Strategic Energy Planning within Local Authorities in the UK: a Study of the City of Leeds

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Abstract

This paper considers the development of a strategic energy body in a local authority in the United Kingdom and looks at the perceived need for, and possible roles of, such a body. Historically, energy provision and management has not usually been a strategic priority for UK local authorities. Yet energy considerations are implicit in key local authority responsibilities such as transport, waste management, planning, and the provision of housing services. In addition, recent UK central government policies support the move to localism and provide incentives for low-carbon energy generation. A study was undertaken to assess the potential (including both the perceived benefits and actual capacity to deliver) for Leeds City Council to develop a strategic body to execute delivery of city-level energy decision-making. We examine the perceived benefits to a range of main stakeholders, using data drawn from interviews with managers responsible for low-carbon and renewable energy projects across the city. Through participant observation we explore the capacity of a local authority to deliver a strategic energy body, and we briefly examine the possible forms of delivery. We conclude with recommendations for national policy that would enable the development of strategic energy bodies across local governments in the United Kingdom.

Keywords

- Strategic energy planning
- Local government
- Energy Service Companies (ESCos)

1. Introduction

It is increasingly being suggested that local municipal authorities, particularly those of cities, could play an important role in achieving energy policy goals (Allman et al., 2004, Bulkeley et al., 2010, Keirstead and Schulz, 2010, Kelly and Pollitt, 2011). Local authorities (LAs; *i.e.* local government areas) could make an important contribution in facilitating both household and commercial energy efficiency improvements and distributed energy generation, with the aim of providing affordable, secure and low-carbon energy service provision. However, this raises the question of the willingness (encompassing the perceived benefits outweighing the apparent costs) and capacity of local authorities to play this facilitating role. In the United Kingdom (UK), unlike in many other countries, local authorities have had little involvement in energy provision, and so are likely to have limited experience and capacity in this area. This paper examines the challenges involved in developing a strategic energy decision-making function at a local level, through a case study from the city of Leeds in the UK.

In the UK, municipal power companies are not a common feature, so there has been no pressing motivation for cities to concern themselves with the provision or use of energy. Indeed, much of the urban energy infrastructure – as well as the relevant management and decision-making processes – is currently held in the private sector, following the privatisation in the 1990s of previously state-owned electricity and gas industries. UK energy policy is highly centralised, with central government responsible for key strategic policy decisions regarding the shaping of energy markets, technologies, infrastructure and skills. Thus, historically, most UK cities have neither needed, nor developed, energy decision-making functions. Not only is strategic energy decision-making a largely unfamiliar activity for local authorities, but the particular types of energy technologies involved (low-carbon and renewable) are themselves typically new to local authorities. However, this situation has begun to change rapidly over recent years, prompted by both the move towards localism and the devolution of national climate change targets to a regional and local level. The Localism Bill (House of Commons, 2010) was introduced to UK parliament in December 2010 with the aim of shifting power from central government to individuals, communities and local government.

Devolution of national climate change targets to a regional and local level has so far remained voluntary. However, the role of local authorities in taking action to reduce carbon emissions has been recognised by the UK government through a Memorandum of Understanding (MoU) between the UK government's Department of Energy and Climate Change and the Local Government Group (Department of Energy and Climate Change, 2011). This builds on the Nottingham Declaration, a bottom-up declaration by a number of UK local authorities in 2000 pledging to tackle climate change at the local level. These efforts are encouraging at least some local authorities to take an active role in strategic

energy decision-making. Other incentives to do so, financial and otherwise, also exist and will be discussed presently.

In this paper, using a local government case study, we seek to address two empirical questions in order to assess whether there is willingness and/or a capacity within UK local government to adopt a more integrated, strategic approach to energy planning, in place of the current piecemeal and ad hoc approach. Firstly, do internal stakeholders within local authorities perceive that benefits from adopting strategic energy planning outweigh the costs of implementation? Secondly, do those local authorities that see the benefits of adopting a strategic approach to energy have the capacity to respond? To address these questions, a case study was undertaken with the collaboration of Leeds City Council.

The authors were given the opportunity to take part in Leeds City Council's data gathering process in relation to the scoping of a strategic energy function, providing maximum scope for observation of meetings and conducting structured interviews. This served to facilitate access to information and direct participant observation over an extended period. Leeds City Council took no part in the analysis of the data reported in this paper, in order to protect the objectivity of the study. While a complete answer to these questions would require an examination of a number of cities, we argue that the issues and challenges facing this Council, which runs a large metropolitan city in the north of England, are typical of those facing most large UK cities.

In Section 2, we provide further details of the national and local policy environment within which these developments are occurring. In Section 3, we describe the methodology used for data collection and analysis for the case study. Section 4 presents the main findings from the research. Section 5 comprises a discussion of the current situation and ways forward for the development of a strategic energy body for Leeds based on these findings, culminating in wider policy recommendations. Section 6 offers conclusions regarding the role of local authorities more generally in contributing to delivery of national energy and climate policy goals.

2. Policy Environment

2.1. International and National Policy Drivers

One of the first policy action plans aimed at encouraging environmentally sustainable development at the global, national and importantly, local level was Local Agenda 21, the outcome of the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992. Since then there have been numerous developments in environmental policy aimed at the different geographic scales. Several examples of local energy policy in non-UK countries are detailed in the literature (Betsill and Bulkeley, 2007, Bulkeley and Betsill, 2003, Nijkamp and Perrels, 1994). Here we will give a brief overview of recent significant developments in UK national energy policy that are likely to influence local energy decision-making.

