to secure contributions to

development or capital funding costs. In turn, procurement processes were undermined as projects had to meet revised deadlines, or revise the scope of tenders to accommodate almost erratic grant funding support. In some cases, entire procurement framework agreements that councils had established to enable solar projects to come forward swiftly were abandoned.

This destabilised the already tenuous setting for energy projects, which fall outside the 'mainstream business' of local services. More broadly, this worked against creating a municipal energy actor that could adeptly navigate the valuation frameworks, and secure commitment from the council for a long-term energy programme. Instead, ad hoc funding opportunities were pursued by councils, often at the expense of consistently assembling local value from energy projects.

As such, opportunities to secure multiple forms of value were not readily available in this political-economic context, and no set of guidelines fundamentally changed that. For example, although the Best Value Framework was intended to open up valuations beyond lowest cost, it was not effective at creating change on its own, beyond niche areas such as the price-to-quality ratio in procurement.

### **The interpretative and adaptive capacity of users**

Mindful to the necessary interpretation of valuation frameworks, this thesis provides new insight into the remarkable, endless inventiveness which 'users' of valuation frameworks bring to bear, despite the marginality of local energy. Using the notion of boundary objects which are open to interpretation and multiple uses (Star, 2010) and the concept of finitism (Barnes, 1995), each valuation framework was shown to be open to a degree of malleability. The meaning of rules were interpreted and applied on a case-by-case basis, with officers from across councils having different interpretations of how to negotiate each valuation framework.

In the business case for example, this ranged from not needing to construct a business case for certain projects, through to using extensive business case development techniques. As discussed above, in many instances individual financial devices in the business case were used as a crude measure to prioritise only certain projects. Interestingly however, the 'business case' was sometimes used as a tool for incorporating the energy project further into the mainstream business of the council. This included incorporating energy into the capital investment programme, recruiting local politicians of different parties, and linking energy to different corporate agendas. The ongoing negotiation and constant re-interpretation of devices thus provides evidence countering the path dependency, and highlights the limits, of such programmes of economising.

Users therefore have adaptive capacity and are not passive agents in economising local energy. Based on the evidence from these case studies, I conclude that the 'finitist user' was largely what opened up spaces for larger scale longer term energy projects. However, the creative spaces and sites within valuations available to exploit by the finitist user, depended on willingness and expertise.

In particular, energy projects depended on Finance, Legal and Procurement depts./teams breaking the conventional rules and stepping outside of the zone of core statutory services to engage in non-core business. Capital financing and VAT were also raised important to local energy projects, but sometimes less familiar to some Finance depts. (compared to revenue accounting). Unfamiliar procurement and contracting routes for unfamiliar energy projects, also created to at least a feeling of unwillingness for inter-departmental collaboration in some cases. Beyond these specific areas of expertise, limited resources in corporate services continually emerged as limiting the adaptive capacity of local authorities to repurpose valuations to



secure carbon saving and public goods from investment in energy. How these negotiations unfolded ultimately shaped the success, scale and scope of energy initiatives.

### **Implications for local energy policy and practice in the context of net zero carbon targets**

As discussed above in practice, each valuation framework marginalised some dimensions of local value in energy projects. Notably, projects which could not meet short-term borrowing restrictions were downgraded. Uncertainty over the future of the public estate also caused delays even to relatively short-term energy retrofit projects. Councils' nuanced interpretations of 'best value for money' also fed into concerns about whether they could manage large-scale complex project development, with limited human resources and technical expertise across energy, legal and financing.

Where energy projects could be incorporated into the commercialisation strategies of councils, these primarily focussed on delivering cost saving or income generation for central council budgets. As such they were likely to preclude more marginal initiatives: carbon saving or clean energy was sometimes no more than a 'bonus'. Indeed, projects that saved carbon, but did not cover borrowing costs, either needed to fill the funding gap, or were shelved. Based on the evidence considered in this thesis, carbon reduction projects are unable to operate as 'financial loss making' initiatives, irrespective of their contribution to climate protection and societal welfare.

There was also considerable re-work in many cases, as energy projects recycled through the development process. Whilst some level of iteration in project development is to be expected, most local authorities in this study were searching around for routes to create local energy value, but not really getting there. Where local authorities made headway, the valuation

frameworks did not themselves create significant routes to local value creation.

Instead, officers and councillors created and exploited pockets of creativity beyond the bounds of available valuation frameworks. These valuation frameworks do not redefine the marginal status of local energy in any significant way. The potential for energy and carbon saving does not, in any material sense, influence what happens in the organisation. Despite a few individual examples, project officers across various departments struggled to shape councils 'non-energy' activities. Thus, within this programme of governing local authority valuations, there is no central legitimacy of energy.

A counterargument could be posed that these valuation frameworks represent the least worst option for governing local spending decisions and putting in place the kind of checks and balances needed to safeguard the finite use of public resources, whether human, financial and/or time (cf. Power, 2010[1997]). Local authority officers are used to navigating the complex organisational settings they work in. One could say the local authority has been normalised to working within, with, and against these valuation frameworks. Officers have pushed at the margins to get energy projects from initial conception into some form of operational reality; maybe there is nothing better to be had. But thinking critically about the resources which go into negotiating the demands of the valuation frameworks, I conclude that problems could be eased and tensions lessened, by a modified, if not outright alternative, approach.

Furthermore, such reliance on individuals' ability and willingness to negotiate valuation frameworks that do not prioritise energy and carbon saving is unsustainable for building the integrated local clean energy systems now envisaged by policies (CCC, 2019; Scottish Government, 2018a; UK Government, 2017; Welsh Government, 2019). Achieving such policy goals

will rely on altering current approaches to valuing local energy. Based on findings, policies geared to creating the investment for the necessary step change in local net zero carbon strategy and implementation need to pay attention to the following three interconnected issues. Each of these is extended through discussion of further research in the next section.

### ***Establishing central legitimacy for net zero carbon planning and investment as core to local government services***

Under current institutional structures, the most immediately obvious route to overcoming struggles in assembling value is to incorporate local energy into the statutory responsibilities of local government and provide commensurate resourcing. This has the benefit of creating a clear local problem owner with both responsibility, resourcing and therefore capacity to act (Hawkey & Webb, 2014; Tingey & Webb, 2020a; Webb & Hawkey, 2016). Therefore, any such statutory responsibilities need accompanying resources across capital financing, technical energy and engineering expertise, legal, contracting and procurement. Establishing local energy teams within local authorities with a remit to develop area-based net zero carbon plans and implementation programmes would be a first step (Tingey & Webb, 2020b). The goal would not be to create an additional ‘box ticking’ exercise, but instead build new service provision based on the meaningful contribution that local areas can make to UK carbon reduction targets. Without an adequately resourced local institutional actor, findings suggest this will not materialise.

### ***Reform valuation frameworks to align with a net zero carbon trajectory***

Securing ‘best value’ to the council needs to align business case and procurement strategies with net zero carbon investment priorities. This requires supporting local authorities to incorporate whole life energy and carbon saving into business case and procurement evaluation. Specialist energy/net zero procurement services could provide one element of a support package. For example, during the course of data collection a proposal to create a non-profit local authority-owned District Energy

Procurement Agency (DEPA) for district heating procurement was proposed (King, 2016a). This intended to resolve issues concerning expertise, resources and trust raised in Chapter 9. However, despite an initial government grant, the proposal failed to gain momentum and the widespread support of local authorities who needed to seize and take ownership of the opportunity. In the context of revising valuation frameworks to scale up local net zero carbon investment, a proposal such as DEPA could be revisited.

***Create straightforward and accessible low cost long-term funding for local net zero carbon investment programmes***

Local authorities need access to low cost long-term funding. In principle there are multiple sources of available finance (Tingey & Webb, 2020b), but to reduce perceptions of risk and unfamiliarity, straightforward government backed lending schemes need to provide an easy and affordable route to funding net zero carbon programmes. This needs to reduce the overheads of securing funding for individual project business cases and allow cross-subsidising of local projects. Multiple sources of finance could be brought together (see e.g. London Sustainable Development Commission, 2020), such as government and institutional investors co-funding a Local Net Zero Fund. For example, analysis for the whole city of Edinburgh estimates that around £4 billion would be required to reduce emissions by about 56% from 2019 levels (Williamson et al., 2019). Reducing development costs and timelines through access to affordable finance would in turn generate 'better value' for public money.

## **10.2 Limitations and further research**

Conclusions emphasised the recurrent themes of the marginalising of energy and carbon saving and public goods; and the types of negotiation, collaboration and expertise involved in negotiating each valuation framework. As a qualitative analysis of how valuation frameworks were drawn into the value-making practices shaping the UK local authority energy projects examined, these conclusions are suited to analytical generalisations (Flyvbjerg, 2006; Yin, 2018).

Given the timing and locations of this study, generalisability of these broad conclusions is restricted to the struggles involved in assembling value in UK local authority energy projects around the mid-2010s. Local authority energy now is not exactly the same as when I collected data. As case study research, this investigation was also restricted to a sub-set of UK local authorities. Talking to officers in different councils might reveal other dimensions not fully captured here. Much would however be similar enough to lead to the same or relatable conclusions. There has been no fundamental change to local authority energy since my data were collected.

However, a series of governance changes are in process, which could *potentially* change the future of local energy. This study therefore lays the foundation for further comparative work in the context of the following live developments occurring since my data collection period:

### **Comparative analysis on valuation frameworks**

Each valuation framework has seen some modification since my data were gathered<sup>62</sup>. For example, new procurement handbooks were issued in association with the latest iteration of public procurement rules. These included encouraging incorporation of carbon and energy saving into the evaluation of tenders and promoting the role of whole life costing. Studies could therefore examine whether this leads to any material effect on procurement valuations. Breaking procurement into smaller lots to enable SMEs to bid for contracts also features. It would be helpful to establish whether local authorities are able to make use of this, as it increases the number of tender specifications, evaluations and contract awards. Thus, this could increase resource demands on Procurement and Legal depts./teams.

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<sup>62</sup> Concerning the business case, in 2018 extended guidance was issued on use of the five case model of business case development, including access to training and accreditation. Concerning the Best Value Framework, in 2020 Scottish Government issued new statutory guidance on securing Best Value, with an increased expectation on partnership working.

New provisions also enable limiting eligibility of certain contracts to mutuals, defined as bodies with public service goals, and mutual ownership and profit sharing structures. These could make it more straightforward for local authorities to procure third sector organisations in delivering energy projects, but it needs investigating. There may also be changes to public procurement rules following the UK's decision to leave the European Union. How this will unfold for local energy is unknown at this stage, but this research lays the foundations for comparative analysis.

### **The legitimacy of local energy in the context of Climate Emergencies and net zero carbon targets**

Since 2018 almost three quarters of local authorities have made a Climate Emergency Declaration (Tingey & Webb, 2020b), committing to reducing emissions on their own estates by a set date (usually around 2030) and extending this outward to create net zero carbon across the local area. Having declared a Climate Emergency, local authorities are expected to develop an implementation plan and report on progress. Climate Emergencies may result in a greater prioritisation of energy in local government. Research could examine whether such local political commitments shape how valuation frameworks are actually used. Potentially they could stimulate new impetus to change valuation practices and prioritise energy and carbon saving, but these phenomena need investigating. Previous local political commitments alone have had limited effect.

