1. Sutton Decentralised Energy Network: The Overview

1.1. Our Vision

1.2. Sutton has ambitions to become London’s most sustainable Borough and has adopted One Planet principles. The development of a Sutton Decentralised Energy Network (SDEN) utilising renewable and low carbon fuel sources will support the ambition of achieving ‘Zero Carbon’ emissions. The project will utilise waste heat from the Beddington Energy Recovery Facility (ERF) and existing landfill gas engines. In addition, the project will increase fuel security and provide revenue which can be used to fund LBS services.

1.3. The Council agreed that heat supply contracts should be completed with Viridor (who are building the ERF) and the New Mill Quarter developer, Barratts. Following agreement of the Outline Business Case by the Council, the Sutton Decentralised Energy Network project was deemed viable, with a projected cumulative cash return over 25 years of £1.54m.

1.4. Our Mission

1.5. SDEN will start delivering in the north east of Sutton with plans to expand across South London.

1.6. The objectives of SDEN are captured in our mission statement which are:

- Sutton Decentralised Energy Network will provide low carbon energy to homes and businesses in South London.
- SDEN offers developers and building owners an alternative to high carbon fossil fuels that are damaging the environment.
- SDEN has been set up by Sutton Council as a wholly owned subsidiary to make Sutton a greener place.
- The cost of our low carbon energy will be the same as or cheaper than fossil fuel alternatives.
- Sutton Council will invest any profits into council services.
1.7. Services

Resilient supplies of low carbon heat, offering at least price parity compared to the alternative whole life cycle cost of heat produced from conventional sources. The heat will be produced primarily from renewable resources which will be:

- in the form of hot water, pumped to the customers sites via a network of buried highly insulated pipes
- backed up by conventional sources of heat (produced from gas fired boilers, or thermal stores which have been used to store heat from SDEN's renewable heat supplies)

Full metering, billing and customer service functions to support the sale of heat. This will ensure that each customer receives a market leading customer experience with accurate and timely billing of energy, together with the clear and informative documentation on the SDEN service. All of the above will as a minimum match and where possible exceed the requirements of the industry led regulation via the Heat Trust.
BUSINESS OBJECTIVES

Utilise low carbon sources of heat that would otherwise be wasted

Provide a high standard of customer service

Phase 1
Provide heating and hot water to the New Mill Quarter development in Hackbridge, providing £1.54m Cumulative Cash over 25 years

Phase 2
Expand the network within the north east of the borough and potentially beyond
2. Governance

2.1. The Council is the single shareholder of Opportunity Sutton Limited (OSL) and it retains ultimate control of the SDEN's business activities (SDEN being a wholly owned subsidiary of OSL).

2.2. The Council has established the Sutton Shareholdings Board which receives programme updates from OSL, the parent holding company for SDEN. These arrangements are set out in the Shareholder Agreements between the Council and OSL and between OSL and SDEN. By creating the management and operational structures as set out in this section, the Council is delegating the day to day commercial operation of the business and the delivery of the Business Plan to the SDEN Directors with control and oversight from OSL Board and Sutton Shareholdings Board.

2.3. Delivery of the scheme will ultimately be the responsibility of the SDEN Managing Director. The SDEN Managing Director reports to both to the OSL Board and the Sutton Shareholdings Board ensuring full accountability.

2.4. Operational Structures

2.5. The day to day management of the project will be led by SDEN's Managing Director supported by the SDEN Programme Manager. Phase 2 work is to be undertaken by an appointed specialist and is being funded the GLA.

2.6. The customer services and metering and billing functions are being undertaken by Council in-house resources and being recharged to SDEN.

2.7. There are three key functions:
   - Construction Management of the Phase 1 Installation Works
   - Contract Management of the Service Delivery Contractor
   - Business Development of Phase 2

2.8. To function as a company, a Board of Directors for SDEN have been appointed who can lead the company to deliver the business plan. The Directors will ensure that the contracted day to day operations are meeting its annual budget and the company builds up a reputation as a professional service delivery company with a high quality of customer service.
3. Phase 1 - The New Mill Quarter

3.1. SDEN will utilise heat from energy sources located in the Beddington Lane area which would otherwise be not be used. Phase 1 will supply residents and businesses of the New Mill Quarter site in Hackbridge. SDEN is contracted to supply the New Mill Quarter Site with heat for 25 years.

