ThamesWey

Thameswey Energy Limited

Covering the period 2020 - 2023

Housing | Energy | Development | Sustainability

1. Introduction

1.1 This business plan sets out the proposed priorities for Thameswey Energy Limited (TEL) to deliver the Thameswey Group companies' strategic objectives for the near future up to 2023. The plan ensures that the focus of activity within this company is clearly aligned with those of Thameswey Limited, and ultimately with Woking Borough Council's strategic objectives for the Thameswey Group.

1.2 The plan refreshes the 2019 to 2022 business plan (approved by Council in December 2018). It identifies the business opportunities and priorities for investment in the near future, including the main capital projects that will require investment to enable TEL to deliver its objectives for the Council.

2. Executive Summary of Plan

2.1 The over-arching theme of this Business Plan is a clear focus on delivery over the next two-three years of large projects that are critical to achieving a period of significant growth in activity.

2.2 The key points of the plan are summarised below:

- Thameswey Energy Limited is playing a major role in supporting the Council's plans for new housing, economic growth and environmental sustainability. As a result, TEL is embarking on a period of unprecedented growth arising from high levels of mixed use, high density development that is underway or anticipated over the next 5 years or more in Woking town centre and Sheerwater.

- The company has a well-established operational basis on which to build in delivering this period of growth. However, alongside the clear opportunities arising from sustained growth, there are challenges that will need to be addressed. For example, its core engineering resource will need to be strengthened in order to maintain the capacity to deliver high standards of service whilst keeping pace with new customer acquisition.

- In order to realise the opportunities available to it, TEL is committing to capital expenditure that balances the short-term pressures to maintain and replace its aging assets with investment in new generating and distribution infrastructure to secure new connections.

- TEL is adopting a direction of travel that will ensure it is capable of transitioning to lower carbon, high efficiency and 'smarter' energy systems that will ensure its infrastructure investments are sustainable over the long term.

3. Company Overview

Business Purpose

3.1 Thameswey Energy Ltd was established to provide a long-term delivery vehicle for sustainable energy infrastructure investment both within the borough of Woking and elsewhere, with the objective of securing reductions in carbon dioxide equivalent emissions. The company achieves this through its generation, distribution and supply of sustainable, low carbon and renewable energy to public, commercial and private domestic customers in the borough (and in Milton Keynes via its subsidiary).

Financial Requirements

3.2 The business is financed by way of loans and share capital.

3.3 TEL has the use of intellectual property owned by Thameswey Limited (TL) and is obliged to pay an annual licence fee of £1,000. At its discretion TL also charges a project fee for capital work of up to 4% of the value of the works. These fees are used to benefit the residents of the borough as TL contributes towards environmental, social and carbon dioxide equivalent emission reduction projects. Further information on the projects that have benefited from these funds is provided in the Thameswey Limited business plan.

3.4 The current programme of planned capital expenditure over the next three years is shown in the table below and described in Section 3 of this Business Plan. Major Capex beyond 2022 has not been identified at this stage and will be largely determined by the opportunities for new connections arising from new development activity at that time. Where reference is made to future connections to supply energy to new developments, these will be subject to planning approval and contractual negotiations.

Year	Capital Expenditure
2020**	£0.7M
2021	£24.0M
2022	£0.0M

** The sale of Woking Park assets is excluded 2020 spend

Company Ownership & Governance

3.5 Thameswey Energy Ltd is a private Limited Company registered in the United Kingdom and is a 100% subsidiary of Thameswey Limited (the holding company of the Thameswey Group), which is in turn solely owned by Woking Borough Council. TEL has a wholly owned subsidiary company, Thameswey Central Milton Keynes Limited (TCMK) which provides embedded generation facilities in the Central Milton Keynes area. Both companies have separate business plans and their results are not incorporated into the results of TEL.

3.6 In 2019 Thameswey Solar Ltd (TSL) was wound up and its activities and assets subsumed into TEL, bringing all solar energy generation in Woking within the responsibility of a single business entity.

