
REPORT FOR: CABINET

Date of Meeting:	15 September 2016
Subject:	Options to establish or Procure an Energy Services Company (ESCo) to support the Council's Regeneration and Commercialisation Objectives
Key Decision:	No
Responsible Officer:	Paul Nichols, Divisional Director of Regeneration and Planning
Portfolio Holder:	Councillor Keith Ferry, Deputy Leader and Portfolio Holder for Business, Planning and Regeneration
Exempt:	No
Decision subject to Call-in:	Yes
Wards affected:	None at present – recommendations relate to further feasibility work
Enclosures:	None

Section 1 – Summary and Recommendations

This report sets out options for the Council to either establish or procure an energy services company (ESCo) to support the Council's objectives with respect to regeneration, commercialisation, carbon reduction and fuel poverty.

An ESCo is a company that funds and builds infrastructure to supply heat

direct to new developments and generate revenue from energy sales. A communal heat network is the infrastructure that such a company could build which would distribute the energy in the form of hot water to a new development.

As part of the Council's regeneration programme, it is anticipated that communal heat networks will need to be established on the larger regeneration sites (i.e. Grange Farm, Poets Corner, Byron Quarter) in order to meet the carbon reduction and energy policies within the London Plan.

Additionally, utilising support from the Government's Heat Network Delivery Unit (HNDU) and the GLA, the Regeneration and Planning Division has been undertaking work to consider the financial and technical feasibility of establishing a broader 'district heat network' to serve a larger number of sites (existing and proposed, public and private i.e. Kodak). The outcomes of this work will be reported to Cabinet at a future date (anticipated to be early-2017).

Given that heat networks will as a minimum be established on the larger Council regeneration sites and that initial work suggests that one or more broader networks maybe technically and financially feasible, work to consider how these networks could potentially be procured (through an ESCo) was commissioned; this Cabinet report summarises the outcomes of that work and seeks the Cabinet's agreement to investigate these Delivery Models further in the context of the initial work done to date and further feasibility work being undertaken with respect to the potential to establish a broader network/s. The ultimate decision as to the most appropriate ESCo model will be influenced by a wide range of factors, including the level of control the Council will have over building and operating the networks (including setting heat tariffs), the level of risk the Council is prepared to accept, the level of capital the Council is prepared to invest, and economies of scale.

Recommendations:

Cabinet is requested to:

- (A) Note work undertaken to date in relation to the feasibility of establishing a district heating network/s (serving multiple sites) within the borough and proposed detailed feasibility study into those networks / clusters identified as being potentially technically and financially feasible.
- (B) Note work undertaken to date with respect to options for procuring or establishing an Energy Services Company (ESCO) to deliver heat networks on key Council regeneration sites and potentially broader network/s serving multiple sites.
- (C) Note the inter-relationship between the business case for any potential Council-led ESCo and the procurement of an ESCo for the Grange Farm Estate regeneration programme which is due to commence later this year and is considered in detail in a separate report on this Cabinet meeting agenda.
- (D) Agree that further work should be progressed with respect to potential ESCo models (including discussions with adjoining boroughs and those who have already established their own ESCo) and the more fully developed recommended option reported back to Cabinet for consideration.

Reason: (For recommendations)

To enable the Council to progress identifying the most viable and feasible ways of procuring or establishing an ESCo, and to help further the Council's regeneration and commercialisation agenda.