3.2. SDEN will receive funding of £2.6M from the Council for Phase 1 which will be drawn down from the Public Works Loan Board. Given SDEN is a wholly owned subsidiary of the Council, it is proposed that the Council will retain full control and ownership for Phase 1.

3.3. To deliver the Phase 1 network SDEN has entered into contracts with a design & build contractor and a separate contractor to operate, maintain and repair the network for SDEN.

3.4. SDEN is therefore an Energy Services Company (ESCo) which is selling a delivered energy service. The operation & maintenance contract for Phase 1 is initially for a period of 5 years to allow the scheme to become established, but can be extended for up to 10 years subject to performance.
3.5. Progress on Phase 1

3.6. The objectives for Phase 1 were delayed due to the protracted negotiations required to finalise and sign the contract to supply heat to the New Mill Quarter Site. As this was SDEN’s first connection it was an extremely complex agreement.

3.7. The key objectives for phase 1 as set out in the previous business plan were:

<table>
<thead>
<tr>
<th>Test project viability and reach financial close</th>
<th>Let contracts for the construction and operation of the Phase 1 infrastructure</th>
<th>Commence initial heat supplies from backup boilers located at New Mill Quarter (Felnex) Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieved July 2017</td>
<td>Achieved August 2017</td>
<td>Achieved September 2017</td>
</tr>
</tbody>
</table>

3.8. Carried forward into 2018-2021 Business Plan - Commence heat supplies through the wider SDEN network.

3.9. New Objectives for Phase 1

3.10. Commence heat supplies through the wider SDEN network with low carbon heat from Viridor.  
**December 2018**

3.11. Continued development of Customer Account Portal on SDEN website allowing for online payments and account management.
4. **Phase 2 - Expansion**

4.1. It is planned that work will be undertaken to thoroughly test viability of Phase 2 of the network during 2018-19. Each Phase 2 connection will require its own Business Case to demonstrate viability.

4.2. Works which have been undertaken to date to develop Phase 2 include:

- Heat mapping study undertaken by the Decentralised Energy Project Delivery Unit (DEPDU) on behalf of the Greater London Authority (GLA) for the entire Hackbridge area which identified circa 20 potential connections.
- Route proving exercise for a connection to the largest potential heat customer, St Helier Hospital, undertaken by DEPDU on behalf of the GLA.
- Secured a £40,000 grant from the Heat Network Delivery Unit in the Department of Business Energy and Industrial Strategy (BEIS) to employ specialist consultants to undertake feasibility studies for Phase 2 expansion. These studies will include surveys of potential Phase 2 buildings to assess the suitability of them connecting to a district heating network.
- Bid for and secured £124,800 funding from the GLA to undertake Phase 2 feasibility studies.

4.3. Looking to the west from the Phase 1 network, the key loads/connections which can be considered as a part of this business development plan definition for Phase 2 are shown in map 1 (page 10).

4.4. Map 1 only considers potential customers identified in Sutton to the West of the Energy Recovery Facility (ERF). It does not take into account potential customers elsewhere in the Borough nor those of neighbouring Boroughs such as Merton and Croydon which will also be considered as a part of the work to define Phase 2.

4.5. For two of the largest sites, St Helier and Lavenders Estate, initial works have already been undertaken to progress as follows:

- St Helier – a route feasibility study has been conducted. SDEN has commenced discussions with the Trust about the potential for a connection.
- Lavenders – discussions have taken place with the developer regarding the connection of this site to the network. An agreement in principle has been reached whereby SDEN will lay the network to the site in lieu of the proposed gas fired Combined Heat and Power (CHP). SDEN will then adopt the on site network, using the same principles as agreed with Barratt’s for the New Mill Quarter Site.
4.6. Phase 2 Objectives:

4.7 In the previous Business Plan we had an objective to develop a plan for Phase 2, we will do this by delivering the objectives as set out below.

4.8. To validate the data set outlined in table 1 by reviewing all energy demand loads in the Phase 2 area and preliminary energy demand assessment (based on energy strategies, actual or benchmarked data). This will involve engaging with each potential customer identified, together with any other developments which have arisen since the GLA dataset was gathered. In addition to revisiting the data set gathered by the GLA previously, SDEN will need to gather detailed information including but not limited to:

- consumer contact details
- energy consumption (projected or actual)
- floor area/no of units
- building usage
- boiler capacity (projected or actual)
- boiler location or connection point (projected or actual)
- boiler age (if existing)
- connection methodology
- current costs (operating, fuel and repair)

_The above information will be used to calculate the viability of each connection._

**September 2018**

4.9. Developing conceptual designs for expansions to the Phase 1 scheme, on the basis of the above data, including considering outline routes to develop a Business Case.