3.7 The current board of Directors is set out below:

- Barry Maunders - Independent Director (Chairman)
- William Prescott - Independent Director
- Peter Bryant - Officer Director
- Douglas Spinks - Officer Director
- Ayesha Azad - Councillor Director

Significant Assets

3.8 The Victoria Way Energy Centre has been operational since 2001. The energy station includes a 1.3 MWe Deutz gas fired Combined Heat & Power (CHP) engine with two 1.2MW gas boilers, two absorption chillers and a thermal store to provide security of heat supply. During 2019 a third (peak) air cooled chiller was added to increase cooling capacity and enhance operational flexibility and

resilience. This energy station provides heat, cooling and power to a number of buildings within the town centre. Distribution assets include district heat and cooling mains and an extensive 11,000v mains distribution system and HV substations with a second HV network currently under construction.

3.9 During 2019 TEL wound down its activities in Woking Park and transferred its assets back to Woking Borough Council. This has enabled the Council to rationalise responsibility for the operation and maintenance of mechanical and electrical equipment in the Park as part of its contractual relationship with Freedom Leisure.

3.10 TEL owns and operates sites previously developed by WBC including a number of domestic sites with small scale CHP installations.

3.11 Following the transfer of TSL's assets, TEL owns and operates approximately 1850kWp of solar photovoltaic installations in the Borough.

Current Business Position

3.12 During the period 2020-2023 business priorities for TEL will focus on the delivery of a programme of new major infrastructure to support growth in Woking town centre. This includes:

- Continued expansion of existing energy distribution infrastructure connected to Victoria Way energy station to supply new developments coming forward in the eastern half of Woking town centre
- Completion and commissioning of the energy distribution infrastructure in the Victoria Square development
- Completion and commissioning of the new energy centre at Poole Road
- Connection of new major developments in the town centre to the Poole Road infrastructure

3.13 Alongside an expansion in generating and distribution capacity, TEL's existing business plans have committed to the phased refurbishment of aging assets at the Victoria Way energy centre in order to maintain operational reliability and release further capacity to connect new developments. Over the last three years (2017-2019), refurbishment and renewal of major plant has been carried out to the CHP generator, chillers and SCADA control system. The final phase of this programme will commence in 2020 with refurbishment or replacement of boilers and cooling towers.

3.14 During this Business Plan period work will commence on construction of the first phases of new energy infrastructure serving the Sheerwater Canalside development.

Major achievements since the last business plan

3.15 During 2018 Victoria Way energy station and Woking Park CHP produced 7,314 MWh and 4375 MWh respectively of heat and 3,711 MWh and 2,539 MWh of power respectively. TEL and TSL photovoltaic installations generated a combined total of 1,244,909 kWh of solar electricity.

3.16 The renewal of TEL's gas and electricity import contracts were tendered. A new supplier was appointed that provided the best commercial offer and has guaranteed the supply of 100% renewable electricity at no additional cost. The new gas supply contracts have been structured to enable purchase of biomethane certificates where demanded by customers as a means of offering greater carbon savings. As 'green gas' certificates are a separately traded commodity, the price varies against the wholesale costs of gas. However, in recent years purchasing green gas certificates would add between 5% and 15% to the cost of gas. This rate of increase is rapidly escalating as the demand for certificates is outstripping supply.

3.17 A new electricity supply to the 'SPACE' office development in Chertsey Road was energized.

3.18 A new district heat supply was extended to Chertsey Road, continuing from the first phase of a district heat network extension which commenced in 2018.

3.19 The central chiller capacity and chilled water (CHW) pump distribution infrastructure at Victoria Way energy centre was replaced and additional capacity added with the installation of a peaking air-cooled chiller.

3.20 Work continued on the installation of a second private wire town centre ring, with construction of a new main substation at Board School Road and supply points completed into the Victoria Square development. A second new switching substation was installed alongside TEL's existing Peacocks substation to complete dual high voltage interlinks enabling automated switching between the existing and new town centre private wire networks.

3.21 Construction commenced on the first of nine new electricity substations within the Victoria Square development, along with installation of control and fibre optic communications and SCADA systems.

3.22 Planning consent was granted for the new Poole Road energy centre and a delivery team appointed led by the main contractor Galliford Try.