Section 2 – Report

1. Introduction / Work done to date

- 1.1 Decentralised energy (DE) refers to the generation and distribution of energy closer to the locations where energy is consumed. Doing so means that energy can be produced and transmitted more efficiently, particularly where waste heat produced by generating electricity can be used to heat nearby buildings.
- 1.2 District heating (DH) networks provide the means by which heat from decentralised generation sources is supplied to connected buildings. Buildings are typically connected to the network via plate heat exchangers or heat interface units that replace individual boilers for space heating and domestic hot water. Heat for DH networks is most commonly supplied from a combined heat and power plant (CHP) such as a gas engine that produces both electricity and heat; there are around 2,000 CHP schemes across the UK.
- 1.3 District heating networks are best suited to areas where heat demand is greatest to maximise revenues and minimise capital investment. New development sites in particular provide an opportunity to design in the connection from the start, which can reduce the cost of connection (compared with retrofit of existing buildings) and provide economies of scale for network operation, while meeting carbon reduction targets in a cost-effective way.
- 1.4 National Government and the Mayor of London are promoting decentralised energy as a means to reduce carbon emissions from new and existing development. For example, the Government has established the Heat Network Delivery Unit (HNDU) to support local authorities to establish heat networks. This support includes revenue funding to undertake feasibility and commercialisation work, as well as capital, with a £320 million fund being recently announced.
- 1.5 At a regional level, the London Plan requires new development to connect to existing heat networks (if available) or for larger sites (over 500 units), to establish an on-site heat network to serve the development and if possible, a broader area.
- 1.6 Given the scale of a number of the Council's regeneration sites, it is most likely that at least one (and potentially more) network will need to be established as part of the development of these sites.

Broader heating network opportunities

- 1.7 Through the London Heat Map / Decentralised Energy Master Planning (DEMaP) programme the Harrow and Wealdstone area was identified as a strong opportunity for the development of DE. Using funding from the Heat Network Delivery Unit, the GLA and the Council's own resources, an Energy Masterplan (EMP) was completed in December 2015 to provide an initial technical and economic assessment of this broader opportunity, with the key outcomes summarised below:

Network masterplan

- 1.8 A heat network serving the entire Harrow & Wealdstone and Grange Farm areas was identified. This broader network was found to have overall marginal economic performance as a potential investment; it however represents a long term vision for how a network could grow to serve the whole area.

Cluster Analysis

- 1.9 A cluster analysis was subsequently undertaken to identify separate more viable network opportunities. Five main clusters were identified, which were grouped into three wider clusters for the purposes of the analysis:
- a) *Harrow North Cluster*, made up of the Poets Corner site (existing Civic Centre site) and Kodak cluster, and the Wealdstone cluster (including the Leisure Centre site).
 - b) *Harrow South Cluster*, made up of the Town Centre cluster, and the Hospital and University cluster (located on the adjoining borough of Brent).
 - c) *Grange Farm Cluster*, centred on the Council's estate regeneration project.
- 1.10 The cluster analysis concluded that both the Harrow North and Harrow South Clusters are potentially financially feasible and with further HNDU funding, the Council has commissioned a detailed feasibility study into these clusters.
- 1.11 The Grange Farm Cluster was not deemed fundamental to the development of the area wide network, however presented the possibility to establish a satellite cluster that could at some point be connected into a larger network. The Grange Farm procurement process (including ESCo) is subject to a separate report on this Cabinet agenda and is also considered further below (2.19-2.21).

Commercialisation agenda

- 1.12 The Council's Commercialisation Strategy identifies energy (and potentially other utilities) as one area that the Council could pursue to generate an income stream for the Council. This could occur either on individual Council-led regeneration sites (such as Grange Farm, Poets Corner and the Byron Quarter sites above) and / or on an area-wide basis, covering one or more of the clusters identified in the energy master planning process.

1.13 The Grange Farm site is further advanced in the development process than the other two Council owned-sites, with procurement of a development partner due to commence with an Invitation to Tender (ITT) in September 2016. This procurement process will need to address as a minimum, the provision of a site-wide communal heating network powered by a CHP engine, as this is the preferred means of achieving the London Plan carbon emissions target (in addition to energy efficiency and renewable energy measures).