Beyond Climate Emergencies, there is also scope for research into the role of valuation frameworks for implementing local planning for heat and energy efficiency. For example, since data were collected, proposals have developed for formal statutory powers for Scottish local authorities to develop Local Heat and Energy Efficiency Strategies (LHEES). Within the evolving *Energy Efficient Scotland* policy, local authorities are envisaged as key local actors, expected to develop an area-based LHEES for upgrading every

building (Scottish Government, 2018b). Feasibly these could shape heat and energy efficiency investment evaluation in Scottish local authorities, and potentially there could be new public procurement models associated with this programme. How resourcing will unfold is not yet known but will likely to shape the extent to which LHEES gains legitimacy within the local authority organisation. Evaluation of a pilot programme showed there was insufficient existing in-house resource to deliver on the ambitions of LHEES (Wade, Webb, & Creamer, 2019). Further analysis could explore the use of more formal statutory powers to drive change in local energy valuation practices. This could also provide learning for the rest of the UK.

### **Scaling up methods**

Finally, this was not a statistically representative study that aimed to draw inferences about the impacts of valuation frameworks on the whole population of local authorities. Further research could work on scaling up methods to capture evidence from a wider pool of local authorities, drawing on a mix of quantitative and qualitative methods. In the short term, given extensive homeworking is likely to continue following the coronavirus 2020 pandemic, this would likely need to rely on innovation in online data gathering. This presents both opportunities (i.e. reducing time and costs of travel etc), and challenges (suitability and reliability of online tools such as conference calling), but could fruitfully be a route to data gathering with more local authorities, and their partners.

### **10.3 Contributions to social studies of energy**

Until very recently, there have been so few sociological studies of energy that they have had a negligible impact on energy research as a whole (Sovacool, 2014). At the core of the sociological perspective is a concern with how society works and critical analysis of societal structures and agency. Tom Burns (1965), who established Sociology at Edinburgh University, explained it succinctly when he argued:

The practice of sociology is criticism. It exists to criticise claims about the value of achievement and to question assumptions about the meaning of conduct. It is the business of sociologists to conduct a critical debate with the public about its equipment of social institutions.

Burns, 1965, p. 12

Taking this forward into a study of local authority energy projects has provided new evidence about the socio-technical and governance challenges of municipal energy. In their simplest form, findings show that across multiple different technologies, councils experienced difficulties in bringing forward energy projects. The energy technology itself was not the central issue at stake, or the 'cause' of failed project development. Rather, the issue was more often an uneasy combination of where responsibility for local energy sat (nowhere), how decisions were made (ultimately not based on energy or carbon), who had the expertise needed to bring a project forward (a mix of technical, legal, financial, contracting and procurement expertise not routinely located within the council), and an erosion of local authority autonomy and agency, as acutely borne out in relation to austerity budgets of the last decade. This contribution hence illustrates the limitations of focussing solely on engineering and economic analyses. It emphasises the need to focus on institutional processes, decision making routines, and expertise: these are societal processes.

Despite the potential contribution for city-scale investment to meet climate protection goals (Gouldson et al., 2015; Sudmant et al., 2016), there is no significant UK municipal energy sector. In particular this thesis provides enough comparative evidence to build knowledge about the overarching patterns in UK local authority decision making for local energy, and the common difficulties that local authorities face across a breadth of energy projects. A focus on the application of tools and procedures has illustrated how practices often diverge, quite considerably, from original intentions. Valuations are much more nuanced than alluded to in the 'ideal type' depicted in guidelines. This has revealed the deficiencies of decision making



tools and procedures for local energy, helping to explain why certain energy projects came forward, but others do not. Consequently, this provides a more nuanced understanding of the local authority as an energy actor and the different capacities it can bring to bear on local energy.

Therefore, this thesis has demonstrated the strength of using qualitative in-depth methods to prise open the technocratic processes of local government project development. Findings emphasise the importance of primary research that examines how tools are used. This highlights the limitations of a sole, or over reliance, on secondary forms of policy and documentary analysis. Social studies of energy could therefore be strengthened by further research on valuation practices, which shape decisions about the scale and scope of energy initiatives and local systems development.

This thesis has provided a rich account of the struggles local authorities encounter as they attempt to bring forward energy projects. Social studies of energy need to engage governments, businesses, civil society and citizens in a critical debate about the limitations of current institutional relationships and practices for a local authority contribution to net zero carbon and climate protection goals.

## References

- Aguma, C. (2013). The Principle of Ultra Vires and the Local Authorities' Decisions in England. *European Journal of Law Reform*, 15(3), 267–298.
- Akintoye, A., Hardcastle, C., Beck, M., Chinyio, E., & Asenova, D. (2003). Achieving best value in private finance initiative project procurement. *Construction Management and Economics*, 21(5), 461–470.  
<http://doi.org/10.1080/0144619032000087285>
- Allman, L., Fleming, P., & Wallace, A. (2004). The progress of English and Welsh local authorities in addressing climate change. *Local Environment*, 9(3), 271–283. <http://doi.org/10.1080/1354983042000219379>
- Ambrose, A., Eadson, W., & Pinder, J. (2016). The role of actor-networks in the early stage mobilisation of low carbon heat networks. *Energy Policy*, 96, 144–152. <http://doi.org/10.1016/j.enpol.2016.05.042>
- Andrews, R., & Entwistle, T. (2015). Public–private partnerships, management capacity and public service efficiency. *Policy & Politics*, 43(2), 273–290.  
<http://doi.org/10.1332/030557314X13917703359707>
- Arnaboldi, M., & Lapsley, I. (2008). Making Management Auditable: The Implementation of Best Value in Local Government. *Abacus*, 44(1), 22–47.  
<http://doi.org/10.1111/j.1467-6281.2007.00247.x>
- ARUP, Lux Nova Partners, Mazars, Willis Towers Watson. (2016). *Heat Network Detailed Project Development Resource: Guidance on Strategic and Commercial Case* (pp. 1–172). London: Department for Business, Energy & Industrial Strategy.
- Asenova, D., Beck, M., Akintoye, A., Hardcastle, C., & Chinyio, E. (2002). Partnership, value for money and best value in PFI projects: obstacles and opportunities. *Public Policy and Administration*, 17(4), 5–19.  
<http://doi.org/10.1177/095207670201700402>
- Audit Scotland. (2013). *Major capital investment in councils*. Edinburgh: Audit Scotland.
- Audit Scotland. (2014). *How councils work - Options appraisal: are you getting it right?* (pp. 1–36). Edinburgh: Audit Scotland.
- Audit Scotland. (2019). *Local government in Scotland: Financial overview 2018/19* (pp. 1–40). Edinburgh: Audit Scotland.
- Aylett, A. (2015). Institutionalizing the urban governance of climate change adaptation: Results of an international survey. *Urban Climate*, 14(Part 1), 4–16.  
<http://doi.org/10.1016/j.uclim.2015.06.005>
- Åkerman, M., & Peltola, T. (2012). How does natural resource accounting become powerful in policymaking? A case study of changing calculative frames in local energy policy in Finland. *Ecological Economics*, 80(C), 63–69.  
<http://doi.org/10.1016/j.ecolecon.2012.05.001>
- Bailey, S., Asenova, D., & Hood, J. (2012). The UK's Prudential Borrowing Framework: Professional Discipline and Control. *Local Government Studies*, 38(2), 211–229. <http://doi.org/10.1080/03003930.2011.615832>
- Bale, C. S. E., Bush, R., Hawkey, D., & Webb, J. (2014). Valuation of passive provision for heat network investment. In A. Brown & M. Robertson (Eds.),

- Economic evaluation of systems of infrastructure provision: concepts, approaches, methods* (pp. 66–74). Leeds: University of Leeds.
- Bale, C. S. E., Foxon, T. J., Hannon, M. J., & Gale, W. F. (2012). Strategic energy planning within local authorities in the UK: A study of the city of Leeds. *Energy Policy*, 48, 242–251. <http://doi.org/10.1016/j.enpol.2012.05.019>
- Ball, A. (2005). Environmental accounting and change in UK local government. *Accounting, Auditing & Accountability Journal*, 18(3), 346–373. <http://doi.org/10.1108/09513570510600738>
- Ball, A., Broadbent, J., & Moore, C. (2002). Best Value and the Control of Local Government: Challenges and Contradictions. *Public Money and Management*, 22(2), 9–16. <http://doi.org/10.1111/1467-9302.00302>
- Barnes, B. (1982). On the Extensions of Concepts and the Growth of Knowledge. *The Sociological Review*, 30(1), 23–44. <http://doi.org/10.1111/j.1467-954x.1982.tb00652.x>
- Barnes, B. (1995). *The Elements of Social Theory*. London: Princeton University Press. <http://doi.org/10.2307/j.ctt7zvfmt.1>
- Barnes, B., Bloor, D., & Henry, J. (1996). *Scientific Knowledge: A Sociological Analysis*. London: Athlone Press.
- Bawden, A. (2019, July 10). Climate crisis: can councils deliver on bold promises to cut emissions? *The Guardian*.
- Bechhofer, F., & Paterson, L. (2000). *Principles of Research Design in the Social Sciences*. London: Routledge.
- Becker, S., Beveridge, R., & Naumann, M. (2015). Remunicipalization in German cities: contesting neo-liberalism and reimagining urban governance? *Space and Polity*, 19(1), 76–90. <http://doi.org/10.1080/13562576.2014.991119>
- Becker, S., Naumann, M., & Moss, T. (2016). Between coproduction and commons: understanding initiatives to reclaim urban energy provision in Berlin and Hamburg. *Urban Research & Practice*, 10(1), 63–85. <http://doi.org/10.1080/17535069.2016.1156735>
- Benney, M., & Hughes, E. C. (1984). Of Sociology and the Interview. In M. Bulmer (Ed.), *Social Research Methods: an introduction*. London: The Macmillan Press Ltd.
- Berry, T., & King, M. (2019). Governance models and low carbon thermal networks. Presented at the Local Energy Systems in National and International Contexts Conference, Oxford.
- Bertelsen, N., Petersen, U. R., Caussarieu, M., & Karnøe, P. (2019). What do energy system models do? On framing and knowing Thermal Energy Storage in Copenhagen (pp. 1–14). Presented at the Innovative Re-making of Markets and Business Models IREMB Conference Social studies of energy system transitions through shifting valuations and agencies.
- Betsill, M., & Bulkeley, H. (2007). Looking Back and Thinking Ahead: A Decade of Cities and Climate Change Research. *Local Environment*, 12(5), 447–456. <http://doi.org/10.1080/13549830701659683>
- Billington, P., Abel Smith, C., & Ball, M. (2017) *Financing the Transition: Harnessing UK Cities' Ambition for Clean Energy* (pp. 1–39). London: UK100.
- Billington, P., Abel Smith, C., & Ball, M. (2020). *Accelerating the Rate of Investment in Local Energy Projects* (pp. 1–33). London: UK100.
- Blaikie, N. (2010). *Designing Social Research The Logic of Anticipation* (Second). Cambridge: Polity Press.