4. Industry Outlook and Business Opportunity

Industry Developments

4.1 Government support for the growth in decentralised energy is continuing with the roll out of the financial support for heat networks (Heat Networks Investment Project or 'HNIP'). The scheme opened to applicants in 2019 and will run until March 2022. An application for funding to support further expansion of heat distribution infrastructure in Woking town centre will be submitted during 2020/21.

4.2 Industry support is continuing to grow for development of lower temperature, lower loss systems with greater use of 'smart' technology to provide performance feedback between a network and individual customer installations. Opportunities are expected to arise for partnering with technology firms developing new systems to support 'next generation' heat networks and Thameswey will seek to engage with such opportunities where appropriate.

4.3 The drive towards higher efficiency heat networks corresponds with changes proposed by Government in the Standard Assessment Procedure (SAP) methodology for energy compliance assessment for new developments as part of the Building Regulations. The introduction of a new SAP methodology is expected to set higher standards for performance of district heat networks, with lower efficiency systems penalised in comparison to conventional 'grid energy' systems. This lends importance to the drive towards higher efficiencies both within existing and new networks.

4.4 Government has announced its intention to introduce regulation to the UK heat market to provide greater protection for consumers against badly designed or operated systems. There is currently no fixed timetable for regulation, but the industry is taking steps to voluntarily align operators with the mandatory standards that are anticipated. These include setting up the Heat Trust (which TEL is seeking to join) as a customer-facing intermediary and the establishment of a new Heat Network Compliance Scheme to provide independent certification in respect of the quality of design, operation and maintenance of heat networks (i.e. a 'kitemark' for heat networks).

4.5 There is increased national pressure to expand the electric vehicle charging infrastructure and Woking Borough Council is seeking to actively promote the installation of new charging points.

Significant upgrades to the electrical distribution infrastructure will be required to support the roll out of increased numbers of charging points and more rapid chargers.

4.6 The Feed in Tariff for solar energy was closed to new applications during 2019 and is to be replaced form 1 January 2020 with Smart Export Guarantee (SEG). Licensed electricity suppliers with more than 150,000 domestic customers will need to provide at least one export tariff which must always be above zero. The export value available to generators will be determined by the market, but the scheme has the potential to offer an accessible route to market for PV generated power that is more responsive to price signals, offering greater value to generators when the grid is under stress.

4.7 The regulatory position for supply of electricity and heat is still an issue which will affect Thameswey during the course of this business plan period. Both TCMK and TEL will potentially need to look at how they structure the legal ownership of their assets to comply with their current license exempt status should their proposed generation, transmission and supply plans come to fruition.

Business Opportunities

4.8 The strategic direction of travel for this Business Plan is largely influenced by two factors:

- The emergence in recent years of a greater level of Government-led support, investment and regulation for heat networks. This is driving a more rapid phase of expansion in district heat in the UK than previously experienced and (for the first time) imposing industry-wide standards
- The greatest phase of business expansion through new networked connections and growth in customer base since TEL was established

4.9 The combination of these two factors comprises an unprecedented growth phase for the business, whilst transitioning to a new commercial and regulatory landscape.

4.10 The volume of anticipated development in Woking town centre has been boosted by the award of a government Housing Infrastructure Fund (HIF) grant. This has the potential to unlock development on 13 sites in the town centre comprising over 3,300 new residential units in addition to those already granted planning consent. All these sites are potentially capable of being supplied with district energy and represent a 3-fold increase in the number of new customers over and above those anticipated to be supplied initially by Poole Road. Initial discussions are also underway with developers promoting further high density residential and mixed-use schemes in the east of the town centre, with a view to being supplied by the Victoria Way energy centre.

4.11 Beyond the town centre, the principal opportunity exists at Sheerwater where the Canalside regeneration scheme includes a new energy centre and phased expansion of network supplies to new domestic, leisure and commercial customers.

4.12 Further opportunities exist to expand TEL's solar energy assets through the installation of solar thermal and solar PV equipment. Unlike the Feed in Tariff mentioned in 4.6, solar thermal still attracts subsidy in the form of RHI. The Poole Road energy centre will also feature a solar roof that will add 11.5kW. All of the power generated will be used within the Poole Road development, contributing to the energy centre's sustainability.