**November 2018**

4.10. Adding these projects to the techno-economic model created for Phase 1 to appraise viable options of the expansion of the Phase 1 scheme into Phase 2.

**January 2019**
5. **Financial Plan**

5.1. The detailed Financial Model which supports the Phase 1 Scheme initially demonstrated a positive cash flow of £1.54m from delivery of the scheme. A review of costs and expenditure prior to financial close predicted a reduced loan requirement of £2.6m and an increase in the net cumulative return over 25 years to £1.64m. Below is a table that summarises the key difference between the 2015 financial model agreed by the Council and the revised model as per financial close for Phase 1.

<table>
<thead>
<tr>
<th>Key Metric</th>
<th>2015 Financial Model</th>
<th>Revised Financial Model</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Rate of Return (IRR)</td>
<td>9.04%</td>
<td>9.09%</td>
<td>+ 0.05%</td>
</tr>
<tr>
<td>Cumulative Cash over 25 years</td>
<td>£1.54m</td>
<td>£1.64m</td>
<td>+ £0.10m</td>
</tr>
<tr>
<td>Capital Costs</td>
<td>£3.2m</td>
<td>£2.6m</td>
<td>- £0.6m</td>
</tr>
<tr>
<td>Residential Heat Price (p/kWh)</td>
<td>8.5</td>
<td>5.8</td>
<td>- 2.7</td>
</tr>
<tr>
<td>Annual Consumption per Property (kWh)</td>
<td>4,400</td>
<td>4,000</td>
<td>- 400</td>
</tr>
</tbody>
</table>

5.2. The above table shows that despite a fall in the heat price and assumed consumption, SDEN was able to improve the Phase 1 cumulative cash and IRR. This was achieved by a reduction in the scheme capital costs following the finalisation of the design and build contract.

5.3. SDEN will undertake an annual review of costs and expenditure to assess if the cumulative cash return over 25 years continues to be in line with the level identified within the revised financial model.

5.4. The outline budgetary position for the company from 2018/19 to 2021/22 is set out on page 13. Also included is a comparison between the current budget position and the budget position as at financial close in July 2017. The year end net surplus / deficit position for each year is largely dependant on the build out schedule for the New Mill Quarter. The variation between the July 2017 financial close budget and current budget position is due to a small variation in the build out schedule. Moving forward it is proposed to regularly monitor this position during the year with any significant variances being reported to the Sutton Shareholdings board.
5.5. During the early years of the company operation there is a negative net return or a net overall cost after taking into account revenues received from customers. This position continues until New Mill Quarter is fully built out and the company is providing heat to all expected residential and commercial customers.

5.6. The final financial position for 2017/18 is being prepared by the Financial Director and the company’s accountants Turpin, Barker, Armstrong (TBA). Once the statement of Accounts are prepared and audited they will be reported to the Sutton Shareholdings Board. This is expected to be in August 2018.

5.7. Map 1 (pg 10) shows the potential growth of the network in Phase 2, for a focused area around the New Mill Quarter site. As part of the consideration of Phase 2, a detailed financial model similar to that used for the evaluation of Phase 1 will be developed, looking at potential returns from that phase after allowing for phase specific costs and any borrowing requirement for development.
6. **Key Performance Indicators**

6.1. The performance of SDEN will be monitored through a number of Key Performance Indicators measured on a quarterly basis. The financial Key Performance Indicators are expected to include:

- Comparison against target of:
  - Percentage Variable Gross Margin – variable revenues/variable costs
  - Percentage Fixed Gross Margin – fixed revenues/fixed costs
  - Overheads expenditure
  - Long term repair fund (annual review)
- Interest and Principal repayment met under the loan agreement
- Levels of Bad Debt, monitoring above tolerance levels of bad debt
- Level of overdraft

6.2. The baseline for the financial Key Performance Indicators will be developed once the budget has been finalised for the first year of operation.

6.3. A framework for the SDEN customer service Key Performance Indicators will be developed by the end of 2018 and it is expected they will include:

- Customer satisfaction
- No. of Customer Complaints
- Customer Complaints resolved within prescribed period