

# Implementation and Delivery

## 5 Implementation and Delivery

### 5.1 Introduction

This chapter focuses on the key considerations and strategic actions that will need to be taken to take forward the potential projects presented in this report. Foremost amongst these is the need to set up an appropriate delivery vehicle, an Energy Services Company (ESCO).

The delivery of low and zero carbon energy infrastructure will depend upon coordination between planners, other local authority departments (including the corporate level) and local strategic partners. The two central documents for coordinating delivery of low carbon and renewable energy projects at the local level are the Community Strategy 2009-2026 and the Local Development Framework (LDF).

### 5.2 Delivery roadmap

The following table sets out a simple roadmap of the stages that are required to proceed to the implementation of the projects presented in the previous section. The internal actions for the Council are highlighted; the other actions are likely to require the involvement of a third-part specialist. This study represents Step C in the process.

Step	Requirement
A	Identify potential schemes
B	<b>Capacity building</b>
C	High-level technical and financial assessment of opportunities
D	<b>Prepare ground – incorporate political support within strategies / policies / budgets</b>
E	Detailed feasibility for specific project(s) to produce a tender specification

F	<b>Identify procurement route and funding and prepare business model</b>
G	Prepare a full tender specification and send to market
H	<b>Select partner(s), Agree terms</b>

Table 4: Simplified roadmap identifying the key stages leading to the implementation of a district heating scheme

### 5.3 The role of planning

This study supports and provides the evidence base for the inclusion of a policy to support in the draft Core Strategy for Bath & North East Somerset Council. The following draft policy is included, which refers to the district heating opportunity areas identified in Map 5 of this study:

*The use of combined heat and power (CHP), and/or combined cooling, heat and power (CCHP) and district heating will be encouraged. Development will be expected to incorporate, where feasible, low carbon energy generation and distribution by these means. Within the identified “district heat priority areas”, as shown on [the District Heating Opportunity Map] and reflected on the Proposals Map, development will be expected to incorporate infrastructure for district heating, and will be expected to connect to existing systems where this is available.*

*Masterplanning and major development in the district should demonstrate a thermal masterplanning approach considering efficiency/opportunity issues such as mix of uses, anchor loads, density and heat load profiles to maximise opportunities for the use of district heating.*

*The Council will expect all major developments to demonstrate that the proposed heating and cooling systems (CHP/CCHP) have been selected considering the heat hierarchy, in line with the following order of preference:*

1. Connection with existing CHP/CCHP distribution networks
2. Site wide CHP/CCHP fed by renewables
3. Gas-fired CHP/CCHP or hydrogen fuel cells, both accompanied by renewables

Capabilities on project:  
Building Engineering

- 4. Communal CHP/CCHP fuelled by renewable energy sources
- 5. Gas fired CHP/CCHP

As this study has shown, district heating has the potential to deliver significant CO<sub>2</sub> reductions in the District, not only through new developments but also in the existing building stock.

New developments often help to facilitate the delivery of new district heating schemes because they can be designed to accommodate the necessary infrastructure from the outset.

It is hoped that this policy will enable Councils to ensure that new development helps to support the delivery of district heating networks where feasible. As discussed in this report the development of low carbon energy infrastructure is likely to help developers by providing a method of meeting building regulations and complying with other planning policies. Connecting to a network can be very simple and cost effective compared to delivering systems on-site. This has been shown to be the case in existing schemes such as the Birmingham District Energy Scheme.

**5.4 Delivery Vehicles**

Options for setting up a local authority operated ESCo could be explored. Although the skills required for this are likely to need to be developed this does not need to be an insurmountable barrier and there are a growing number of local authorities engaging in similar activities both in energy and other areas. They key to success is likely to be leadership: from senior local authority management or, at least initially, from committed individuals in planning or other departments.

ESCo models range from fully public, through partnerships between public, private and community sectors to fully private. Broadly speaking, the greater the involvement of third parties the lower the risk to the authority but, importantly also, the less control the authority will have. Whichever route is chosen, the delivery vehicle should be put in place as early on in the development process as possible, so that its technical and financial requirements can be fed through into negotiations with potential customers.