- Blanco, I., Griggs, S., & Sullivan, H. (2014). Situating the local in the neoliberalisation and transformation of urban governance. *Urban Studies*, 51(15), 3129–3146. <http://doi.org/10.1177/0042098014549292>
- Bolton, R., & Foxon, T. J. (2015). Infrastructure transformation as a socio-technical process — Implications for the governance of energy distribution networks in the UK. *Technological Forecasting & Social Change*, 90, 538–550. <http://doi.org/10.1016/j.techfore.2014.02.017>
- Bourn, J. (2012). *Public Sector Auditing: Is it Value for Money?* Hoboken, NJ, USA: John Wiley & Sons, Inc. <http://doi.org/10.1002/9781119208938>
- Bowyer, O. (2018). *Public service reform in post-devolution Wales: a timeline of local government developments* (pp. 1–27). Cardiff: National Assembly for Wales.
- Boyne, G. (1999). Introduction: Processes, performance and best value in local government. *Local Government Studies*, 25(2), 1–15. <http://doi.org/10.1080/03003939908433944>
- Boyne, G. (2000). Developments: External Regulation and Best Value in Local Government. *Public Money and Management*, 20(3), 7–12. <http://doi.org/10.1111/1467-9302.00217>
- Braithwaite, J. (2018). Thirty Years of Ultra Vires: Local Authorities, National Courts and the Global Derivatives Markets. *Current Legal Problems*, 71(1), 369–402. <http://doi.org/10.1093/clp/cuy005>
- Bramah, M. (2015). Developing energy policy in London and other cities. Presented at the Developing the role of cities in the energy sector and next steps for energy in London, London.
- Braunholtz-Speight, T., Mander, S., Hannon, M. J., Hardy, J., McLachlan, C., Manderson, E., & Sharmina, M. (2018). *Evolution of Community Energy in the UK*. London: UKERC.
- Bristol Energy. (2018, April 26). Bristol City Council energy supply. Retrieved August 29, 2020, from <https://www.bristol-energy.co.uk/bristol-city-council-electricity-supply>
- Bulkeley, H. (2010). Cities and the Governing of Climate Change. *Annual Review of Environment and Resources*, 35(1), 229–253. <http://doi.org/10.1146/annurev-environ-072809-101747>
- Bulkeley, H., & Betsill, M. M. (2003). *Cities and Climate Change: Urban Sustainability and Global Environmental Governance*. London: Routledge.
- Bulkeley, H., & Kern, K. (2006). Local Government and the Governing of Climate Change in Germany and the UK. *Urban Studies*, 43(12), 2237–2259. <http://doi.org/10.1080/00420980600936491>
- Bulkeley, H., Castan Broto, V., & Maassen, A. (2014). Low-carbon Transitions and the Reconfiguration of Urban Infrastructure. *Urban Studies*, 51(7), 1471–1486. <http://doi.org/10.1177/0042098013500089>
- Burns, T. (1965). Sociological Explanation. Presented at the Inaugural lecture, University of Edinburgh.
- Bush, R. E., Bale, C. S. E., & Taylor, P. G. (2016). Realising local government visions for developing district heating: Experiences from a learning country. *Energy Policy*, 98(C), 84–96. <http://doi.org/10.1016/j.enpol.2016.08.013>
- Bush, R. E., Bale, C. S. E., Powell, M., Gouldson, A., Taylor, P. G., & Gale, W. F. (2017). The role of intermediaries in low carbon transitions – Empowering innovations to unlock district heating in the UK. *Journal of Cleaner Production*, 148, 137–147. <http://doi.org/10.1016/j.jclepro.2017.01.129>

- Cabinet Office. (2012). *Procurement Policy Note – The Public Services (Social Value) Act 2012 – advice for commissioners and procurers* (pp. 1–10). London: Cabinet Office.
- Cabinet Office. (2013). *Procurement Policy Note: New Threshold Levels for 2014 Action Note 10/13* (pp. 1–2). London: Cabinet Office.
- Caller, M. (2018). *Northamptonshire County Council Best Value Inspection* (pp. 1–51). London: MHCLG.
- Callon, M. (1998a). Introduction: the embeddedness of economic markets in economics. *The Sociological Review*, 46(S1), 1–57.
- Callon, M. (1998b). The laws of the markets. (M. Callon, Ed.). Oxford: The Sociological Review.
- Callon, M. (1999). Actor-network theory—the market test. *The Sociological Review*, 47(S1), 181–195.
- Callon, M. (2007). What Does It Mean to Say That Economics Is Performative? In *Do Economists Make Markets On the Performativity of Economics* (pp. 311–357). <http://doi.org/10.2307/j.ctv10vm29m.10>
- Callon, M. (2008). Economic markets and the rise of interactive agencements: from prosthetic agencies to habilitated agencies. In T. Pinch & R. Swedberg (Eds.), *Living in a Material World*. London: The MIT Press.
- Castán Broto, V., & Bulkeley, H. (2013). A survey of urban climate change experiments in 100 cities. *Global Environmental Change*, 23(1), 92–102. <http://doi.org/10.1016/j.gloenvcha.2012.07.005>
- Centre for Sustainable Energy. (2005). *Local & Regional Action to Cut Carbon*. Bristol: CSE.
- Chartered Institute of Public Finance and Accountancy. (2010). *General guidance on options appraisal* (pp. 1–16). London: CIPFA.
- Chiapello, E. (2015). Financialisation of Valuation. *Human Studies*, 38(1), 13–35. <http://doi.org/10.1007/s10746-014-9337-x>
- Climate Alliance, Council of European Municipalities, Regions, Energy Cities, FEDERENE, ICLEI Local Governments for Sustainability. (2015). *Open Letter. Gas will not save the climate, decentralised energy will*.
- Collier, U., & Löfstedt, R. E. (1997). Think globally, act locally? *Global Environmental Change*, 7(1), 25–40. [http://doi.org/10.1016/S0959-3780\(96\)00025-8](http://doi.org/10.1016/S0959-3780(96)00025-8)
- Coutard, O., & Rutherford, J. (2010). Energy transition and city–region planning: understanding the spatial politics of systemic change. *Technology Analysis & Strategic Management*, 22(6), 711–727. <http://doi.org/10.1080/09537325.2010.496284>
- Creswell, J. W. (2013). *Qualitative Inquiry and Research Design* (Third Edition). London: Sage Publications Ltd.
- Crown Commercial Service. (2016). *Handbook for the Concession Contracts Regulations 2016 final* (pp. 1–19). London: Crown Commercial Service.
- Çalışkan, K., & Callon, M. (2009). Economization, part 1: shifting attention from the economy towards processes of economization. *Economy and Society*, 38(3), 369–398. <http://doi.org/10.1080/03085140903020580>
- Çalışkan, K., & Callon, M. (2010). Economization, part 2: a research programme for the study of markets. *Economy and Society*, 39(1), 1–32. <http://doi.org/10.1080/03085140903424519>

- Department for Business, Energy and Industrial Strategy. (2020). *Final UK greenhouse gas emissions national statistics: 1990 to 2018 – Statistical Summary*. London: BEIS.
- Department for Business, Innovation and Skills. (2015). *The State Aid Manual* (pp. 1–102). London: BIS. Retrieved from [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/607691/bis-15-148-state-aid-manual-update.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/607691/bis-15-148-state-aid-manual-update.pdf)
- Department for Communities and Local Government. (2011). *Best Value Statutory Guidance* (pp. 1–7). London: Department for Communities and Local Government.
- Department for Communities and Local Government. (2015). *Revised Best Value Statutory Guidance* (pp. 1–6). London: Department for Communities and Local Government.
- Department of Energy & Climate Change. (2015). *Guide to Energy Performance Contracting Best Practices* (pp. 1–30). London: Department for Energy & Climate Change.
- Department of the Environment. (2015). *Statutory Guidance for the Operation of Community Planning* (pp. 1–33). Belfast: Northern Ireland Department of the Environment.
- Department of the Environment, Transport and the Regions. (1998). *Modernising Local Government - Improving local services through best value*. London: UK Government.
- DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48(2), 147–160. <http://doi.org/10.2307/2095101?ref=no-x-route:e7c1d7771db419c5b0e2a2d0f3ff15cc>
- Dixon, T., & Wilson, E. (2014). Cities' low-carbon plans in an "age of austerity": an analysis of UK local authority actions, attitudes and responses. *Carbon Management*, 4(6), 663–680. <http://doi.org/10.4155/cmt.13.58>
- Doganova, L., & Eyquem-Renault, M. (2009). What do business models do? *Research Policy*, 38(10), 1559–1570. <http://doi.org/10.1016/j.respol.2009.08.002>
- Doganova, L., & Muniesa, F. (2015). Capitalization Devices: Business Models and the Renewal of Markets. In *Making Things Valuable* (pp. 109–125). Oxford: Oxford University Press. <http://doi.org/10.1093/acprof:oso/9780198712282.003.0006>
- Doganova, L., Giraudeau, M., Kjellberg, H., Helgesson, C.-F., Lee, F., Mallard, A., et al. (2018). Five years! Have we not had enough of valuation studies by now? *Valuation Studies*, 5(2), 83–91. <http://doi.org/10.3384/VS.2001-5992.185285>
- Downe, J., & Martin, S. (2007). Regulation inside government: processes and impacts of inspection of local public services. *Policy & Politics*, 35(2), 215–232. <http://doi.org/10.1332/030557307780712997>
- Downe, J., & Taylor-Collins, E. (2019). *At the tipping point? Welsh local government and austerity* (pp. 1–54). Cardiff: Wales Centre for Public Policy. Retrieved from <https://www.wcpp.org.uk/publication/at-the-tipping-point-welsh-local-government-and-austerity/>
- Downe, J., Grace, C., Martin, S., & Nutley, S. (2008). Best Value Audits in Scotland: Winning Without Scoring? *Public Money and Management*, 28(2), 77–84. <http://doi.org/10.1111/j.1467-9302.2008.00625.x>

- Eadson, W. (2016). State enrolment and energy-carbon transitions: Syndromic experimentation and atomisation in England. *Environment and Planning C: Government and Policy*, 1–20. <http://doi.org/10.1177/0263774X16629445>
- Eadson, W., & Foden, M. (2019). State, community and the negotiated construction of energy markets: Community energy policy in England. *Geoforum*, 100, 21–31. <http://doi.org/10.1016/j.geoforum.2019.02.006>
- Eckersley, P. (2016). A new framework for understanding subnational policy-making and local choice. *Policy Studies*, 38(1), 76–90. <http://doi.org/10.1080/01442872.2016.1188910>
- Eckersley, P. (2018). Who shapes local climate policy? Unpicking governance arrangements in English and German cities. *Environmental Politics*, 27(1), 139–160. <http://doi.org/10.1080/09644016.2017.1380963>
- Eckersley, P., & Ferry, L. (2019). Public service outsourcing: the implications of ‘known unknowns’ and ‘unknown unknowns’ for accountability and policy-making. *Public Money and Management*, 40(1), 72–80. <http://doi.org/10.1080/09540962.2019.1660096>
- Emelianoff, C. (2014). Local Energy Transition and Multilevel Climate Governance: The Contrasted Experiences of Two Pioneer Cities (Hanover, Germany, and Vaxjo, Sweden). *Urban Studies*, 51(7), 1378–1393. <http://doi.org/10.1177/0042098013500087>
- Environment Agency. (2019, March). CRC Energy Efficiency Scheme: qualification and registration - Detailed guidance. Retrieved March 27, 2020, from <https://www.gov.uk/crc-energy-efficiency-scheme-qualification-and-registration>
- Espeland, W. N., & Lom, S. E. (2015). Noticing Numbers: How Quantification Changes What We See and What We Don't. In *Making Things Valuable* (pp. 18–37). Oxford: Oxford University Press. <http://doi.org/10.1093/acprof:oso/9780198712282.003.0002>
- EUR-Lex. (2015). *Rules on public works contracts, public supply contracts and public service contracts: Summaries of EU legislation*, eur-lex.europa.eu.
- EUR-Lex. (2016). *Public contracts — setting out clear ground rules*, eur-lex.europa.eu.
- European Commission. (2011). *Green Paper on the modernisation of EU public procurement policy: Towards a more efficient European Procurement Market* (pp. 1–56). Brussels: European Commission.
- European Commission. (2014). *New Rules on Public Contracts and Concessions: Simpler and More Flexible* (pp. 1–20). Publications Office of the European Union.
- European Commission. (2016). *EU Public Procurement reform: Less bureaucracy, higher efficiency* (pp. 1–14). Brussels: European Commission.
- Eyre, N., & Killip, G. (2019). Shifting the focus: energy demand in a net-zero carbon UK. (N. Eyre & G. Killip, Eds.) (pp. 1–108). Oxford: CREDS. Retrieved from <https://www.creds.ac.uk/publications/shifting-the-focus-energy-demand-in-a-net-zero-carbon-uk/>
- Fennell, P., Ruyssevelt, P., & Smith, A. Z. P. (2016). Financial viability of school retrofit projects for clients and ESCOs. *Building Research & Information*, 44(8), 890–907. <http://doi.org/10.1080/09613218.2015.1082779>
- Ferry, L., Coombs, H., & Eckersley, P. (2017). Budgetary Stewardship, Innovation and Working Culture: Identifying the Missing Ingredient in English and Welsh Local Authorities' Recipes for Austerity Management. *Financial Accountability & Management*, 33(2), 220–243. <http://doi.org/10.1111/faam.12117>