The 2008 Climate Change Act, which sets a legally-binding target of reducing the UK's carbon emissions by 80% from 1990 levels by 2050, implies the need for a more strategic approach to energy policy at national and local levels. This raises the question of how the UK energy system should be transformed to a low-carbon system while also addressing the strategic imperatives of maintaining security of supply and ensuring affordability of energy services. A number of central government policies are strengthening the case for local authorities to view energy as a strategic priority. In August 2010, a ban on local authorities selling surplus power generated from renewable energy to the National Grid was lifted (Department of Energy and Climate Change, 2010), thus enabling them to benefit from incentives (including the Feed in Tariff (FIT) and Renewable Obligation Certificates (ROCs) for small-scale and large-scale renewable generation, respectively) and raise revenue that could be reinvested in other projects. The Renewable Heat Incentive (RHI), launched in mid-2011, provides a similar mechanism for generating revenue through renewable heat-provision schemes such as district heating. Even though much of the work that local authorities could undertake in the areas of energy efficiency and renewable or low-carbon energy generation is at this stage optional rather than mandated by government, these policies provide clear incentives for local government action.

2.2. Regional and Local Authority Energy Policies

Prior to 2010, the responsibility for local and regional economic development in England was shared between elected Local Authorities (LAs), for example representing a city such as Leeds, and Regional Development Agencies (RDAs), set up as non-elected public bodies with significant business input, covering the nine regions of England, including Yorkshire and the Humber. Since 2010, the RDAs have been replaced by thirty-nine Local Enterprise Partnerships (LEPs), which are made up of local businesses working in partnership with a combination of several local authorities, focussing on economic development and regeneration. The Leeds City Region Local Enterprise Partnership brings local businesses together with Leeds City Council and 10 neighbouring local authorities. None of these types

of body has any direct responsibility for energy policy, though issues relating to local and regional energy use and provision could overlap with their economic, environmental and social responsibilities.

As discussed by Kelly and Pollitt (2011), some UK local authorities have taken recent policy developments as an opportunity to take a more active role in local energy provision, for example, by promoting distributed generation or district heating systems in their areas. These were motivated by recognition of the co-benefits of a local energy strategy, including a reduction in fuel poverty, increased employment and mitigation of uncertain fuel prices, and driven by strong political leadership by successful local authorities, working with other local business and community stakeholders to raise finance and garner support (Kelly and Pollitt, 2009). However, there are only a few examples of such active leadership in energy issues by UK local authorities, including Woking, Kirklees and Newcastle Councils.

These Councils highlight that local leadership on energy is possible, but the rarity of these examples demonstrates the step change needed to extend energy leadership to all UK local authorities. A number of different interventions can be made to implement a city-wide energy strategy, by utilising arms-length organisations to provide technical advice and deliver energy projects. However, in these examples (and others) the policies are primarily directed at delivery of energy-related provisions and services rather than strategic coordination of council resources and facilitation of delivery across various functional areas (such as housing, transport, planning etc.) and/or sharing of resources between projects. It is this latter strategic coordination function that we are interested in exploring in this paper.

2.3. Leeds City Council — the Case Study

Leeds City Council (CC) is the second largest metropolitan council in England with a population of over 780,000 in mid-2009 (Office of National Statistics, 2011). The council currently has no explicit energy policy. Likewise, there is no single entity or agency with the responsibility for developing such a policy or charged with taking a strategic overview of energy requirements and future energy management in the city. This is not, at the moment, an unusual position for a local authority in the United Kingdom. Leeds CC has, however, made a clear statement of its commitment to contributing to the national (and international) effort to tackle climate change and has voluntarily undertaken to reduce its carbon emissions by 40% by 2020 (Leeds City Council, 2009). This raises the question of whether a city the size of Leeds can achieve such a challenging target by relying on private household and business decision-making, stimulated by national-level incentives for renewable energy provision and carbon emissions reductions, or whether the city also requires strategic action by the local authority?

In February 2010, the Sustainable Development Unit within Leeds City Council began a formal project to assess the need for the development of a strategic energy body to take on a number of responsibilities and lead on the coordination and management on energy

projects at a local level. This work was primarily triggered by a report published by Future Energy Yorkshire in 2009 (Sutherland, 2009). As noted in section 2.2, even leading UK local authorities involved in energy have focussed on delivery of energy-related services rather than strategic coordination, and most UK local authorities take little or no strategic role in energy provision. Thus, despite the suggestions in the literature that local authorities could play a significant role in meeting national and international energy and climate change mitigation objectives (Bulkeley and Kern, 2006, Hodson and Marvin, 2010, Kelly and Pollitt, 2011), this does not seem to reflect the challenges facing UK local authorities at the present time. Hence, this paper takes an empirical case study-based approach to the identification of these challenges. We hope that this will inform the wider localism and energy transition literatures.

3. Methods

The Sustainable Development Unit within Leeds City Council had decided in 2010 to conduct an assessment of the need for, and potential roles of, a strategic energy body. This provided an opportunity for the authors, as academic researchers, to conduct a case study in response to our research questions by engaging with the Council's process. The authors were able to provide additional human resources to the data gathering part of the assesment. In return, this enabled the researchers to gain a deeper understanding of the participants' views than would be obtained purely by reading a report of the assessment. The results reported in this paper thus draw on two activities: (1) interviews with employees of Leeds City Council and other external organisations that were involved in planned or current renewable energy, energy efficiency and low-carbon projects in the city, undertaken during April and May 2010, and (2) a participant observation study of internal Leeds City Council meetings regarding the scoping and development of a strategic energy body business case, undertaken from February to September 2010.