4.13 In addition to expanding its conventional district energy networks, TEL will continue to actively seek opportunities to further reduce carbon emissions associated with energy generation and consumption. The business will work alongside the Council and strategic partners to adopt new and emerging opportunities, including 'smart' energy technologies, in support of this objective.

5. Investment strategy

5.1 TEL's forward investment strategy for the period 2020-2023 is based on a continuation of the objectives first defined in the 2018-2021 Business Plan; to achieve sustainable growth in the business through increased customer connections to district energy arising primarily from redevelopment in the town centre and at Sheerwater.

5.2 Capital expenditure will be primarily focused on new generating assets and distribution infrastructure to deliver these objectives, combined with plant renewal to improve resilience and increase efficiency of existing assets.

5.3 A programme of major plant replacement and refurbishment at Victoria Way energy centre will be completed during this Business Plan period which will extend the operating life of the station for a further twenty years. New heat and power distribution infrastructure and generating capacity at Poole Road will provide the platform for supplying customers in the centre, west and south of the town.

5.4 In future years, networks connected to Poole Road will be further developed to enable reinforcement of generating capacity at Victoria Way to meet further growth in demand from new customers in the east of the town centre.

6. The Business Model

Assumptions and Critical Factors in Model

6.1 TEL has a financial model which has been used to make long term financial projections. The model is updated each year to reflect the previous year's activity and any updates on market forecasts. The model also takes into account new projects / connections, engine running strategies and capacity of the engines.

6.2 The model assumes that inflation will run at 2.0% per annum for the business plan period. In practice short term inflation rates will vary. Increased inflation will provide an improvement in the return for the company due to increasing revenues and margins.

6.3 The nature of the Council's investment is long term. The established business has an underlying sound foundation with a good customer base and considerable opportunity for growth. The business plan covers the financial period 2020 to 2023 in detail, as this can be accurately predicted. However, the economic model has been extrapolated into the future to facilitate the established business including Poole Road energy station.

Sources of Revenue

6.4 TEL's revenue in 2018 from energy sales and energy service charges is summarised in the table below.

Revenue	2018
Electricity	£1,155,497
Export of Electricity	£129,468
Triad Income	£11,079
Heat	£530,030
Cooling	£85,050
Standing Charge	£411,193
Admin Charges	£24,499
Energy Service Charge	£1,408,500
Sale of ROCs	£11,354
Feed in Tariff	£26,725
Plant Maintenance. Recharge	£256,709
Non-Trading Income	£390,722
Total	**£4,440,832**

Major Operational Costs

6.5 The most significant costs that the company incurs are primary energy costs (natural gas and electricity import) and operation and maintenance (O&M) costs

6.6 The growth in activity associated with new connections to the existing networks and development of new infrastructure inevitably results in additional Operation and Maintenance demand.

6.7 Some inflation in wholesale gas and electricity prices was experienced during 2018, but prices fell back in 2019. However, as TEL's supply contracts for commercial customers link the energy tariffs charged to customers using a formula based on RPI and the UK natural gas price index this has negatively impacted on revenues from energy sales. Whilst this pricing formula provides TEL's business model with some protection against volatility in wholesale energy prices, the net effect of falling wholesale energy prices is adverse for TEL.

Operational Plan

6.8 During the Business Plan period the Operational Plan will be developed to include adoption of planned maintenance regimes for new assets at Poole Road and Victoria Square, and at Sheerwater.

6.9 In response to the growth in activity the in-house engineering maintenance resource is being strengthened during the business plan period to ensure growth in activity is sustained.