- Fleming, P. D., & Webber, P. H. (2004). Local and regional greenhouse gas management. *Energy Policy*, 32(6), 761–771. [http://doi.org/10.1016/S0301-4215\(02\)00339-7](http://doi.org/10.1016/S0301-4215(02)00339-7)
- Fligstein, N., & Dauter, L. (2007). The Sociology of Markets. *Annual Review of Sociology*, 33(1), 105–128. <http://doi.org/10.1146/annurev.soc.33.040406.131736>
- Fligstein, N., & McAdam, D. (2012). A Theory of Fields. Online: Oxford University Press. <http://doi.org/10.1093/acprof:oso/9780199859948.001.0001>
- Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, 12(2), 219–245. <http://doi.org/10.1177/1077800405284363>
- Flyvbjerg, B. (2009). Survival of the unfittest: Why the worst infrastructure gets built—and what we can do about it. *Oxford Review of Economic Policy*, 25(3), 344–367. <http://doi.org/10.1093/oxrep/grp024>
- Foxon, T. J., Bale, C. S. E., Busch, J., Bush, R., Hall, S., & Roelich, K. (2015). Low carbon infrastructure investment: extending business models for sustainability. *Infrastructure Complexity*, 2(1), 1–13. <http://doi.org/10.1186/s40551-015-0009-4>
- Friends of the Earth. (2011). Energy Bill Briefing: The impact of abolishing National Indicator 186. London: Friends of the Earth. Retrieved from <https://policy.friendsoftheearth.uk/node/36>
- Future Generations Commissioner for Wales. (2020). Procurement – The Future Generations Commissioner for Wales. Retrieved August 26, 2020, from <https://www.futuregenerations.wales/work/procurement/>
- Gouldson, A., Colenbrander, S., Sudmant, A., McAnulla, F., Kerr, N., Sakai, P., et al. (2015). Exploring the economic case for climate action in cities. *Global Environmental Change*, 35(C), 93–105. <http://doi.org/10.1016/j.gloenvcha.2015.07.009>
- Granovetter, M. (1985). Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology*, 91(3), 481–510. <http://doi.org/10.2307/2780199?ref=no-x-route:4f7eb3f17624e14571f9452d0c02c588>
- Grant Thornton, BEIS, AECOM. (2016). *Heat Networks - Economic and Financial Case Guidance* (pp. 1–180). London: Department for Business, Energy & Industrial Strategy.
- Greater South East Energy Hub. (2020). *Local Authority Procurement for Energy Assets* (pp. 1–6). Cambridgeshire: Greater South East Energy Hub. Retrieved from <https://www.energyhub.org.uk/resources/procurement-investment-business-models/>
- Groth, T. (2018). Socioeconomic modelling for local heat and energy efficiency strategies. Presented at the Workshop on Scottish policy for energy efficiency and buildings, Edinburgh
- Hannon, M. J., & Bolton, R. (2015). UK Local Authority engagement with the Energy Service Company (ESCo) model: Key characteristics, benefits, limitations and considerations. *Energy Policy*, 78, 198–212. <http://doi.org/10.1016/j.enpol.2014.11.016>
- Harris, T., Hodge, L., & Phillips, D. (2019). English local government funding: trends and challenges in 2019 and beyond. London: The IFS. <http://doi.org/10.1920/re.ifs.2019.0166>
- Hastings, A., Bailey, N., Gannon, M., Besemer, K., & Bramley, G. (2015). Coping with the Cuts? The Management of the Worst Financial Settlement in Living



- Memory. *Local Government Studies*, 41(4), 601–621.  
<http://doi.org/10.1080/03003930.2015.1036987>
- Hatherly, D., Leung, D., & Mackenzie, D. (2008). The Finitist Accountant. In T. Pinch & R. Swedberg (Eds.), *Living in a Material World* (pp. 132–161). London: The MIT Press.
- Hawkey, D., & Webb, J. (2014). District energy development in liberalised markets: situating UK heat network development in comparison with Dutch and Norwegian case studies. *Technology Analysis & Strategic Management*, 26(10), 1228–1241. <http://doi.org/10.1080/09537325.2014.971001>
- Hawkey, D., Tingey, M., & Webb, J. (2014). Local Engagement in UK Energy Systems A Pilot Study of Current Activities and Future Impact. Loughborough: Energy Technologies Institute.
- Hawkey, D., Webb, J., & Winskel, M. (2013). Organisation and governance of urban energy systems: district heating and cooling in the UK. *Journal of Cleaner Production*, 50, 22–31. <http://doi.org/10.1016/j.jclepro.2012.11.018>
- Hawkey, D., Webb, J., Lovell, H., McCrone, D., Tingey, M., & Winskel, M. (2016). Sustainable Urban Energy Policy: heat and the city. Abingdon: Routledge.
- Heidrich, O., Dawson, R. J., Reckien, D., & Walsh, C. L. (2013). Assessment of the climate preparedness of 30 urban areas in the UK. *Climatic Change*, 120(4), 771–784. <http://doi.org/10.1007/s10584-013-0846-9>
- Heidrich, O., Reckien, D., Olazabal, M., Foley, A., Salvia, M., de Gregorio Hurtado, S., et al. (2016). National climate policies across Europe and their impacts on cities strategies. *Journal of Environmental Management*, 168(C), 36–45. <http://doi.org/10.1016/j.jenvman.2015.11.043>
- Helgesson, C.-F., & Muniesa, F. (2013). For What It's Worth: An Introduction to Valuation Studies. *Valuation Studies*, 1(1), 1–10. <http://doi.org/10.3384/vs.2001-5992.13111>
- Helgesson, C.-F., & Muniesa, F. (2014). Valuation Is Work. *Valuation Studies*, 2(1), 1–4. <http://doi.org/10.3384/vs.2001-5992.14211>
- Helgesson, C.-F., Krause, M., & Muniesa, F. (2017). Attempting to Bring Valuation and Politics Together: The Politics of Valuation Studies at a Series of Sessions in Copenhagen. *Valuation Studies*, 5(1), 1–6. <http://doi.org/10.3384/VS.2001-5992.17511>
- Higgins, P., James, P., & Roper, I. (2005). The Role of Competition in Best Value: How Far Does it Differ from CCT? *Local Government Studies*, 31(2), 219–235. <http://doi.org/10.1080/03003930500032148>
- Hodson, M., & Marvin, S. (2016). The mutual construction of urban retrofit and scale: Governing ON, IN and WITH in Greater Manchester. *Environment and Planning C: Government and Policy*, 1–20. <http://doi.org/10.1177/0263774X15625993>
- Holstein, J. A., & Gubruim, J. F. (2011). Animating Interview Narratives. In D. Silverman (Ed.), *Qualitative Research Issues of Theory, Practice and Method*. London: Sage Publications Ltd.
- Hood, C. (1995). The “New Public Management” in the 1980s: Variations on a Theme. *Accounting, Organizations and Society*, 20, 93–109. [http://doi.org/10.1016/0361-3682\(93\)E0001-W](http://doi.org/10.1016/0361-3682(93)E0001-W)
- Hood, C. (2007). Public Service Management by Numbers: Why Does it Vary? Where Has it Come From? What Are the Gaps and the Puzzles? *Public Money and Management*, 27(2), 95–102. <http://doi.org/10.1111/j.1467-9302.2007.00564.x>

- House of Commons Communities and Local Government Committee. (2014). *Local government procurement: Sixth Report of Session 2013–14* (pp. 1–72). London: House of Commons.
- Hughes, S. (2020, March 13). Tackling climate change, the left behind and infrastructure needs: How changing the Green Book can help. Retrieved July 11, 2020, from <https://www.lgcplus.com/finance/stephen-hughes-six-changes-to-treasury-green-book-to-deliver-levelling-up-13-03-2020/>
- Ince, R., & Marvin, S. (2019). Constructing domestic retrofit as a new urban infrastructure: experimentation, equitability and contested priorities. *Local Environment*, 24(9), 825–842. <http://doi.org/10.1080/13549839.2019.1648401>
- John, P. (2001). *Local Governance in Western Europe*. London: Sage Publications Ltd.
- King, M. (2016a). *District Energy Procurement Agency: Briefing* (pp. 1–3). District Energy Vanguard Network.
- King, M. (2016b). *District Energy Procurement Agency: Introduction* (pp. 1–8). Presented at the UK Local Authority District Energy Vanguard Network Event, Manchester.
- Kjellberg, H., & Mallard, A. (2013). Valuation Studies? Our Collective Two Cents. *Valuation Studies*, 1(1), 11–30. <http://doi.org/10.3384/vs.2001-5992.131111>
- Kuriakose, J., Anderson, K., Broderick, J., & McLachlan, C. (2018). *Quantifying the implications of the Paris Agreement for the city of Manchester* (pp. 1–6). Manchester: University of Manchester.
- Kuriakose, J., Jones, C., Anderson, K., Broderick, J., & McLachlan, C. (2019). *Setting Climate Change Commitments for West Midlands Combined Authority Area: Quantifying the Implications of the United Nations Paris Agreement on Climate Change for West Midlands Combined Authority* (pp. 1–20). Manchester: University of Manchester.
- Kuzemko, C., & Britton, J. (2020). Policy, politics and materiality across scales: A framework for understanding local government sustainable energy capacity applied in England. *Energy Research & Social Science*, 62, 101367. <http://doi.org/10.1016/j.erss.2019.101367>
- Ladner, A., Keuffer, N., & Baldersheim, H. (2015). *Self-rule Index for Local Authorities (1990-2014). Release 1.0*. Brussels: European Commission.
- Lamont, M. (2012). Toward a Comparative Sociology of Valuation and Evaluation. *Annual Review of Sociology*, 38(1), 201–221. <http://doi.org/10.1146/annurev-soc-070308-120022>
- Lapsley, I., Miller, P., & Panozzo, F. (2010). Accounting for the city. *Accounting, Auditing & Accountability Journal*, 23(3), 305–324. <http://doi.org/10.1108/09513571011034316>
- Law, J., & Callon, M. (1994). The Life and Death of an Aircraft: A Network Analysis of Technical Change. In *Shaping technology building society studies in sociotechnical change* (pp. 21–52).
- Lemon, M., Pollitt, M. G., & Steer, S. (2015). Local energy policy and managing low carbon transition: The case of Leicester, UK, 6(c), 57–63. <http://doi.org/10.1016/j.esr.2015.02.001>
- LEUKES. (2017). *Local Engagement in UK Energy Systems: Local Authority Online Questionnaire*. (J. Webb, D. Hawkey, & M. Tingey).
- Local Partnerships. (2016). *RE:FIT Better buildings, lower costs, making significant savings from your estate in 2016* (pp. 1–2). London: Local Partnerships.