3.1. Phase 1 — Semi-Structured Interviews

In phase 1, the authors, in conjunction with a member of the Sustainable Development Unit within Leeds City Council (CC), initially conducted an audit of energy-related projects within the city and generated an associated list of relevant contacts. Eighteen projects (both current and in planning) were identified which were either in-house Leeds CC activities or external projects with a significant Leeds CC role or interest. Senior management-level individuals directly involved with these energy projects were then contacted and asked if they would like to participate in the scoping and research study. Participants were asked if they would be interviewed face-to-face; if this proved inconvenient, a telephone interview or a written response was offered as a means of reply. Through this nonprobability sampling method, 12 detailed responses were gathered from the total sample of 18 projects, consisting of seven hour-long semi-structured interviews (six face-to-face and one by telephone) and five detailed written responses to the same set of open questions. The interviews comprised both questions that were directly relevant to the research and those

that were of benefit to Leeds CC for assessing the business case for development of a strategic energy body. The questions were designed to be open. They can be seen in Electronic Annex 1 in the online version of this article. During the interviews, detailed notes were taken and reconstructed post-interview.

The authors are conscious of the potential for bias in this type of sampling method. For this study, however, we do not consider the risk of bias to be significant as the response rate from the total sample was high (67%) and covered a number of different project areas and organisations. Furthermore, although the response sample is rather small in purely numerical terms, the sample represents the views of the main stakeholders who would contribute to and/or use the services of a strategic energy body in the Leeds area; we, therefore, consider this sample to be sufficient for the task of scoping perceptions of the need for a strategic energy body.

The responses were collected over the period from the start of April until the end of May 2010. The UK general election took place during the data collection phase, on 6th May 2010, as did the Leeds CC local election (one third of seats on the council were up for election; the results meant that de facto control of the council changed from a Conservative and Liberal Democrat coalition to a minority Labour administration with the support of the Green party)[1].

[1]We believe that the responses should be interpreted as though they were all conducted before the change in control, as there was not a long enough period of time for the new council to have made any significant changes to projects already underway. However, it should be noted that the interviews were conducted over a period of uncertainty in both local and central government and it is acknowledged that this may have had a small impact on the responses of the participants.

A summary of the types of project and organisations in the sample is shown in Table 1.

Table 1 – Overview of participants.

Response*	**Organisation**	**Projects Undertaken**
1	Leeds CC	Estates[a]
2	Leeds CC	Estates[a]
3	Other public sector	Small[b]
4	Other public sector	Small[b]
5	Leeds CC	Large[c]
6	Leeds CC	Transport[d]
7	Leeds CC/Private sector partner	Large[c]
8	Leeds CC	Large[c]
9	Leeds CC	Housing[e]
10	Leeds CC	Estates[a]
11	Leeds CC	Housing[e]
12	Leeds CC	Transport[d]

* In order to preserve the anonymity of respondents, specific details are not included. All respondents were representing departments or organisations that could potentially be customers/users of a strategic energy body within Leeds and either held senior management-level positions within their organisations or were senior project managers with significant responsibility for procurement etc

Key to project descriptors:

[a] Programme of interventions for various council-owned properties.
[b] Small-scale renewable-energy or energy-efficiency projects.
[c] Large-scale renewable-energy or energy-efficiency projects.
[d] Large projects relating to transport.
[e] Programme of interventions related to housing.

All projects discussed by participants were still in the development stages, either at the options appraisal stage or further along the planning process. The estimated and actual investment costs of the projects ranged from hundreds of thousands of pounds at the lower level up to one billion pounds for the largest, although most were typically in the range of £5–15 million.

After the interviews of phase 1 were conducted, the detailed notes were catalogued and analysed. Answer categories were coded prior to analysis (allowing for changes to the codes to be made during the process) and then interviews were classified into relevant codes for the different questions and themes.

The table in Electronic Annex 1 in the online version of this article shows a brief summary of the questions explored (either in interview or written questionnaire); the responses have been grouped into broad answer categories coded from the information provided and the frequencies of each coded answer derived.

3.2. Phase 2 — Participant Observation

The second phase of the research provided an insight into the decision-making process within the local authority by using the method of overt participant observation (Jorgensen, 1989). This method allowed for detailed information about practices within the local authority to be drawn out and was adopted in order to gain insight into the practical challenges that would be involved in implementing a strategic energy body.

A member of the research team attended four formal project meetings over a period of eight months (from February to September 2010) relating to the scoping and development of the strategic energy body business case by Leeds City Council and also had privileged access to internal documents and emails. Informal contact was maintained with the council outside of these meetings. The researcher was identified as such and none of the information gathering was in any sense conducted in a covert manner. The researcher took the role of an informed observer, inputting where appropriate, and gaining insights that might have been hidden or withheld from more formal data collection methods, such as interviews. Members of various teams within the council were present at these meetings, including representatives from sustainable development, finance, legal and planning as was a representative from an external public sector consultancy organisation.

4. Results from the Case Study of the City of Leeds

4.1. Perceived Benefits to a Strategic Energy Body

In this section we discuss the results pertinent to the first research question, regarding the perceived benefits to a strategic approach to energy decision-making across Leeds City Council. In particular, we discuss the functions identified by the stakeholders as being potentially beneficial.

As noted above, almost all energy-sustainability promoting interventions conducted (or contemplated) by the city of Leeds currently take the form of individual, specific projects rather than integrated or comprehensive initiatives.

The most frequent response (50% of respondents) as to the main aim of the projects or programmes they were involved in was the reduction of carbon emissions. In terms of energy-related projects, a considerable proportion (75%) were linked to targets imposed by external organisations (central government National Indicators, for example, which have been withdrawn since the interview work), aimed at reducing greenhouse gas emissions, and were often linked to funding streams. Reduced energy costs and, perhaps more surprisingly, corporate/governmental social responsibility (often phrased as 'setting a good example' or 'leading the way') were also cited as factors justifying the projects. Some projects had originated from the need to address specific aims such as waste management or improved air quality, but the wider energy-related benefits were also being sought and/or used to enable or justify the project, e.g.:

'[The project] wasn't really about buying energy...it was about dealing with waste.' — Respondent C.