2. Energy Services Company (ESCo) Options appraisal

- 2.1 As noted above, one or more of the larger Council regeneration sites will include as a minimum an on-site communal heating network in order to comply with London Plan decentralised energy and carbon emissions policy. The first such site to come forward is the Grange Farm site. At this point in time, the Council's Housing Service (acting as developer) is intending to procure an ESCo to provide the on-site communal heating network in parallel to the procurement of a preferred development partner for the overall estate regeneration scheme (see separate report on this Cabinet meeting agenda).
- 2.2 There is less certainty about the technical and financial feasibility of establishing a broader heat network connecting public and private sites in the Harrow and Wealdstone area, with detailed feasibility work due to start in August 2016. Initial findings for the 'Northern Cluster' (that includes the major Council regeneration sites) are due December 2016 and detailed conclusions due March 2017. The overall study, including the Southern Cluster, will be completed by October 2017.
- 2.3 In the context of the above and the Council's commercialisation agenda, the Council commissioned assistance for the development of an options appraisal and identification of potentially suitable ESCo governance models to drive forward the delivery of heat networks within the borough, initially on an individual site basis, and potentially a wider network/s serving multiple sites.
- 2.4 The objectives of the study were:
- a) To consider and provide recommendations on the most appropriate organisational structures / forms of ESCo to take forward heat networks on both (a) a site-wide basis on the larger Council owned sites, and (b) at a broader area level.
 - b) Provide advice, including key tasks, timeframes and resources required to advance the preferred option/s from (1) above.
 - c) Working with the Grange Farm engineering / energy consultants to provide technical and other input into the Grange Farm ITT based on the outcomes of (1) and (2) above.
- 2.5 The study involved a number of meetings with relevant sections of the Council, including Finance, Procurement / Commercialisation, Housing, Energy, and Regeneration and Planning. The purpose of these meetings was to explain the background to heat networks and the opportunities within Harrow and to help identify the Council's priorities (e.g. revenue generation,

carbon savings, reduced energy costs, minimising capital input etc) if a District Heat Network were to be set up and the most appropriate ESCo models to achieve these priorities.

- 2.6 There are a wide range of ownership and management models for a heat network project. They range from a purely public sector venture to a purely private sector project. In between, a range of hybrid options involving both private and public sector financing, design, operation, fuel supply, day to day management and decision-making are possible. The key differentiating factors are:
- (i) The degree of control required via governance to direct the project towards its objectives;
 - (ii) The degree of risk the project sponsor is willing to carry in order to exercise that control; and
 - (ii) The return on investment the project is able to deliver relative to the sources of capital available.

The paragraphs below outline in more detail these approaches and the conclusions drawn from the ESCo governance model report (the report).

Private Commercial Approach

- 2.7 There are two approaches to heat network projects favoured by private commercial energy companies. These are full ownership and a concessions approach. Such companies will be seeking returns on capital between 12 – 15% on both approaches. None of the potential broader heat network clusters in Harrow achieve this level. In this context, these options have been explored in detail, but discounted within the report.

Public Sector approach

- 2.8 There are two potential public sector models: fully integrated within the Council as an internal department or; as a wholly owned special purpose vehicle (SPV).
- 2.9 If the Council opted for an internal department model the Council can accept a low return on capital due to its ability to access low cost public finance such as the Public Works Loan Board (3.5%). Consequently projects can be viable with an IRR as low as 6% - although the threshold varies between different public bodies (Harrow Council typically seeks at least 7%). This option can also secure affordable tariffs for consumers and gives the Council a high degree of control. However, the Council must provide financing, and carry commercial and reputational risk, as well as the need to develop skills to manage the ESCo.
- 2.10 Alternatively, the report explores the option of a Council owned SPV. This is typically established as a company limited by guarantee based on shares owned by the sponsoring organisation. It can also secure low cost public finance, particularly if its heat customers are other public entities. In order to capture this advantage the sponsoring public body must put in place an explicit guarantee to underwrite the SPV. This option still gives the Council a high degree of control, can secure affordable tariffs for consumers, but can outsource some technical risk to an external operator. Again, the Council must provide financing and carry commercial and reputational risk.