Potential advantages and disadvantages associated with publicly led and privately led ESCos are shown in the following table:

	Private Sector Led ESCo	Public Sector Led ESCo
<b>Advantages</b>	<ul style="list-style-type: none"> <li>• Private sector capital</li> <li>• Transfer of risk</li> <li>• Commercial and technical expertise</li> </ul>	<ul style="list-style-type: none"> <li>• Lower interest rates on available capital secured through Prudential Borrowing</li> <li>• Transfer of risk on a District heating network through construction contracts</li> <li>• More control over strategic direction</li> <li>• No profit needed</li> <li>• Incremental expansion more likely</li> <li>• Low set-up costs (internal accounting only)</li> </ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>• Loss of control</li> </ul>	<ul style="list-style-type: none"> <li>• Greater risk</li> </ul>

Capabilities on project:  
Building Engineering

	<ul style="list-style-type: none"> <li>• Most profit retained by private sector</li> <li>• Incremental expansion more difficult</li> <li>• High set-up costs</li> </ul>	<ul style="list-style-type: none"> <li>• Less access to private capital and expertise, though expertise can be obtained through outsourcing and specific recruitment</li> </ul>
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Table 5: Advantages and disadvantages of Energy Service Company (ESCO) Models

- Cofely Energy (includes Utilicom)
- Scottish and Southern Energy (SSE)
- Inexus/ Metropolitan
- E.On Sustainable Energy Solutions
- United Utilities
- LondonESCO
- Ener-g Combined Power
- RWE Energy
- ABB
- Morgan EST
- Thameswey Energy
- Thames Energy (Less Energy)
- Elyo
- Ecocentrogen
- Cogenco
- EnviroEnergy
- Centrax

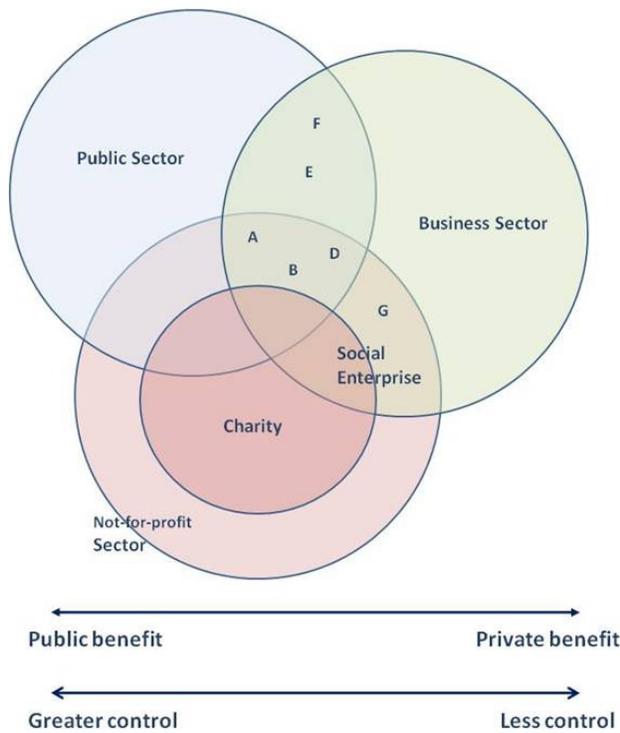


Figure 14: Spectrum of ESCo/delivery vehicle (Source: Making ESCos Work)

**5.5 ESCo models**

There are a number of companies within the UK that offer ESCo services, these include:

- Dalkia PLC

The following images describe different ESCo models that are being used in a number of existing DH schemes across the country.

GENCO refers to the part of the organisation that owns and is responsible for the operation and maintenance of the generating plant and energy centre.

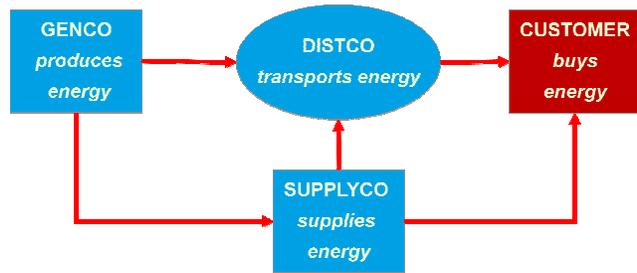
DISTCO refers to the part of the organisation that owns and is responsible for the distribution network.

SUPPLYCO refers to the part of the organisation that is the energy supplier i.e. the interface with the customer and responsible for billing, metering etc.