This finding supports the observation by Bulkeley and Betsill (2003) that "the need for local action on climate change has not been promoted in isolation. Initial concerns about energy use were based on other issues, such as the potential for financial savings or the need to improve local air quality." However, UK local government currently operates under a national policy regime where it is most often the case that emissions reduction needs to be promoted as the main driver for any project. This threatens the viability of those energy sustainability interventions for which the most immediate and local benefit is economic development (Carley et al., 2011) and/or improving health and wellbeing (Clinch and Healy, 2001). There appears, therefore, to be a case for a policy change with regard to project evaluation in order to incorporate the project's overall societal value at the city level, as well as its contribution to meeting national energy-sustainability targets. This is an interesting area, which falls outside of the scope of this paper but which the authors suggest would warrant further research.

Energy security was rarely mentioned without prompting; a similar finding was reported by Keirstead and Schulz (2010) who noted that "local authorities felt that energy security 'wasn't [their] business' but a national concern".

The main practical constraint faced was, as might be expected, the implementation costs (both capital and operational) of the project when compared with the budgets available. Several respondents observed that the need to satisfy planning and local environmental regulations also posed a challenge:

'EA [Environment Agency] permissions are a really, really big issue.... [We] thought we'd be pushing at an open door but it's triple locked.' — Respondent B;

'[Need a] champion at getting through the red-tape.' — Respondent D.

In some cases, there were limitations inherent in the existing infrastructure, such as old building stock that didn't allow for the retrofit of the best available current technologies.

Nearly all projects were expected to pass through some form of review and approval process, the success of which was dependent on the development of a viable business case for the project (including cost/benefit analysis). It is clear that a strong (and readily communicable) business case is needed to secure both internal and external funding and gain approval from management boards. Some respondents (in external organisations) said that the project wouldn't go ahead if it was not financially viable without public money (one interviewee commented: *'We don't proceed with a project unless it 'washes its face'.'* — Respondent B). One interesting comment was that it took an expert to understand the complicated incentive schemes offered by government and other public sector organisations; the respondent indicated that sometimes the (perceived) benefit was not worth the additional effort required to seek this funding.

Very few project teams had all the necessary support in-house to make decisions on technology options and project delivery. This suggests that an affordable and accessible source of technical/financial advice would be useful at the initial conceptual design stage(s) before the preliminary and detailed planning, for which (usually external) developers/consultants would be brought in. Many of the projects had already sourced technical advice externally (either free from public sector organisations, or from paid-for private consultants). In comparison, advice on future energy pricing is an area where respondents were less likely to know where to turn for assistance in developing future scenarios and assessing financial viability.

Respondents were asked about the types of strategic energy body service provision that they might be interested in utilising. The proposed services of a strategic energy body put forward for discussion were:

- the city-wide coordination of renewable energy and carbon reduction opportunities;
- the provision of technical help and advice to public and private sector organisations in developing renewables and carbon reduction schemes;
- the provision of help and advice regarding funding and financing options, including the organisation of revenue recycling between projects and the provision

of an interface (possibly through a separate energy services company, ESCo) to buy/sell energy from new projects;

- operation as a broker between producers of energy (heat/electricity) and possible consumers.

All of these possible services met with a favourable response from respondents, which is unsurprising given the resource-limited environments in which most teams appeared to be working. Other desirable services suggested were leadership on best practice, help with identifying opportunities, assistance with planning and permitting issues, advice on project initiation and feasibility work, and the use of ESCos to develop further sites/projects (see further discussion in section 4.3).

The predominant theme of the feedback from the interviews was, however, the need for strategic leadership in the area of energy planning:

'[Sustainability is] still seen as a pet subject rather than a core strategy.' — Respondent E;

'.....there are targets but no plan to get there.' — Respondent E. (In reference to the fact that the target of a 40 % carbon reduction for the city by 2020 had been set by councillors, but without a clear plan as to how this target will be met.)

Many respondents gave a sense that they were forging ahead with projects on an individual basis rather than as part of a strategic vision for the city, but that they would welcome (and benefit from) the latter.

This supports the findings of Allman et al. (2004), who noted that the "lack of clear long-term funding results in local authorities bidding for pilot projects. They take an opportunistic, ad hoc approach of 'chasing the money'; what is lacking is a strategic and coordinated vision for local authority areas." The same authors note that local authorities are able to make progress on single projects but are less successful in tackling complex and strategic activities, which was strongly supported by the evidence from our case study.

The insights drawn from the audit work support the premise that there would be at the very least a highly significant and more probably a key role for the strategic city-wide coordination of energy projects; a role that is currently not undertaken by other organisations within the city and unlikely to be provided in the future. On this basis, Leeds CC felt that there were sufficient grounds for considering further the development of a strategic energy body.

Table 2 describes the potential roles and functions of the proposed strategic energy body, which were developed by Leeds CC after the interviews and were set out in the outline business case. As it is clear that the realisation of these roles and functions will be limited by the resources available, the present authors have added an assessment of the priority of

each of these, based on the needs identified by participants in their interview responses. These roles and functions fall under four themes: strategic, technical, financial, and project management. The most important of these is strategic leadership in energy planning within the city, a role consistently cited by interviewees as currently lacking, but perceived as having clear benefits.

Table 2 — Potential functions of a strategic energy body as identified in the Leeds City Council outline business case (Leeds City Council Sustainable Development Unit, personal communication, 2011). The authors have indicated a priority rating for each of these functions, based on our findings from interviews and development meetings.