6.10 Areas identified for improving operational efficiency in relation to existing assets include:

- Installation of automatic meter reading (AMR) to replace all manually read meters, along with integration of meter data into the Ista system

- Control of planned maintenance regimes using QFM software
- Adoption of Heat Trust standards for service and maintenance activities
- Updating of emergency response and supply continuity plans

Capital Investment

6.11 Capital expenditure in the period 2020-2023 will focus on:

- Major plant refurbishment and replacement at Victoria Way Energy Centre
- Further expansion of new heat and power distribution infrastructure in the eastern half of the town centre, subject to developments coming forward
- Completion of new HV (high voltage) private wire network capacity to serve the Victoria Square scheme and other new developments throughout the town centre.
- Completion of mechanical (district heat) and SCADA controls infrastructure at Victoria Square
- New energy generating capacity at Poole Road

7. Financial Strategy

Finance Structure

Appendix 1 shows the Finance Structure of TEL

7.1 TEL is financed by both share capital and loans. TL (ultimately WBC) has a nominal total of £5,050,450 in share capital finance in TEL, £1,110,000 of this share capital was used by TEL to invest in its subsidiary TCMK.

7.2 WBC charges TEL a margin on its loan rates which is used for the benefit of the Council. In 2018 the loan will contribute approximately £340,000 to WBC in the form of loan margin.

Shareholder Return on Investment

7.3 Average annual return on investment has been calculated up to 2035 as 3.5% in the 2016 business plan based on historical connections. New connections are calculated by individual business cases and are required to meet a minimum of 4.5%.

Appendix 2 shows the other benefits to WBC

Profit & Loss Account

7.4 The profit & loss account has 2018 actual data as a comparator, against 2019 expected outturn, and a budget for 2020 to 2023.

7.5 The budget has been based on historical costs, expected inflation and modelled revenue and costs. TEL has a good level of confidence in the budget. It should be noted that increases in the gas price index lead to increases in the prices charged to commercial customers with prices calculated on a monthly basis, this helps to reduce financial risk to TEL.

7.6 Amortisations of grants from connections are written off over the contract term, to match capital investment depreciation.

7.7 Revenue in 2019 is expected to be £3.8M, falling to £2.5M in 2020, this is due to Woking Park contract returning to WBC, revenue impact of £1.2M, cost of sales impact of £0.6M, and depreciation £0.3M saving, as the assets will be sold at Net book Value to WBC. The impact on profit is a reduction of £102K in 2020.

7.8 The plan shows a fluctuating profit (before interest, tax and depreciation) with the introduction of Poole Road, the business will not produce consistent profits until connections are complete, and a steady income and cost base is achieved.

7.9 During 2021 the Big Apple site redevelopment will commence, impact on revenue is a reduction of £200K for the year, offset by Poole Road income generation. Depreciation and finance costs increase from 2021 as Poole Road site comes on-line.

7.10 Staffing levels during 2020 will be increased to support TEL call centre by 0.5 FTE, and the engineering team by 3 FTE between 2021 and 2022 to support Poole Road development.

Balance Sheet

7.11 At the start of 2020 Woking Park assets are sold to WBC reducing the fixed assets held in the business during 2020. During 2021 Poole Road assets are capitalised, expecting to cost £24M.

7.12 Loan requirements from WBC have been agreed for Poole Road at £25M, and no additional funding is required during the business plan period. However, if the customer base increases, potential funding may be required to support infrastructure investment.

7.13 Due to the Chiller replacement and the impact on profitability in 2019 the profile of loan draw down has altered, resulting in working capital cash requirement, the profile of cash required is summarised below:

- 2020 £0.5M
- 2021 £19M
- 2022 £1M
- 2023 £0.75M

7.14 During the business plan period, long term loans increase from £14.2M in 2019 to £31M in 2023, the loans support the development of Poole Road energy station.

Appendix 1: TEL Finance Structure

Share Capital Summary Date	Total Share Capital £
01.06.2000	720,000
01.02.2002	920,000
01.10.2003	800,450
31.12.2005 (invested in TCMK)	1,110,000
30.12.2011	500,000
30.07.2012	500,000
24.12.2012	500,000
Total Share Capital as at 31.12.2019	5,050,450

Appendix 2: Benefits to WBC

Description	2018	2019	2020
Net Interest Margin	£339,893	£328,664	£329,114
Carbon dioxide Emission Savings (tonnes)	1,041	TBC	TBC
Payment of NNDR	£19,209	£19,560	£19,951
Assist WBC in its Climate Change Strategy	✔	✔	✔

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