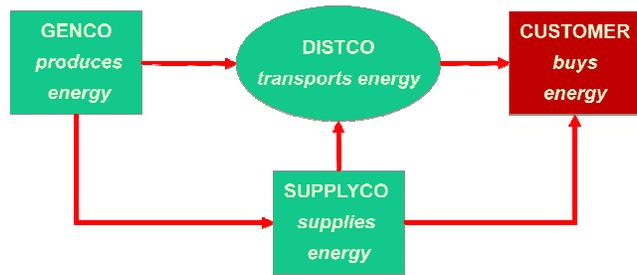
Blue represents private ownership and green represents public (Local Authority) ownership.

1. Private sector ownership e.g. Southampton, Citigen (London), Sheffield

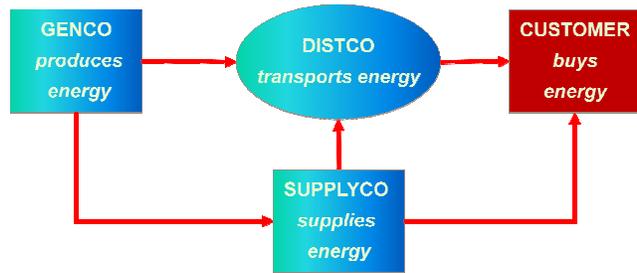
Capabilities on project:  
Building Engineering



2. LA Ownership e.g. Pimlico



3. Joint Ownership e.g. Birmingham



4. LA owns network and supply business, private sector owns heat source, e.g. London Thames Gateway, Nottingham

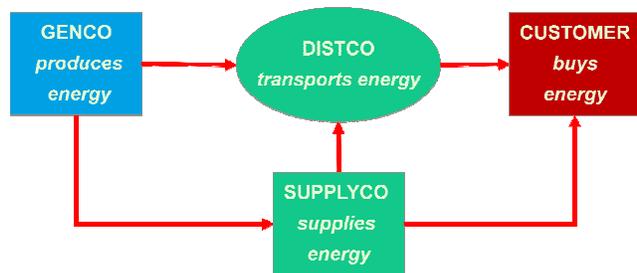


Figure 15: Four different ESCo Models

Each of these models entails a different level of risk and commercial interest. In addition to this, a party will need to be responsible for metering and billing. In addition to the list of ESCOs above, there are a number of private companies who specialise in this part of the operation.

**5.6 Key strategic actions**

5.6.1 Planning

- Ensure all new development in district heating priority areas is compatible with connection to a network.
- Support the development of biomass supply chains.
- Safeguard heat main routes in masterplans
- Explore the potential to use Local Development Orders to remove need for planning permission for DHNs
- Ensure networks and energy centres are designed with built in capacity for expansion

5.6.2 Strategic

- Identify key officer and member champions to take the opportunities forward
- Create cross divisional working group to facilitate discussions as the opportunities progress. This should incorporate members from planning, sustainability, property services and finance.
- Appoint dedicated person (preferably with knowledge of DHNs) to oversee delivery of strategy.
- Co-ordinate highway works and services/utility upgrades with laying of heat networks

Capabilities on project:  
Building Engineering

- Council boiler upgrades, Review Council redevelopments/refurbishments/plant replacements in line with DH opportunities
- Review Council energy contracts and assess the ability to enter into long-term commitment to purchase heat from an ESCo
- Review delivery vehicles and develop an ESCo model to suit objectives of scheme
- Identify sources of finance and funding

- CERT/CESP

Further details on each of these, as well as more details on other financial incentives, are located in Appendix D.

## 5.7 Sources of funding

It is likely that the funding will come from a combination of the following:

- An ESCO partner
- B&NES
- Developer contributions
- Allowable solutions/Community Energy Fund

The ability of the public sector to raise finances is likely to be severely hampered for the foreseeable future by the current economic crisis. Alternative sources of funding may need to be considered, including: bond financing; local asset-backed vehicles; and accelerated development zones or tax increment financing. In the December 2009 Pre Budget Report the Government committed to examining tax increment financing and the scope for local authorities to borrow against future CIL revenues and the renewable heat incentive and feed-in-tariff revenue streams. These possibilities should also be explored.

The following sources of funding may be also able to support both the implementation and deliver of projects:

- JESSICA
- ELENA