- 2.11 The report also considers a third potential option, which would be a joint venture. This is typically established as a company limited by guarantee based on shares with ownership of those shares allocated to one or more partners dependent on equity invested by each partner. The advantages and disadvantages of this approach will depend on the nature of the partners. For example, a public sector partner may contribute equity in the form of land and may provide access to lower cost debt capital. A private sector partner, typically an energy company, may provide skills and expertise, shorter private sector procurement and access to external capital. Although such capital will be at a higher cost it can be mixed with public sector capital to achieve a blended rate.
- 2.12 The report concludes that whilst a number of governance options are available, a wholly-owned external special purpose vehicle (SPV) would be best suited to the Council, given the strong commercialisation agenda. Such a model however requires further testing and development of a viable business model before a firm decision can be made.
- 2.13 The SPV can be established as a limited company based on shares. This leaves open the option to transfer to a joint venture, potentially with a neighbouring borough, through the sale of a proportion of the shares reflecting the equity or level of business they could bring to the company.
- 2.14 It is anticipated such a company would contract out design and construction for the installation of the network and contract out operation and maintenance until it is able to bring certain activities in-house.
- 2.15 With regards to funding, potential sources of capital include:
- (i) PWLB to the Council who will then lend it on to the SPV (such a mechanism represents a medium to long-term investment).
 - (ii) grants/soft loans from the Heat Network Investment Fund (administered by the Government's Heat Network Delivery Unit with up to £320 million to allocate).
 - (iii) Connection charges for building developers who will be obliged to contribute to the development of the network under the requirements of the Area Action Plan; these typically reflect avoided costs of not having to install a site-only energy solution/s. Such avoided costs would potentially apply to the Council's regeneration sites.
 - (iv) Income from carbon offsetting, which is anticipated to commence in October 2016 in line with the London Plan's requirements for zero carbon development from that date.
 - (v) Community Infrastructure Levy Funding could also potentially be used.
- 2.16 Revenues will be derived from:
- (i) Heat sales from the buildings connected
 - (ii) Electricity sales to the market (assuming a Combined Heat and Power engine is utilised as this provides both heat and electricity and at present is the typical supply solution).
- 2.17 This proposed Council-led SPV arrangement is currently only a recommendation from the report and will need further refinement through the development of a detailed financial plan. This is recommended as a

next step in the development of the business case, based on a further detailed feasibility study, for which the Council has already secured DECC funding. Based on the initial feasibility and governance studies, it is expected that two networks run by a Council SPV could be established within the Harrow and Wealdstone Opportunity Area to provide heat and hot water to many of the forthcoming redevelopments and Council regeneration schemes, and would in the medium term start to generate a revenue stream for the Council.

- 2.18 It should be noted that, as stated in the background section, all large major developments are required to obtain heat via a site or district heat network, due to GLA London Plan policies on climate change. The identified option in this report seeks to enable the Council to deliver these networks and achieve revenue for the Council.

Grange Farm

- 2.19 The development at Grange Farm will commence before a Council-led ESCo could be established (if the proposed further work confirms this is the most appropriate option). Therefore to maximise the potential benefits to the Council in supporting the business case for a potential Council-led ESCO (given Grange Farm must at least have a site wide heat network to meet the requirements of the London Plan), the study recommends that this proceeds as a separate design and construction (DB) contract for the installation of the network and in the context of establishing a Council-led ESCO, ideally a limited (e.g. 5 or 10 year) operation and maintenance (O&M) contract run by a private sector ESCo. After the expiry of the O&M contract term, Grange Farm could be integrated into any Council SPV, if one was established...
- 2.20 The 5 or 10 year timeframe recommended for an Operation and Maintenance contract is however currently much shorter than the minimum concession of 20 years identified by the soft market testing undertaken by Housing in order for the private ESCo to receive an appropriate return on any capital they investment. The minimum 20-year figure may change depending on the actual tenders received in the procurement of the ESCo for Grange Farm. The proposed procurement route and outcomes of soft market testing is addressed in a separate report on this Cabinet meeting agenda.
- 2.21 Options to reduce the private ESCo concession period include the Council injecting capital into the heat network (to reduce the capital required from the private sector and the time required to provide sufficient return) or accepting higher residents' energy tariffs (so that the ESCo investment is paid-back faster). However, current indications are that it is unlikely the Council will be able to input significant capital and the scope for higher energy tariffs needs to be considered in the context of affordable heat / fuel poverty objectives and reputational risk to the Council. Any further consideration and business case development of a Council-led ESCo will therefore need to take into account these constraints with respect to the Grange Farm network and its future incorporation into any Council-led ESCo.