Area	Proposed role or function	Priority
Strategic	Provide civic leadership.	High
	Develop and implement strategic low-carbon and renewable energy projects and future energy management policies, including reducing energy demands.	Medium
	Coordinate and integrate low-carbon and renewable energy projects wherever possible and promote the use of shared technologies.	High
	Promote mechanisms to seek both efficiencies and synergies between otherwise uncoordinated low carbon and renewable energy policies.	High
	Carry out research to identify areas most suitable for low-carbon and renewable energy infrastructure within the city.	Medium
	Promote and assist the development of a low-carbon and renewable energy infrastructure throughout the city region.	High
	Coordinate responses to central government consultations on behalf of stakeholder within the city.	Low
Technical	Provide advice and guidance on technical issues related to low-carbon and renewable energy technology and installation (including retrofit options).	Medium
	Provide advice and guidance on the most suitable fuels and methods for the generation of	Medium

	low-carbon and renewable energy electricity and heat.	
	Support planners in identifying opportunities to use planning conditions to secure low-carbon and renewable energy infrastructure as part of new developments.	Low
	Data collection for energy, emissions and other relevant parameters.	Low
Financial	Provide a channel for government funding or private sector investment for low-carbon/renewable energy projects.	High
	Provide a means to attract, hold and recycle income and investments.	High
	Provide general financial advice and guidance as well as information on grants and other sources of funding.	Medium
	Provide a brokering service between energy producers, the National Grid and energy users.	Low
	Provide advice and guidance on revenue recycling between projects.	High
	Provide advice, guidance and clarification on issues such as carbon credits, Feed-in Tariffs, Renewables Obligation Certificates (ROCs) etc.	Medium
Project Management	Provide assistance with project initiation.	Medium
	Provide assistance with project development.	Low
	Establish partnerships and special purpose vehicles for project delivery (without becoming directly involved with project delivery).	High
	Identify, arrange and manage revenue recycling between projects**.**	High
	Promote best practice.	Medium

4.2 Capacity to Deliver a Strategic Energy Body

We now discuss in more detail some of the barriers and challenges facing local authorities that seek to adopt a more strategic approach to energy decision-making than at present, and how these might be overcome, building on the analysis by Kelly and Pollitt (2011).

The results from the interviews and participant observation identified four key barriers to the development of a strategic energy body:

1. Financial resources
2. Cultural norms
3. Skills
4. Political will.

We will now discuss each area in turn.

It was evident from observation of the development meetings that, in the current economic climate, the most significant challenge for the development of the strategic energy body, and any similar local authority initiative, is that of securing sufficient resources for start-up (with the changes to government policy outlined in Table 3, there is a possible path to such bodies becoming self sustaining, once initiated).

Even with the human and organisational resources in place to support strategic planning for local energy infrastructure, a key further challenge is that of securing the necessary financial resources for both initial investments in the energy infrastructure needed for projects and subsequent operation of these projects, as summarised in Table 3. Only later, as these projects mature and deliver revenue back to the strategic energy body, would the body become self sustaining.

Table 3 — Comparison of traditional and current opportunities and barriers for energy projects with local government involvement.

Situation	**Ease of raising finance for initial investment**	**Ease of financing operation and maintenance**
Prior to the change in government and subsequent funding cuts in 2010	Relatively easy to secure up-front investment to initiate projects, e.g. through central government grants.	Projects were not self-sustaining in the long term and had to continue to be funded by the local authority.
Current, as of 2011	Governmental start-up funding for projects is extremely scarce. It seems reasonable to assume that	It is much easier, than was previously the case, for local authorities to

	capital projects are unlikely to be able to depend on either major investment from the public purse or something akin to the Private Finance Initiative. Instead, viable projects are likely to be one or more of the following: • purely private sector; • novel public-private partnerships that insulate the local authority from financial risk.	undertake activities that generate income to sustain projects (from feed-in-tariffs etc.). Indeed, the New Local Government Network estimates that the FIT and RHI schemes "could represent an estimated £12 billion investment in renewable energy" for local authorities[a]. Thus, successful projects will often involve generation of both near- and long-term net revenue for the local authority that can be recycled into future energy investments.

[a] Hildyard (2011).

Inconsistent funding is also an issue, as noted by Carley et al. (2011), making "it difficult for industry actors, community stakeholders and other involved parties to plan [energy-based economic development] projects". Operating ESCos or SPVs could be beneficial to local authorities; these forms of delivery will be discussed further in the next section.

Other challenges arise as a result of the need to make a strategic energy body compatible with the cultural ethos of the local authority. For example, it was indicated in one development meeting that, within the council, there was a certain level of discomfort with the idea of generating income, and the idea of using an ESCo to recycle revenue was viewed as radical. Change in the way in which projects are handled and finance is raised could prove slow when faced with the institutional lock-in of traditional ways of operating. A lack of technical knowledge may also bring about hesitancy when looking at less mature technologies, as there will be a lack of confidence in the decision-making process (e.g. in assessing financial and reputational risks) and a feeling (perhaps unjustified) of additional risk.

In relation to the area of capacity building, Leeds CC is engaged in a Climate Change Skills programme, part of which aims to train elected Members (councillors), planning officers and related professionals in the skills needed for low-carbon development. This work arose in part from the finding that there is a lack of a consistent approach between various disciplines, such as planning policy, development control, building control and climate

change and energy. The lack of technical understanding in this area is key, with officers not supported in understanding recent technological developments and therefore at a disadvantage when negotiating with developers. A strategic energy body would be able to help bridge these gaps in understanding and also bring confidence to projects using unfamiliar or relatively novel technologies, thus building capacity within the organisation as a whole.

Finally, the vision for a strategic energy body would need to be clearly communicated to the decision-making boards and the members of those boards would need to have the political will to embrace a significant change in the way of working. This is a non-trivial issue but will vary from council to council, and depend on the individuals involved and the general attitude to change and risk.

4.3 Forms of Delivery

There are several forms of delivery that would serve to deliver the functions (or sub-set of functions) described in section 4.1, which we will now examine. They include joint ventures, arms-length organisations and energy service companies (ESCos) as well as combinations of these options. This is based on the authors' reflections on the insights gained from the case study and other research on the potential for the development of ESCos in the UK that will be reported in detail in further papers.