- London Sustainable Development Commission. (2020). *Financing for a Future London: How to finance a fair transition to a resilient, circular, zero carbon London* (pp. 1–62). London: GLA.
- Lovell, H. (2016). The surprising outcomes of UK energy and climate policy: zero carbon housing targets and the emerging opportunities for district heating. In *Sustainable Urban Energy Policy: heat and the city* (pp. 204–216). Abingdon: Routledge.
- Lowndes, V., & Gardner, A. (2016). Local governance under the Conservatives: super-austerity, devolution and the “smarter state.” *Local Government Studies*, 42(3), 357–375. <http://doi.org/10.1080/03003930.2016.1150837>
- Lowndes, V., & Pratchett, L. (2012). Local Governance under the Coalition Government: Austerity, Localism and the “Big Society.” *Local Government Studies*, 38(1), 21–40. <http://doi.org/10.1080/03003930.2011.642949>
- Mackenzie, D. (2006). *An Engine, Not a Camera: How Financial Models Shape Markets*. MIT Press Scholarship Online. <http://doi.org/10.7551/mitpress/9780262134606.001.0001>
- Mackenzie, D. (2009). *Material Markets: How Economic Agents Are Constructed*. Oxford: Oxford University Press.
- Mackenzie, D. (2019). Market devices and structural dependency: The origins and development of “dark pools.” *Finance and Society*, 5(1), 1–19. <http://doi.org/10.2218/finsoc.v5i1.3015>
- Mallaburn, P. S., & Eyre, N. (2013). Lessons from energy efficiency policy and programmes in the UK from 1973 to 2013. *Energy Efficiency*, 7(1), 23–41. <http://doi.org/10.1007/s12053-013-9197-7>
- Marchand, R. D., Koh, S. C. L., & Morris, J. C. (2015). Delivering energy efficiency and carbon reduction schemes in England: Lessons from Green Deal Pioneer Places. *Energy Policy*, 84(C), 96–106. <http://doi.org/10.1016/j.enpol.2015.04.035>
- Mason, J. (2002). *Qualitative Researching*. London: Sage Publications Ltd.
- McFall, L. (2009). Devices and Desires: How Useful Is the “New” New Economic Sociology for Understanding Market Attachment? *Sociology Compass*, 3(2), 267–282. <http://doi.org/10.1111/j.1751-9020.2009.00195.x>
- Miller, J., & Glassner, B. (2011). The “Inside” and the “Outside”: Finding Realities in Interviews. In D. Silverman (Ed.), *Qualitative Research Issues of Theory, Method and Practice*. London: Sage Publications Ltd.
- Miller, P. (1998). The margins of accounting. *The Sociological Review*, 46(S1), 174–193. <http://doi.org/10.1111/j.1467-954X.1998.tb03474.x>
- Miller, P. (2001). Governing by numbers: Why calculative practices matter. *Social Research*, 68(2), 379–396.
- Miller, P. (2008). Calculating Economic Life. *Journal of Cultural Economy*, 1(1), 51–64. <http://doi.org/10.1080/17530350801913643>
- Miller, P., & Power, M. (2013). Accounting, Organizing, and Economizing: Connecting Accounting Research and Organization Theory. *The Academy of Management Annals*, 7(1), 557–605. <http://doi.org/10.1080/19416520.2013.783668>
- Miller, P., & Rose, N. (2008). *Governing the Present: Administering Economic, Social and Personal Life*. Cambridge: Polity Press.
- Mills, A., Durepos, G., & Wiebe, E. (2012). Sampling. In *Encyclopedia of Case Study Research* (pp. 1–6). Thousand Oaks: Sage Publications. <http://doi.org/10.4135/9781412957397>

- Ministry of Housing, Communities and Local Government. (2019). *Local Government Financial Statistics England No. 29 2019* (pp. 1–41). London: Ministry of Housing, Communities and Local Government.
- Ministry of Housing, Communities and Local Government. (2020). *Statutory intervention and inspection: a guide for local authorities* (pp. 1–27). London: Ministry of Housing, Communities and Local Government.
- Morris, J., Harrison, J., Genovese, A., Goucher, L., & Koh, S. C. L. (2017). Energy policy under austerity localism: what role for local authorities? *Local Government Studies*, 43(6), 882–902. <http://doi.org/10.1080/03003930.2017.1359164>
- Muniesa, F. (2012). A flank movement in the understanding of valuation. *The Sociological Review*, 59(s2), 24–38.
- Muniesa, F. (2014). *The Provoked Economy*. Abingdon: Routledge.
- Muniesa, F., Millo, Y., & Callon, M. (2007). An introduction to market devices. *The Sociological Review*, 55(s2), 1–12.
- Murray, J. G. (2011). Third sector commissioning and English local government procurement. *Public Money and Management*, 31(4), 279–286. <http://doi.org/10.1080/09540962.2011.586241>
- National Audit Office. (2018). *Financial sustainability of local authorities 2018*. London: National Audit Office.
- National Audit Office. (2019). *Local authority governance*. London: National Audit Office.
- Nolden, C., & Sorrell, S. (2016). The UK market for energy service contracts in 2014–2015. *Energy Efficiency*, 9(6), 1405–1420. <http://doi.org/10.1007/s12053-016-9430-2>
- North, D. (2005). Capitalism and Economic Growth. In V. Nee & R. Swedberg (Eds.), *The Economic Sociology of Capitalism* (pp. 41–52). Oxford: Princeton University Press.
- Northamptonshire County Council. (2018). *Report under Section 114 of the Local Government Finance Act, 1988: Letter to Members of Northamptonshire County Council*. Northampton: Northamptonshire County Council. Retrieved from <https://www.northamptonshire.gov.uk/councilservices/council-and-democracy/budgets-and-spending/Pages/spending-controls.aspx>
- Nutley, S., Downe, J., Martin, S., & Grace, C. (2012). Policy transfer and convergence within the UK: the case of local government performance improvement regimes. *Policy & Politics*, 40(2), 193–209. <http://doi.org/10.1332/147084411X581880>
- O'Brien, D. (2012). Drowning the Deadweight in the Rhetoric of Economism: What Sport Policy, Free Swimming, and EMA Tell us About Public Services After the Crash. *Public Administration*, 91(1), 69–82. <http://doi.org/10.1111/j.1467-9299.2011.02019.x>
- O'Brien, P., & Pike, A. (2018). “Deal or no deal?” Governing urban infrastructure funding and financing in the UK City Deals. *Urban Studies*, 48(1). <http://doi.org/10.1177/0042098018757394>
- Pickard, J. (2018, November 30). Northamptonshire council handed bailout to avert insolvency. *Financial Times*. London.
- Pinsent Masons. (2015). *A Short Guide to: The New Public Contracts Regulations 2015* (pp. 1–5). London: Pinsent Masons.
- Pollock, N., & Campagnolo, G. M. (2015). Subitizing Practices and Market Decisions: The Role of Simple Graphs in Business Valuations. In M.

- Kornberger, L. Justesen, J. Mouritsen, & A. K. Madsen (Eds.), *Making Things Valuable* (pp. 89–108). Oxford: Oxford University Press.  
<http://doi.org/10.1093/acprof:oso/9780198712282.001.0001/acprof-9780198712282>
- Polzin, F., Flotow, von, P., & Nolden, C. (2016). What encourages local authorities to engage with energy performance contracting for retrofitting? Evidence from German municipalities. *Energy Policy*, *94*, 317–330.  
<http://doi.org/10.1016/j.enpol.2016.03.049>
- Power, M. (2010). *The Audit Society: Rituals of Verification*. Oxford: Oxford University Press.
- Preda, A. (2007). The Sociological Approach to Financial Markets. *Journal of Economic Surveys*, *21*(3), 506–533.
- Preda, A. (2009). *Information, Knowledge, and Economic Life*. Oxford: Oxford University Press.
- Prior, L. (2008). Repositioning Documents in Social Research. *Sociology*, *42*(5), 821–836. <http://doi.org/10.1177/0038038508094564>
- Prior, L. (2011). Using Documents in Social Research. In D. Silverman (Ed.), *Qualitative Research Issues of Theory, Method and Practice* (pp. 93–110). London: Sage Publications Ltd.
- Prowle, M., Kalar, M., & Barrow, L. (2016). New development: Value for money (VFM) in public services—the importance of organizational culture. *Public Money and Management*, *36*(7), 547–552.  
<http://doi.org/10.1080/09540962.2016.1237169>
- Reckien, D., Salvia, M., Heidrich, O., Church, J. M., Pietrapertosa, F., De Gregorio-Hurtado, S., et al. (2018). How are cities planning to respond to climate change? Assessment of local climate plans from 885 cities in the EU-28. *Journal of Cleaner Production*, *191*, 207–219.  
<http://doi.org/10.1016/j.jclepro.2018.03.220>
- Rocher, L. (2017). Governing metropolitan climate-energy transition: A study of Lyon's strategic planning. *Urban Studies*, *54*(5), 1092–1107.  
<http://doi.org/10.1177/0042098015624851>
- Roelich, K., Bale, C. S. E., Turner, B., & Neal, R. (2018). Institutional pathways to municipal energy companies in the UK: realising co-benefits to mitigate climate change in cities. *Journal of Cleaner Production*.  
<http://doi.org/10.1016/j.jclepro.2018.02.002>
- Rose, N., & Miller, P. (2010). Political power beyond the State: problematics of government. *The British Journal of Sociology*, *61*, 271–303.  
<http://doi.org/10.1111/j.1468-4446.2009.01247.x>
- Rosenow, J., & Eyre, N. (2016). A post mortem of the Green Deal: Austerity, energy efficiency, and failure in British energy policy. *Energy Research & Social Science*, *21*, 141–144. <http://doi.org/10.1016/j.erss.2016.07.005>
- Royal Society of Edinburgh. (2019). *Scotland's Energy Future: RSE Inquiry* (pp. 1–124). Edinburgh: The Royal Society of Edinburgh.
- Rubin, H. J., & Rubin, I. (2005). *Qualitative interviewing: the art of hearing data* (2<sup>nd</sup> Edition). Thousand Oaks: Sage Publications.
- Rutherford, J., & Jaglin, S. (2015). Introduction to the special issue – Urban energy governance: Local actions, capacities and politics. *Energy Policy*, *78*, 173–178.  
<http://doi.org/10.1016/j.enpol.2014.11.033>