3. Options considered

- 3.1 The potential ESCo model / options are considered in 2.6-2.12 above. The 'do nothing' option (i.e. not to progress with any further work into ESCo formation or further detailed studies into viability) would essentially limit the Council to procuring any heat networks (i.e. the site-wide networks required under the London Plan) from the private sector.
- 3.2 The advantages of a private sector approach include the ability to access external financing; technical and commercial risk is transferred to external operator, the third party provides necessary skills and the private sector procurement is generally shorter.
- 3.3 Disadvantages include loss of control (operator typically does not want to extend beyond original specification), high heat charges for users (more expensive overall because of need provide high returns), reputational risk (users see project sponsor such as the Council as guarantor of last resort in conflict situations), reputational risk (sponsor promotes building connections that operator fails to take up), and loss of flexibility (operator not willing to accept heat from sources not under its control or connect customers where cost of connection exceeds higher hurdle rate). A further disadvantage in the context of the Council's aspirations for establishing wider heat networks (i.e. serving multiple sites not just the Council regeneration sites) is that work done to date indicates that these networks would not provide sufficient returns to be of interest to the private sector. For these reasons, it is considered that a Council-led ESCo is an option worth investigating further.
- 3.4 A further option considered is the opportunity to work collaboratively with other local authorities to achieve economies of scale and access to established technical, financial and governance expertise, thereby potentially improving the business case for a Council-led SPV. In this regard, one of the potential broader heat networks would serve both Harrow Metropolitan Centre as well as Northwick Park Hospital and the University of Westminster campus in the adjoining borough of Brent. Brent itself has significant heat network opportunities around Wembley. These factors could lend weight to establishing a joint ESCo with Brent. Alternatively, boroughs such as Enfield have already established Council-led ESCos and there is an option to establish some form of relationship with them. These two options would be considered in more detail as part of the proposed further work.

4. Rationale for procuring or establishing an Energy Services Company (why a change is needed)

- 4.1 There are a number of significant benefits of district heating which would meet a number of Council aims, specifically with regards to commercialisation and regeneration opportunities. These include:
 - a) *Income generation* – a financially viable district heating network can provide an income stream for the owner of the heat supplier established to operate the network; this could include the Council.
 - b) *Carbon savings* – the efficiencies achieved through producing heat and electricity locally translates into carbon savings. These carbon

savings make a significant contribution to new developments' ability to meet carbon reduction requirements under the London Plan.

- c) *Fuel poverty* – this can be addressed by building in a heat price formula which pegs the customers' heat price at a discount (typically 10%) to business-as-usual (i.e. gas-boilers within individual properties). This is a commercial rather than a technical solution driven by the choice of ESCo model. Harrow has the second highest incidence of fuel poverty in London, with one in eight households deemed to be in fuel poverty.

- 4.2 Given these benefits, and that connection to either a site or wider heat network is a GLA London Plan requirement for major developments (over 500 units) and the regeneration expected within Harrow and Wealdstone, at least three Council sites including the Civic Centre redevelopment would be required to be powered by a site wide heat network. Rather than developing many site wide heat networks there is the opportunity to deliver a wider network/s within this growth area and to operate the network/s under a single, Council-led ESCo to achieve economies of scale, greater control and revenue streams.