Figure 1 shows a schematic representation of one proposed structure of a strategic energy body and indicates the relationships between the body and other organisations, as developed in the work by Future Energy Yorkshire (Sutherland, 2009), which helped to stimulate the interest of Leeds City Council.

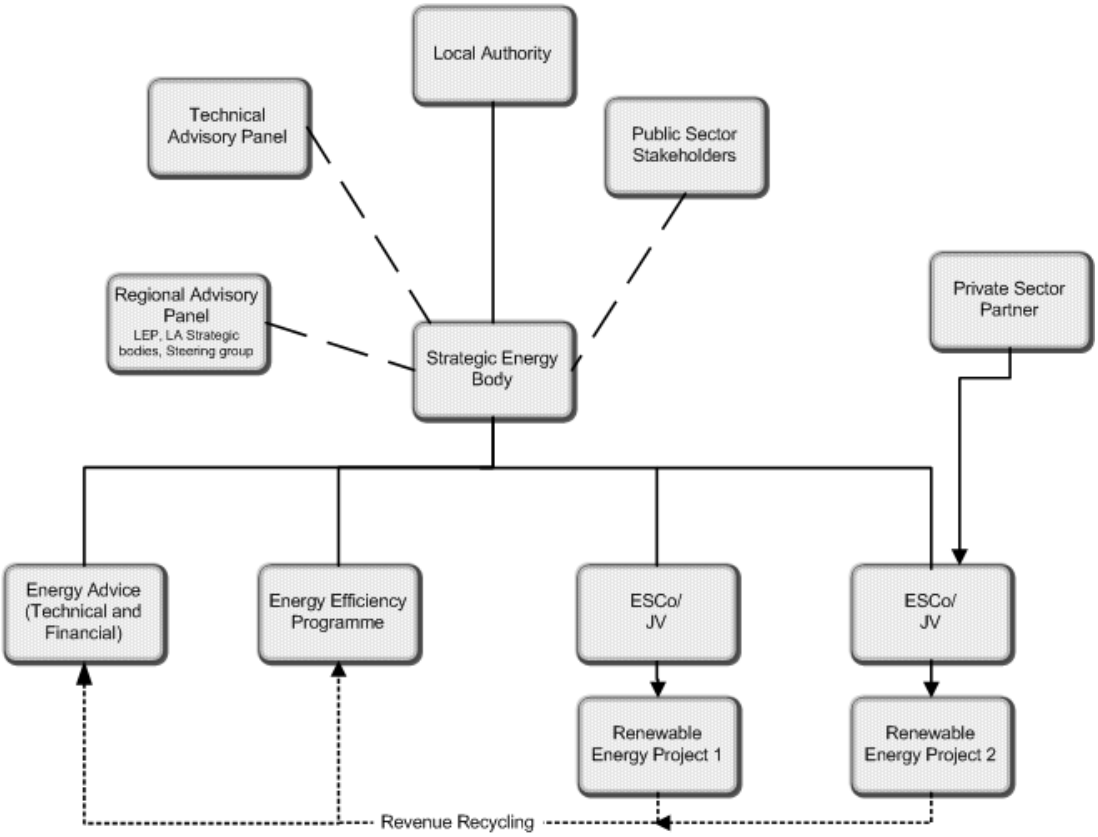

Figure 1 Proposed structure of a strategic energy body, showing partnerships and revenue recycling. Adapted from Sutherland (2009). Abbreviations refer to an Energy Services Company (ESCo), joint venture (JV), local authority (LA) and Local Enterprise Partnership (LEP).

The important potential roles of a strategic energy body (identified in section 4.1) relate to the coordination and facilitation of actors who are well positioned to deliver low-carbon energy projects in the local area. The remit would not extend to the actual delivery of these projects. Furthermore, due to the high levels of risk, investment and expertise associated with the delivery of these projects, it is unlikely that the LA will be in a position, both financially and politically, to deliver them (section 4.2). One option is the establishment of a LA-controlled 'arm's length' Energy Service Company (ESCo) (Smith, 2007), which would deliver energy projects on the LA's behalf. The benefit of this would be to provide the LA with an additional revenue stream and help it to meet its strategic objectives without being exposed to the associated risks (Kelly and Pollitt, 2009). In this case, the ESCo would take responsibility for the financing, design, build, operation, and maintenance of the project.

The establishment of an 'arms-length' ESCo, which is responsible for both the delivery and management of energy projects would enable the strategic energy body to focus its limited resources on its main objectives of project facilitation and coordination, as opposed to project delivery, management or underwriting. It would also provide the local authority with the opportunity to "obtain and involve appropriate expertise in the delivery of the schemes", which may lie outside of its core remit and understanding (Smith, 2007). The ESCo's 'arm's length' status would also serve to insulate the local authority from much of the financial and legal risk associated with energy projects because it is considered a separate legal entity to the local authority. Furthermore, because an ESCo is relatively politically and financially autonomous, its energy projects are somewhat protected from any significant changes the council might make to its strategy, which could have an adverse impact on its development and/or funding (King and Shaw, 2010). However, in order for the local authority to benefit from these advantages, it is likely to need to have a relatively large stake in the company, i.e. financial and technical resources invested in the ESCo. This could pose a problem if the local authority is unwilling or unable to invest these resources.

An LA-affiliated ESCo can assume a number of different forms. Firstly, the local authority may decide to own the ESCo outright, as with Aberdeen Heat & Power Ltd (Smith, 2007). Here, the LA assumes the majority of the financial risk associated with the ESCo's projects but will consequently receive the majority of any revenue generated by it.