- Rydin, Y., Guy, S., Goodier, C., Chmutina, K., Devine-Wright, P., & Wiersma, B. (2015). The financial entanglements of local energy projects. *Geoforum*, 59(C), 1–11. <http://doi.org/10.1016/j.geoforum.2014.11.019>
- Rydin, Y., Turcu, C., Guy, S., & Austin, P. (2013). Mapping the coevolution of urban energy systems: pathways of change. *Environment and Planning A*, 45(3), 634–649. <http://doi.org/10.1068/a45199>
- Ryen, A. (2011). Ethics and Qualitative Research. In D. Silverman (Ed.), *Qualitative Research Issues of Theory, Method and Practice*. London: Sage Publications Ltd.
- Sandford, M. (2014). *Local authorities: the General Power of Competence* (pp. 1–9). London: House of Commons Library.
- Scottish Executive. (2004). *The Local Government in Scotland Act 2003 Best Value Guidance* (pp. 1–31). Edinburgh: Scottish Executive.
- Scottish Futures Trust. (2011). *Value for Money Assessment Guidance: Capital Programmes and Projects* (pp. 1–136). Edinburgh: SFT and Scottish Government.
- Scottish Government. (2018a). *Climate Change Plan: The Third Report on Proposals and Policies 2018-2032* (pp. 1–222). Edinburgh: Scottish Government.
- Scottish Government. (2018b). *Energy Efficient Scotland* (pp. 1–70). Edinburgh: Scottish Government.
- Segan, J. (2013). Exploring the “Best Value” Duty. *Judicial Review*, 18(1), 93–98. <http://doi.org/10.5235/10854681.18.1.93>
- Shackley, S., Fleming, P. D., & Bulkeley, H. (2002). Low carbon spaces: area-based carbon emission reduction - a scoping study. London: Sustainable Development Commission.
- Shove, E. (2010). Social Theory and Climate Change. *Theory, Culture & Society*, 27(2-3), 277–288. <http://doi.org/10.1177/0263276410361498>
- Silvast, A. (2017). Energy, economics, and performativity: Reviewing theoretical advances in social studies of markets and energy. *Energy Research & Social Science*, 34, 4–12. <http://doi.org/10.1016/j.erss.2017.05.005>
- Slack, E., & Côté, A. (2014). Comparative urban governance Future of Cities: working paper. London: Government Office for Science.
- Sovacool, B. K. (2014). What are we doing here? Analyzing fifteen years of energy scholarship and proposing a social science research agenda. *Energy Research & Social Science*, 1, 1–29. <http://doi.org/10.1016/j.erss.2014.02.003>
- Star, S. L. (2010). This is Not a Boundary Object: Reflections on the Origin of a Concept. *Science, Technology & Human Values*, 35(5), 601–617. <http://doi.org/10.1177/0162243910377624>
- Stark, D. (2000). *For a Sociology of Worth*. New York: Center on Organizational Innovation, Columbia University.
- Stark, D. (2009). *The Sense of Dissonance*. Princeton: Princeton University Press. <http://doi.org/10.1515/9781400831005>
- Stoker, G. (2004). *Transforming local governance: from Thatcherism to New Labour*. Basingstoke: Palgrave Macmillan.
- Sudmant, A., Millward-Hopkins, J., Colenbrander, S., & Gouldson, A. (2016). Low carbon cities: is ambitious action affordable? *Climatic Change*, 1–8. <http://doi.org/10.1007/s10584-016-1751-9>
- Sugden, D., Werritty, A., Webb, J., Caldwell, E., Campbell, C., Dlugolecki, A., et al. (2012). Multi-level governance: opportunities and barriers in moving to a low-

- carbon Scotland. *Earth and Environmental Science Transactions of the Royal Society of Edinburgh*, 103(02), 175–186.  
<http://doi.org/10.1017/S1755691013000078>
- Sullivan, R., Gouldson, A., & Webber, P. (2013). Funding low carbon cities: local perspectives on opportunities and risks. *Climate Policy*, 13(4), 514–529.  
<http://doi.org/10.1080/14693062.2012.745113>
- Swedberg, R. (2005). The Economic Sociology of Capitalism: An Introduction and Agenda. In V. Nee & R. Swedberg (Eds.), *The Economic Sociology of Capitalism* (pp. 3–40). Oxford: Princeton University Press.
- Tingey, M., Hawkey, D., & Webb, J. (2016). Assessing local government engagement in energy systems development in the UK and its likely trajectories. In *Sustainable Urban Energy Policy: heat and the city* (pp. 157–182). Abingdon: Routledge.
- Tingey, M., Webb, J., & Hawkey, D. (2017). *Local Authority Engagement in UK Energy Systems: Highlights from Early Findings*. London and Loughborough: UKERC and The ETI.
- Tingey, M., & Webb, J. (2020a). Governance institutions and prospects for local energy innovation: laggards and leaders among UK local authorities. *Energy Policy*, 138, 111211. <http://doi.org/10.1016/j.enpol.2019.111211>
- Tingey, M., & Webb, J. (2020b). Net zero localities: ambition & value in UK local authority investment (pp. 1–38). Glasgow: University of Strathclyde Publishing.
- Tingey, M., Webb, J., & van der Horst, D. (in preparation). Business models for retrofitting: a typology local authority initiatives. Invited submission to *Buildings & Cities* special issue on retrofitting at scale.
- UK Committee on Climate Change. (2012). *How local authorities can reduce emissions and manage climate risks*. London: CCC.
- UK Committee on Climate Change. (2019). *Net Zero: The UK's contribution to stopping global warming*. London: CCC.
- UK Debt Management Office. (2020). Public Works Loan Board (PWLb). Retrieved March 27, 2020, from <https://www.dmo.gov.uk/responsibilities/local-authority-lending-pwlb/about-pwlb/>
- UK Government. (1999). *Modernising government* (pp. 1–66). London: UK Government.
- UK Government. (2008). *Creating Strong, Safe and Prosperous Communities* (pp. 1–58). London: UK Government.
- UK Government. (2017). *The Clean Growth Strategy: Leading the way to a low carbon future* (pp. 1–165). London: UK Government.
- UK Treasury. (2011). *The Green Book: Appraisal and Evaluation in Central Government* (pp. 1–118). London: UK Treasury.
- UK Treasury. (2013a). *Assessing business cases “a short plain English guide”* (pp. 1–9). London: UK Treasury.
- UK Treasury. (2013b) *Checklist for Assessment of Business Cases* (pp. 1–1). London: UK Treasury.
- UK Treasury. (2015a). *Public Sector Business Cases Using the Five Case Model: Green Book Supplementary Guidance on Delivering Public Value From Spending Proposals* (pp. 1–152). London: UK Treasury.
- UK Treasury. (2015b). *Valuing infrastructure spend: Supplementary guidance to the Green Book* (pp. 1–44). London: UK Treasury.

- UK Treasury, Public Service Transformation Network, New Economy. (2014). *Supporting public service transformation: cost benefit analysis guidance for local partnerships* (pp. 1–66). London: UK Treasury.
- UK100. (2017) *Financing the Transition: Harnessing UK Cities' Ambition for Clean Energy* (pp. 1–39). London: UK100.
- Unsworth, S., Valero, A., & Stern, N. (2020). Delivering strong and sustainable growth in the UK: A special decade for innovation and investment - Grantham Research Institute on climate change and the environment, 1–20.
- Urry, J. (2011). *Climate Change and Society*. Cambridge: Polity Press.
- van Teijlingen, E., & Hundley, V. (2001). The importance of pilot studies. *Social Research Update*, (35), 1–4.
- Van Veelen, B., Pinker, A., Tingey, M., Taylor Aiken, G., & Eadson, W. (2019). What can energy research bring to social science? Reflections on 5 years of Energy Research & Social Science and beyond. *Energy Research & Social Science*, 57(101240), 1–6. <http://doi.org/10.1016/j.erss.2019.101240>
- Wade, F., Webb, J., & Creamer, E. (2019). *Local Heat and Energy Efficiency Strategies: Phase 1 Pilots Social Evaluation Report*. Edinburgh: ClimateXChange. Retrieved from <https://www.climateexchange.org.uk/research/publications-library/>
- Wade, F., Webb, J., & Tingey, M. (forthcoming). Local heat and energy efficiency policy: ambiguity and ambivalence in Scotland and England. In *Research Handbook on Energy and Society*. Cheltenham, Edward Elgar.
- Walker, B., & Davis, H. (1999). Perspectives on contractual relationships and the move to best value in local authorities. *Local Government Studies*, 25(2), 16–37. <http://doi.org/10.1080/03003939908433945>
- Wall, A., & Martin, G. (2003). Best Value: how Local Authorities in Northern Ireland are consulting with stakeholders. *Journal of Finance and Management in Public Services*.
- Watson, J. (Ed.). (2019). *Review of Energy Policy 2019* (pp. 1–16). London: UKERC. Retrieved from <http://www.ukerc.ac.uk/publications/rep19.html>
- Webb, J. (2015). Improvising innovation in UK urban district heating: The convergence of social and environmental agendas in Aberdeen. *Energy Policy*, 78, 265–272. <http://doi.org/10.1016/j.enpol.2014.12.003>
- Webb, J. (2018). The challenge of effective energy efficiency policy in the United Kingdom. In *Transitions in Energy Efficiency and Demand The Emergence, Diffusion and Impact of Low-Carbon Innovation* (1st ed., pp. 195–214). Abingdon: Routledge. <http://doi.org/10.4324/9781351127264>
- Webb, J. (2019). New lamps for old: financialised governance of cities and clean energy. *Journal of Cultural Economy*, 1–13. <http://doi.org/10.1080/17530350.2019.1613253>
- Webb, J., & Hawkey, D. (2016). On (not) assembling a market for sustainable energy: heat network infrastructure and British cities. *Journal of Cultural Economy*, 1–13. <http://doi.org/10.1080/17530350.2016.1226193>
- Webb, J., Hawkey, D., & Tingey, M. (2016). Governing cities for sustainable energy: The UK case. *Cities*, 54, 28–35. <http://doi.org/10.1016/j.cities.2015.10.014>
- Webb, J., Tingey, M., & Hawkey, D. (2017). *What We Know about Local Authority Engagement in UK Energy Systems: Ambitions, Activities, Business Structures & Ways Forward*. London and Loughborough: UKERC and ETI.
- Welsh Government. (2010). *Wales Programme for Improvement (WPI) Part 1: Local Government Improvement* (pp. 1–38). Welsh Government, Cardiff.



- Welsh Government. (2019). *Prosperity for All: A Low Carbon Wales*. Welsh Government, Cardiff.
- Williamson, R. F., Sudmant, A., Gouldson, A., & Boyd, J. (2019). *The Economics of Low Carbon Cities: Achieving Net Zero in the City of Edinburgh Summary Report (Draft Version)* (pp. 1–33). Edinburgh: City of Edinburgh Council.
- Wilson, J. (1999). From CCT to best value: Some evidence and observations. *Local Government Studies*, 25(2), 38–52. <http://doi.org/10.1080/03003939908433946>
- Wiltshire, R., King, M., Banks, N., & Webb, J. (2013). *Research into barriers to deployment of district heating networks*. London: Department of Energy and Climate Change.
- Wurzel, R. K. W., Moulton, J. F. G., Osthorst, W., Mederake, L., Deutz, P., & Jonas, A. E. G. (2019). Climate pioneership and leadership in structurally disadvantaged maritime port cities. *Environmental Politics*, 28(1), 146–166. <http://doi.org/10.1080/09644016.2019.1522039>
- Yin, R. (2014). *Case Study Research: Design and Methods* (5 ed.). London: Sage Publications Ltd.
- Yin, R. K. (2018). *Case study research and applications: design and methods*. Los Angeles: Sage Publications.