5. Implications of the Recommendation

Resource Implications

- 5.1 There are no immediate resource implications of continuing with further studies, as this will be contained within existing revenue budgets, with further external funding opportunities to be pursued. Future proposals for capital investment would be supported by a full business case outlining the financial merits of any proposal.

Performance Issues

- 5.2 Progressing work into a Council SPV would have no direct performance issues, but should one, as a result of further work be set up, there would be significant performance issues including helping to generate long-term revenue streams for the Council, and helping reduce fuel poverty and thus making a difference for the vulnerable and local residents and business.

Environmental Impacts

- 5.3 No environmental impacts are anticipated should the Council agree with the report's recommendations to progress with a SPV and thus progress with further feasibility studies. In broader terms, heating networks are able to achieve significant carbon savings in the short-term (i.e. using gas-fired CHP engines) and in the long-term are easier to retrofit when alternative, renewable heat sources become available / feasible.

Risk Management Implications

- 5.4 Risk included on Directorate risk register? No

Separate risk register in place? No. Full risk register to be established once project moves from initial feasibility stages.

Legal Implications

- 5.5 There are no legal implications relating to this report's recommendation. All future contracts for studies tendered would be agreed by HB Law.

Financial Implications

- 5.6 The anticipated cost of the feasibility work into the identified district heating network opportunities is £145,000, including £20,000 for specialist energy project management support. Grant funding (£97,150) has been secured from the Government's Heat Network Delivery Unit (HNDU) for this work (67%). This is to be matched (£47,850) by Council revenue funding (33%) from existing budgets, specifically the Planning Delivery Grant (PDG). All other resources can be met from existing budgets, including £11,000 underspend from previous HNDU funding (which is ring fenced for energy projects and cannot be used to match fund subsequent HNDU funding referred to above).
- 5.7 The proposed detailed feasibility investigations into establishing district heating networks will consider their financial feasibility, including cash flow. Heat networks are a medium-to-long term investment but can represent a long-term income stream for the Council. This will be reviewed in more detail once the feasibility report is made available, before a further report to Cabinet is prepared.

Equalities implications / Public Sector Equality Duty

Was an Equality Impact Assessment carried out? No

- 5.8 There are no equalities impacts as a result of undertaking further studies into setting up a SPV and feasibility.

6. Council Priorities

Working Together to Make a Difference for Harrow

- 6.1 Should further work be undertaken and a SPV eventually be set up, this would help the implementation of the following corporate priorities through the potential for lower household and business fuel prices and reduced CO2 emissions:
- Making a difference for the vulnerable
 - Making a difference for communities
 - Making a difference for local businesses
 - Making a difference for families

Section 3 - Statutory Officer Clearance

Name: Jessie Man	<input checked="" type="checkbox"/>	on behalf of the Chief Financial Officer
Date: 12 August 2016		
Name: Blessing Enejo	<input checked="" type="checkbox"/>	on behalf of the Monitoring Officer
Date: 11 August 2016		

Ward Councillors notified:	NO, as it impacts on all Wards
EqIA carried out:	NO – see 5.8 above.
EqIA cleared by:	

Section 4 - Contact Details and Background Papers

Contact: David Hughes – Planning Policy Manager, 0208 736 6082
david.hughes@harrow.gov.uk

Background Papers:

Decentralised Energy Masterplan (2016). Available from:

http://www.harrow.gov.uk/info/200074/planning/1722/decentralised_energy_and_district_heating_in_harrow

Harrow: Future Business Models (2016), District Energy Development. Also available from:

http://www.harrow.gov.uk/info/200074/planning/1722/decentralised_energy_and_district_heating_in_harrow

**Call-In Waived by the
Chairman of Overview
and Scrutiny
Committee**

NOT APPLICABLE

[Call-in applies]