Secondly, a local authority may decide to establish a joint-venture 'arm's length' ESCo (Kelly and Pollitt, 2011), where ownership is shared with another public, private or third sector organisation (Sorrell, 2005, King and Shaw, 2010), as with Thameswey Energy Ltd (TEL), which was set up as a public-private venture by Woking Borough Council. Although these joint ventures are often complex arrangements (Sorrell, 2005), they can help the LA to pool resources and expertise, and reduce the legal and financial risk assumed by the local authority. It can also help LAs to secure the necessary project finance and investment from third-party investors — a valuable advantage in view of the recent public sector cutbacks in the UK. Investors may be inclined to invest in the ESCo due to the performance guarantees incorporated in its energy service contracts, representing a relatively low-risk investment, usually over a period of between 5 and 25 years (Rezessy et al., 2005, Sorrell, 2005).

Finally, the LA may opt against an 'arm's length' ESCo and instead contract with a private sector organisation to deliver the energy service project, often referred to as Energy Service Providers, as Birmingham City Council did for the Cofely-owned Birmingham District Energy Company (BDEC) Ltd (COFELY, 2011). The local authority will be subject to less risk and will continue to benefit from many of the project outputs (e.g. reduction in fuel poverty and CO_2 emissions), however, it is likely to receive either no, or limited, direct revenue from any of the projects the private sector ESCo delivers.

Further research could usefully explore insights from the management literature on interorganisational relations (Oliver, 1990) and network forms of organization (Podolny and

Page, 1998) for the benefits of different types of organisational forms that could link local authorities with other stakeholders involved in energy provision. Network forms of organisation could bring several wider benefits that would be particularly helpful for a strategic energy body, including learning, economic benefits and alleviation of constraints (e.g. funding and risk) (Podolny and Page, 1998), and would go some way to addressing the capacity limitations identified in section 4.2.

5. Discussion

5.1 Current Situation

Since this research was undertaken, Leeds CC has taken forward the plans for developing a strategic energy body based on the evidence gathered, and a business case has been written by the Sustainable Development Unit to seek approval for funding for implementation. However, the business plan was not given board approval and has not, at the time of writing, progressed into implementation. This is largely a result of significant funding cuts, but also a result of the challenges identified in section 4.2. Some smaller-scale activity is nevertheless being carried out to identify energy projects and engage with the private sector, with plans to use funding from the ELENA technical assistance facility (European Local ENergy Assistance) (European Investment Bank, 2012).

5.2 Ways Forward

As noted over 15 years ago by Nijkamp and Perrels (1994), it is not the lack of supporting arguments that prevents the building of 'sustainable cities', and local energy strategy and planning easily demonstrates its validity. As we have seen in this case study, the need for support and the potential benefits to be gained are clear-cut. The key issue, however, is the capacity for converting these arguments into action under existing constraints.

In the short term, funding will remain an issue for the initiation of a strategic energy body at even the most limited scale. Although a strategic energy body would be to some extent scalable with growth of their remit, there is a minimum level of activity below which the body would have no significant impact. Based on our study of Leeds, this minimum level is equivalent to the operation of a small in-house team with coverage of technical expertise, knowledge of the current funding/financing landscape and skills in partnership development. This balances the issues of the cost and complexity of implementation with the potential benefits attained. This small unit would demonstrate the value and potential for self-sustainability of a strategic energy body. This unit could then evolve into an 'arms-length' body (shielding the local authority from financial risk) in order to realise the further benefits outlined in previous sections. This requires that the proposed initial strategic energy body activities be structured so that:

- return on initial investment by the LA commences in the near-term;

- there is a clear path to the strategic energy body becoming fully self-sustaining in the medium term, at the latest.

What, then, are the implications of the prevailing financial situation for the potential role(s) of a strategic energy body? Under these conditions, the roles of a strategic energy body might become primarily:

- lowering the barriers to initial investment:
    - encouraging inward investment by assisting the private sector with identifying and defining (quantifying) opportunities (e.g. provision of suitable renewables sites within the city's estates portfolio);
    - facilitation (e.g. providing a unified interface for private sector energy investment and/or assistance with the planning approvals process);
    - support (e.g. provision of local knowledge and contacts).
- recycling revenue from existing projects to initiate new ones, potentially via an ESCo.

Joint delivery with neighbouring local authorities, or in joint venture with one or more private organisations, may be a potential way forward. This model has been adopted by the London Energy Partnership (London Energy Partnership, 2011). This brings together numerous public and private sector stakeholders to work together towards aims that include assisting in the delivery of reducing carbon dioxide and fuel poverty, helping to create commercial opportunities for the city. The Leeds City Region Local Enterprise Partnership could provide a vehicle for the delivery of a strategic energy decision-making across a region. While more resources would be made available by bringing together many LAs in this way, it may be that certain benefits of working at the very local level – such as understanding of local priorities, projects and possible development sites – would be lost. However, opportunities for working with local authorities in rural areas may be scarce, as a strategic energy function will likely only appeal to LAs with sufficient density of urban areas for technologies such as district heating to make commercial sense.

Any strategic priority in local government requires, as a minimum, the political approval and preferably the active support of the incumbent councillors. This requires that the elected members extend their area of decision-making capacity to be able to deliver effective and accountable decisions, and the scrutiny of such decisions, in the area of energy. Thus, the acceptability, scope and operation of a strategic energy body will be influenced by the political make-up of the council, and, although energy is a cross-party issue, views on appropriate responses to these will differ. What is needed for political buy-in is a clear message, supported by convincing, well-communicated national and local evidence, that the benefits brought about through strategic energy planning fully justify the investment in developing the capacity for this work to be undertaken.

5.3 Wider Policy Implications and Recommendations

We have presented here a case study from the city of Leeds that reveals broader implications for local authorities across the country and for central government policies to support the development of strategic energy bodies within LAs.