# Appendix I Overview of UK Local Government Structure

## Local Authority statutory responsibilities and the UK local government structure

**Main responsibilities:** The main UK local government functions are: council tax, economic development, education, environmental health, housing, leisure and recreation, libraries, planning applications, social care, strategic planning, transport and waste management.

Type	Tier	Country	Main responsibilities	N
Unitary			All main service areas.	56
Metropolitan district borough	Single		All main services areas. Use of Special Purpose Authorities for strategic areas like transport and waste.	36
County council	Upper		Education, environmental health, leisure and recreation, libraries, social care, strategic planning, transport and waste management.	27 now 26
District borough council	Lower		Housing, economic development, council tax, planning applications, waste collection.	201 now 192
Greater London Authority	Upper	England	Strategic role across London in transport, spatial planning, housing, economic development, environment (including climate change, energy and waste), culture, public health, policing and fire services.	
London borough	Lower		All services except Greater London Authority strategic functions. Waste is coordinated through five joint waste authorities.	32
City of London Corporation	Lower		Same as London boroughs plus policing, as port health authority, promotion of financial services in City of London and City Bridge Trust.	1
		Northern Ireland	Environmental health, leisure and recreation, waste, also role in economic and community development.	26 now 11
Unitary	Single	Scotland	All main services areas plus community planning approach and four Strategic Development Planning Authorities for cross-authority services in the city-region areas.	32
		Wales	All main service areas.	22

Source: Adapted from Tingey and Webb (2020a).

## **Appendix II Local Authority Decision Making Structures**

Local authorities operate under either an Executive, Committee or Hybrid model.

### **Executive Model: Leader (or Mayor) and Cabinet**

Council elects leader and leader appoints cabinet with cabinet members holding portfolio positions. These portfolio positions vary, depending on the council, but typically cover housing, education, economic development etc.

Where a Mayor is directly elected (such as in Bristol), the Mayor appoints the Cabinet.

### **Committee System**

The responsibilities of the Leader are enacted across a structure of multiple committees rather than a single Cabinet.

### **Hybrid model**

A mix of the executive and committee structure.

### **Full Council**

All elected representatives. Full Council approves the budget and sets the overarching framework that the Executive, Committee or Hybrid works to.

### **Overview and scrutiny**

In all instances, overview and scrutiny committees are in place to scrutinise decisions, ensure democratic oversight and accountable decision making. Overview and scrutiny committees tend to align to the main directorates. For example, Manchester has six of these committees aligned to children and young people, communities and equalities, neighbourhoods and environment, economy, health, resources and governance; conversely,

Bristol has five: resources, communities, people, growth and regeneration, and overview and scrutiny management.

### **Senior Management**

The senior management represents the Chief Executive (Head of Paid Services) and Directors of each service area in the Council. Specified service areas depend on both local authority responsibilities (i.e. whether responsible for housing, social care or education etc.), but also how services are organised, for example, whether services are grouped.

## Appendix III Target Case Study Sample

Case Study Local Authorities			
LA Name	Region	Country	Authority Type
Bath & N E Somerset	South West		Unitary
Birmingham	West Midlands		Met District
Bristol	South West		Unitary
Calderdale	Yorkshire & Humber		Met District
Cambridge	East of England		District Borough
Cambridgeshire	East of England		County Council
Camden	Greater London		London Borough
Derby	East Midlands		Unitary
Enfield	Greater London		London Borough
Exeter	South West		District Borough
Gateshead	North East		Met District
Greater Manchester	North West		Combined Authority
Greenwich	Greater London		London Borough
Haringey	Greater London		London Borough
Hull	Yorkshire & Humber	England	Unitary
Islington	Greater London		London Borough
Leeds	Yorkshire & Humber		Met District
Leicester	East Midlands		Unitary
Leicestershire	East Midlands		County Council
Manchester	North West		Met District
Newcastle	North East		Met District
Oxford	South East		District Borough
Peterborough	East of England		Unitary
Plymouth	South West		Unitary
Reading	South East		Unitary
Sutton	Greater London		London Borough
Warrington	North West		Unitary
West Yorkshire	Yorkshire & Humber		Combined Authority
Wolverhampton	West Midlands		Met District
Derry City and Strabane		Northern Ireland	Unitary
Aberdeen			
Aberdeenshire			
Dundee			
Edinburgh		Scotland	Unitary
Fife			
Glasgow			
Stirling			
Bridgend			
Cardiff		Wales	Unitary
Swansea			

<b>Included in initial target long list, but unable or unwilling to contribute</b>			
Cornwall	South West		Unitary
Croydon	Greater London		London Borough
Devon	South West		County Council
Eastleigh	South East		District Borough
Hampshire	South East	England	County Council
Kirklees	Yorkshire & Humber		Met District
Sheffield	Yorkshire & Humber		Met District
Southampton	South East		Unitary
Woking	South East		District Borough
Belfast		Northern Ireland	Unitary
Midlothian		Scotland	Unitary
<b>Included in initial target long list, but 40 case studies recruited (i.e. not contacted)</b>			
Barking & Dagenham	Greater London		London Borough
Brent	Greater London		London Borough
East Sussex	South East		County Council
Kensington & Chelsea	Greater London		London Borough
North Yorkshire	Yorkshire & Humber		County Council
Nottingham	East Midlands	England	Unitary
Poole	South West		Unitary
Southwark	Greater London		London Borough
Stoke-on-Trent	West Midlands		Unitary
Suffolk	East of England		County Council
Wigan	North West		Met District
Isle of Anglesey		Wales	Unitary

## **Appendix IV Interview Schedule**

This is the main data collection instrument that was extended for my data collection.

### **Research on Local Authority Energy and Carbon Plans and Projects**

#### **Interview Note <LA NAME>**

##### **About the interview**

The interview will be conducted by <telephone/in person>. It is likely to last between 45 minutes and 1 hour. We would like you to be as open and honest as possible during the interview. This will help improve our understanding of: the reality of local authority work to develop energy projects; the local approach to energy and carbon management; the successes you have had; the challenges faced and the lessons that can be learned. You will not be personally identifiable unless otherwise agreed with you.

To ensure that we accurately capture your views we would like to make an audio recording of the interview. The recording and transcript of the interview will be stored securely, in accordance with the Data Protection Act, and the data use and storage information outlined in the Detailed Information document already provided to you.

##### **Discussion topics**

1. Overview of your role at the Council and background in local government, energy and energy efficiency.
2. The objectives relating to the council's approach to local energy and carbon management.
3. How the council defines and measures the benefits of any local energy initiative. The approach to achieving 'Best Value', value for money and other assessment criteria in justifying council activities.
4. Where the project is located within Council structures, the internal support for the project and any particular reporting in place about the project.
5. The outcomes and achievements of the project, any changes to objectives over the course of project lifetime, and challenges experienced.
6. Project ownership, business model and financing the project.
7. Policy changes that might support your local authority in delivering a local strategic approach to energy.

## Appendix V Questions drawn from the LEUKES questionnaire

The following questions from the LEUKES questionnaire (2017) were used in my analysis.

### Guide

- Indicates a closed single option response
  - Indicates a multiple choice response
- Where neither is used, indicates an open text box

### Question wording

What is the project's name and location?

Name of project

Location (e.g. city, town, district) Provide full address if applicable

Post code if applicable

What stage is the project at? Select one option.

- Initial scoping or pre-feasibility
- Feasibility
- Design
- Development
- Procurement
- Build or construction
- Operational
- Other (please specify)

What are the main Council objectives driving the project? Select all options that apply.

- Carbon reduction
- Energy demand reduction
- Energy resilience and/or security of supply
- Affordable warmth including fuel poverty
- Local population health improvement
- European/international profile
- Local skills development
- Job creation
- Local economic development
- Income generation for council
- Financial saving for council
- Attracting inward investment
- Compliance with central/devolved government policies
- Compliance with EU directives
- Other (please specify)



What are the main technologies used, or to be used, in the project? Select all that apply.

Where appropriate, please tell us the principal fuel source in the box at the bottom.

- Anaerobic digestion
- Building control energy management system
- Combined Heat and Power- CHP
- Micro CHP
- District heating (and cooling)
- Thermal storage
- Electric vehicles
- Energy from waste plant
- Heat pumps
- Insulation measures
- LED street lighting
- Onshore wind
- Solar PV
- Solar Thermal
- Smart metering
- Voltage optimisation
- Other, please specify: \_\_\_\_\_
- Not applicable

Who are the users or customers of this project and how many are there?

Provide the number and type of user in the relevant boxes (e.g. 2 organisations, 25 buildings, 100 householders, 1,250 individuals)

If the project is operational include existing users only.

If the project is not yet operational include expected, target and/or guaranteed users.

Approximate if you are unsure.

- Council estate inc. leisure
- Residential inc. council housing
- Commercial
- Industrial
- Hospitals
- Schools
- Transport passengers
- Universities
- Other, specify in box

Which Council departments or services have been involved in developing the project?

Please name the departments (services, internal groups etc.) important to the project.

- Initiated project
- Delivery lead within Council
- Other relevant internal departments or groups
- Internal governance group/board relevant to the project

Is the project structured as a separate legal entity?

- Yes
- No
- Not sure
- Decision has not yet been made

What is the legal structure?

- Community Interest Company
- Community Benefit Society
- Company Limited by Guarantee
- Company Limited by Shares
- Cooperative Society
- Limited Liability Partnership
- Other (please specify)

What is the total (known or expected) capital cost of the project? If you are unsure please estimate.

Total capital cost in £

How are the capital costs financed (or how will they be financed)? Select all that apply.

- Council budget (capital or revenue)
- Council borrowing (e.g. PWLB)
- Grant funding (various sources)
- Commercial partner project contribution
- Third party debt finance underwritten by council
- Third party debt finance not underwritten by council
- Third party equity finance
- Other, please specify \_\_\_\_\_
- Not sure

Please give us the following details about the finance. If you are unsure about any individual breakdown please estimate.

	Amount in £ e.g. £750,000 or £2.8m	Interest rate in %, if applicable	Loan term in number of years, if applicable	Name of finance source e.g. grant programme / scheme name, commercial partner name, if applicable	Or select unable to provide detail
Council budget (capital or revenue)					<input type="radio"/>
Council borrowing (e.g. PWLB)					<input type="radio"/>
Grant funding (various sources)					<input type="radio"/>
Commercial partner project contribution					<input type="radio"/>
Third party debt finance underwritten by council					<input type="radio"/>
Third party debt finance not underwritten by council					<input type="radio"/>
Third party equity finance					<input type="radio"/>
Other:					<input type="radio"/>

Does the project save money or generate money that releases pressure on other budgets (or expect to once operational)?

- Yes
- No
- Not sure

Which user groups does the approach to energy prioritise?

	Not applicable	Low priority	Medium priority	High priority
Council corporate estate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Commercial businesses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industrial processing/industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other public sector buildings/services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private sector housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transport passengers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please specify:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which areas of the Council's work are significant in shaping the approach to energy? Select all that apply.

- Corporate estate energy and/or carbon management
- Area/borough-wide energy and/or carbon plan
- Climate change
- Economic development
- Environmental services
- Fuel poverty
- Spatial planning
- Waste management
- Other (please specify)

What impact have any of the following had on the approach to energy? You can select multiple types of impact.

	Not applicable	Enabling impact	Motivating impact	Constraining impact
Statutory responsibilities and powers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spatial planning and building control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Best Value framework	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Procurement rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local authority budgets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reorganisation/restructure within council	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joining commitments on energy and climate change (such as the Nottingham Declaration)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please specify:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In recent years have any energy projects been temporarily stalled or permanently abandoned? Select all that apply.

- Energy projects have been temporarily stalled
- Energy projects have been permanently abandoned
- Not applicable

What is the main reason that projects have temporarily stalled?

What is the main reason that projects have been permanently abandoned?

# Appendix VI Overview Document Used in Recruitment

## Research on Local Authority Energy and Carbon Plans and Projects



THE UNIVERSITY *of* EDINBURGH

### Overview Document



## **Introduction**

This research examines the current and future contribution of local authorities to a low carbon, affordable and secure UK energy system. We are asking 40 local authorities from across the UK about their engagement with sustainable energy.

We know from our preliminary survey that over 80% of the UK's local authorities are acting on energy. Progress with the more ambitious energy efficiency and local generation and supply initiatives is however uneven, with around 40% managing to assemble funding for projects.

We are now trying to build a better understanding of the progress being made by a number of local authorities, and to identify policy changes which would support progress across all local authorities. We are an independent team of Edinburgh University researchers, with funding from UK Government Research Councils and the UK Energy Technologies Institute.

We would very much like to include your local authority in the research. This involves completing an online questionnaire about a specific energy project the Council is involved in and about the Council's broad approach to local energy. In discussion with you, we will agree which project to cover. We have used feedback from local officials to make the questions as straightforward as possible. The questionnaire will take around 30 minutes to complete, and will be followed up with a telephone interview, at a time to suit you, for a more in-depth discussion. Where feasible, and if you prefer, we can visit you in person. The interview will last for between 45 minutes and 1 hour.

## **Reasons to Participate**

In the short term, we hope that you will gain a new perspective on the Council's energy-related activities. In the medium term, the survey findings will help you to understand your Council's activities in relation to the bigger picture across the UK.

In addition, your contribution will inform UK policy by identifying the policy measures needed to support a step change in local energy and carbon management.

Specifically, the findings will give you:

- More informed and detailed insight into the pattern of local authority activity across the UK
- Knowledge about the effectiveness of interaction between local authorities and devolved governments in different parts of the UK
- Better understanding of the regional and inter-city patterns of activity, including knowledge sharing about activity in the Core Cities
- Potential for information sharing with other local authorities (where confidentiality permits)

In the longer term, the findings will shape policy and practice through interaction with:

- UK Government Department of Energy and Climate Change (DECC) Heat Network Delivery Unit (HNDU), Heat Strategy and Energy Efficiency teams
- Scottish Government Heat Networks Partnership

- UK Energy Research Centre and the Energy Technologies Institute: modelling the contribution of demand reduction and decentralised energy to future energy systems
- APSE Local Authority Energy Collaboration
- UK Local Authority District Energy Vanguards Network

Lead investigator Professor Jan Webb is a member of the Scottish Government Expert Commission on District Heating and Regulation, UK Nominated Expert to the International Energy Agency Programme on District Heating and Cooling, Trustee of environmental charity, SNIFFER, and member of NHS Scotland network for Sustainability and Health.

We have a strong track record of researching local sustainable energy and our findings have influenced UK and Scottish Governments' policies. For example, we have contributed to:

- UK Government DECC 2013 strategy *The Future of Heating* and subsequent creation of the Heat Networks Delivery Unit
- Scottish Government *Heat Policy Statement*
- Royal Society of Edinburgh inquiry *Facing Up To Climate Change* (published 2011)
- Oral evidence before the UK Parliament Energy and Climate Change Committee's evidence gathering on heat (September 2013)
- Scottish Futures Trust *Guidance on District Heating Delivery Structures*

## Confidentiality and participation

Participation in the research is voluntary. You have the right to withdraw at anytime or to refuse to participate. When we report the research we will name the Local Authorities taking part, but no individuals will be identified unless otherwise agreed with you. We will report summary data from our analysis such as regional variation in activity and generalizable themes from the sample of local authorities. Summary data will not identify individual local authorities. Where we report specific initiatives as 'case studies' we will include basic information such as the technology type or total investment value. We will not report on any commercially or otherwise sensitive information which you provide to us in confidence. Before publishing the findings we will ask you for your feedback, and if you prefer we will not include your Council as a highlighted 'case study'. We will provide a copy of our research report to everyone who participates.

## Access to data and questions about the research

The following people will have access to the data:

Research team:

- Professor Jan Webb, Principal Investigator, University of Edinburgh (0131 650 3987 [jan.webb@ed.ac.uk](mailto:jan.webb@ed.ac.uk))
- Dr Dave Hawkey, Research Fellow, University of Edinburgh (0131 650 2841 [dave.hawkey@ed.ac.uk](mailto:dave.hawkey@ed.ac.uk))
- Ms Mags Tingey, Research Officer, University of Edinburgh (0131 650 8093 [margaret.tingey@ed.ac.uk](mailto:margaret.tingey@ed.ac.uk))

In addition, the following sponsors:




- Professor Keith Bell, Strathclyde University, UK Energy Research Centre representative
- Dr Mike Colechin, UK Energy Technologies Institute representative

If you have any questions regarding this study, you may contact any of the research team.

# Appendix VII Detailed Information Document for Participants

**Research on Local Authority  
Energy and Carbon Plans and Projects**



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**Detailed Information for  
<COUNCIL NAME>**

## **Introduction**

Firstly thank you very much for agreeing to assist us. Information about the data gathering process for the research is detailed below.

## **Information about the online questionnaire**

The questionnaire asks for detailed information about a single energy project. We believe this is the best way to get in-depth evidence about specific changes taking place in local energy and energy efficiency. We know that most authorities have ambitious plans, and we know how hard it can be to get plans implemented. We therefore want to find out more about the specific opportunities, drivers and challenges faced by projects that are implemented, how these are being managed and funded, and what these mean for the future. We can use these findings to identify the key policy changes needed to reduce the obstacles to progress and to create a step change in action. The subsequent interview is an opportunity to discuss in more depth both project development and the Council's priorities and ambitions for local sustainable energy.

The online questionnaire is split into two sections; the first section asks about the <PROJECT NAME> and the second section is about your council's broad approach to energy and carbon management. After completion of the questionnaire we will follow up on < date >, for a more in-depth discussion.

## **Completion of the online questionnaire**

Where information has been provided in advance some of the responses will be pre-populated for you to review and amend. You can save your answers at any point and return to complete the questionnaire later. It will take around 30 minutes to complete depending on the specific project. There may be occasions when the particular project you are telling us about is more complicated than the questionnaire allows for. Please provide answers to the best of your ability and note anything additional you would like to discuss during the interview. For some questions you can respond directly or indicate you would prefer to provide a document detailing the information requested.

It will help you to complete the questionnaire if you have relevant information and documents to hand.

For the project, questions will ask about:

- Location and development stage
- Any technologies used, annual heat and electricity output, energy and/or carbon savings
- Customers or users of the energy project
- The development process (objectives and opportunities shaping project, council teams, any external support)
- Ownership arrangements and financing
- Any key performance indicators and other impacts
- As applicable, any feasibility study, business case, project initiation document and organogram detailing the governance structure for the energy project

For the council's broad approach to energy and carbon management questions will ask about:

- Areas of the Council's work that shape the approach to energy

- Role of council teams and external support
- Outcomes the Council prioritises when engaging with sustainable energy
- What enables and constrains the Council's approach to sustainable energy
- Documents relevant to the Council's approach (e.g. any sustainable energy strategy; fuel poverty strategy; carbon management plans etc)

### **Confidentiality and participation**

Participation in the research is voluntary. You have the right to withdraw at anytime or to refuse to participate. When we report the research we will name the Local Authorities taking part, but no individuals will be identified unless otherwise agreed with you. We will report summary data from our analysis such as regional variation in activity and generalizable themes from the sample of local authorities. Summary data will not identify individual local authorities. Where we report specific initiatives as 'case studies' we will include basic information such as the technology type or total investment value. We will not report on any commercially or otherwise sensitive information which you provide to us in confidence. Before we publishing the findings we will ask you for your feedback, and if you prefer we will not include your Council as a highlighted 'case study'. We will provide a copy of our research report to everyone who participates.

### **Access to data**

The following people will have access to the questionnaire and interview data:

Research team:

- Professor Jan Webb, Principal Investigator, University of Edinburgh
- Dr Dave Hawkey, Research Fellow, University of Edinburgh
- Ms Mags Tingey, Research Officer, University of Edinburgh

In addition, the following sponsors:

- Professor Keith Bell, Strathclyde University, UK Energy Research Centre representative
- Dr Mike Colechin, UK Energy Technologies Institute representative

### **Data use and storage**

All data gathered will be protected and processed under the terms of the Data Protection Act 1998. In addition the University policies for data handling and protection will be followed. The online questionnaire responses and any documents you upload will be stored on the Qualtrics-secure database (<http://www.qualtrics.com/security-statement/>) for a period of approximately 12 months, after which they will be stored in a password protected secure database at the University of Edinburgh along with audio recordings of interviews and any documents provided by you. Further information about data protection at the University of Edinburgh can be found at: <http://www.ed.ac.uk/schools-departments/records-management-section/data-protection>. The University information security policy can be found at: <http://www.ed.ac.uk/schools-departments/information-services/about/policies-and-regulations/security-policies/security-policy>. After the project has ended, and not before 2018, we may be asked to provide data to the UKERC Data Archive for other academic researchers to conduct secondary data analysis. In such an event we would exclude any commercially or otherwise sensitive information that you provide. Before we provide data to any research archive we will consult you and give you the opportunity to review the material and to opt-out.

**Link to online questionnaire**

The link below will take you to a web based questionnaire. The link is specific to your local authority and the < PROJECT NAME >

Local Authority Energy Survey – < COUNCIL NAME >  
< LINK >

If you have any questions about the completion of the questionnaire or about the follow-up interview please contact Mags Tingey by telephone or email (0131 650 8093 or [margaret.tingey@ed.ac.uk](mailto:margaret.tingey@ed.ac.uk)). You are also able to contact Jan Webb (0131 650 3987 or [jan.webb@ed.ac.uk](mailto:jan.webb@ed.ac.uk)) or Dave Hawkey (0131 650 2841 or [dave.hawkey@ed.ac.uk](mailto:dave.hawkey@ed.ac.uk)) who are members of the research team with any questions regarding this study.

## **Appendix VIII Data Use and Storage Statement**

### **Data use and storage statement provided to participants**

All data gathered will be protected and processed under the terms of the Data Protection Act 1998. In addition the University policies for data handling and protection will be followed. The online questionnaire responses and any documents you upload will be stored on the Qualtrics-secure database (<http://www.qualtrics.com/security-statement/>) for a period of approximately 12 months, after which they will be stored in a password protected secure database at the University of Edinburgh along with audio recordings of interviews and any documents provided by you.

Further information about data protection at the University of Edinburgh can be found at: <http://www.ed.ac.uk/schools-departments/records-management-section/data-protection>.

The University information security policy can be found at: <http://www.ed.ac.uk/schools-departments/information-services/about/policies-and-regulations/security-policies/security-policy>.

After the project has ended, and not before 2018, we may be asked to provide data to the UKERC Data Archive for other academic researchers to conduct secondary data analysis. In such an event we would exclude any commercially or otherwise sensitive information that you provide. Before we provide data to any research archive we will consult you and give you the opportunity to review the material and to opt-out.