It is possible that the role of a strategic energy body could fall within the remit of the new Local Enterprise Partnerships (Secretary of State for Business Innovation and Skills, 2010). It will be down to each individual LEP to decide whether energy planning is an area in which they wish to invest, but LEPs would represent a mechanism for local authorities to engage with businesses and other organisations. We would recommend that a strategic energy body be one of the functions of an LEP.

There could also be a role for a central body (perhaps the Energy Saving Trust) to provide local authorities with a 'how-to' guide to setting up a strategic energy body, incorporating advice on the legal and financial aspects. This could be similar to the guidance provided to local authorities by the Health and Safety Executive on health and safety issues (Health and Safety Executive, 2011).

One of the main barriers we have identified is the lack of technical understanding within local authorities in the area of energy. This underlines the need for additional planning tools within LAs for identifying the most suitable energy-related interventions. We suggest that tools for identifying partnership opportunities would also be helpful. Funding tools for finding public sector support for energy projects are often aimed at private sector businesses and a gap exists for equivalent schemes (local, national and international) that are open to local authorities and public sector partners.

Both the 'how to' guide and the supporting tools would make it easier for resource-limited local authorities with the ambition but not the capacity to develop a strategic energy body to successfully do so.

6. Conclusions

In this paper we have presented observations and recommendations regarding strategic coordination of energy activities within United Kingdom local authorities, by means of an observational case study of the development of a strategic energy body within Leeds City Council. The case study suggests that the concept of a strategic energy body is perceived positively by the stakeholders interviewed. However, it also identifies that there remain significant challenges to the implementation of such a body. We argue that this provides a useful empirical caution to the more optimistic view that in the UK "local government can and do have a significant impact on both energy production and energy consumption" (Kelly and Pollitt, 2011).

The case study suggests that there are financial, structural and (perhaps to a lesser extent) cultural barriers to the implementation of a strategic energy body. However, in the light of recent measures by the UK government to enable local authorities to benefit financially from local energy projects, the present work suggests that a strategic energy body could, with the political will and some modest initial funding, become self-financing in the medium term by generating revenue through a single ESCo or multiple 'arms-length' ESCos, in order to provide sufficient funds for developing other project streams.

Most of these findings appear to be applicable generically to local authorities, particularly those that are responsible for cities or other major urban conurbations. Many local authorities are setting local climate change targets, and a strategic energy body would provide a path to facilitating the interventions needed to achieve these targets.

The national policy regime does not currently incentivise local authorities to take a strategic approach to energy; rather, funding is provided for separate initiatives and for meeting separate targets. However, the strategic energy function at a local level conforms to the foundations of the current government's localism and sustainable energy policy areas. We argue that, if funds were instead partly channelled to providing for strategic energy planning provision at a local or regional level, efficiencies and, therefore, enhanced outcomes could be achieved. This could be achieved through local enterprise partnerships, with funding from national and EU funding schemes. It is not clear at this stage how LEPs will evolve, but incorporation of a strategic energy facility would provide the benefits outlined earlier and would be an appropriate mechanism for engaging with public sector partners.

Although national government can create a climate favourable to local strategic approaches to energy, only if a local authority has clear leadership and ambition in the energy arena will a strategic energy function be implemented and the associated benefits attained.

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Annex 1 — Summary of responses to questions posed. Since the interviews were semi-structured the questions may not have been worded exactly as phrased here, in order to explore issues as they were raised in the conversation. Although detailed verbal or narrative answers were given, responses have been grouped according to the best fit with a number of defined coded categories.

	Topic	**Coded Answer category (where appropriate)**	**Count**
Q1	*What low-carbon/carbon reduction/renewable energy projects are you undertaking at the moment or are planned for the near future?*	*See table 1*	
Q2	*What is the main reason for the project?*	**Main Reason Cited**	
		Reduced CO_2 emissions	6
		Corporate Social Responsibility	1
		Waste management	1
		Air quality	1
		Other	3
		All Reasons Cited	
		Reduced CO_2 emissions	9
		Developing renewable energy	5
		Reduced energy costs	9
		Security of supply	4
		Corporate Social Responsibility	7
		Waste management	4
		Air quality	3
		Other	5
*	*Linked to externally or internally implement targets?*	Linked to targets	10
		⇒ External	9
		⇒ Internal	4
Q3	*What are the main constraints you are working within?*	**Main Constraint Cited**	
		Costs/Budget	8
		Planning	1
		Timescales	1
		Coordination	1
		Resources	2
		All Constraints Cited	

		Costs/Budget	8
		Planning	4
		Timescales	1
		Coordination/stakeholder support	3
		Infrastructure limitations	4
		Resources	2
		Lack of strategy	2
		Procurement rules	2
		Difficult performance criteria	1
		Regulatory	1
Q4	*What is the deciding factor as to whether the project goes ahead (projects in the planning stage)?*	*Not coded*	
Q5	*Do you require additional funding for your project(s)?*	Yes	6
		No	4
		Don't know/maybe/always look	2
Q6	*Do you feel you require or would benefit from additional technical support for your project(s)?*	Yes	7
		No	5
		⇒ Already available in-house	1
		⇒ Currently pay for external support	3
Q7	*Do you require advice or guidance regarding your project(s) in relation to future energy pricing?*	Yes	7
		No	4
		Don't know/maybe	1
		⇒ Already source elsewhere	3
Q8	*What service(s) would you want from a strategic energy body?*	City-wide coordination/strategic role	8
		Technical help and advice	8
		Advice for funding and financing	8
		Brokering service	5
Q9	*What service(s) would you want a strategic energy body to provide that is/are not provided now?*	*Not coded*	
Q10	*Would you be willing to pay for help and advice with the above issues?*	Yes	5

		No	2
		Don't know	5