

Southend-on-Sea Borough Council

Agenda
Item No.

Report of Deputy Chief Executive (Place)

to
Cabinet
on

19 September 2017

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Manager

Energy Opportunities Project

Place Scrutiny Committee
Executive Councillor: Councillor Holland
Part 1 (Public Agenda Item)

1. Purpose of Report

- 1.1. The purpose of this report is to seek approval to launch a set of energy generation, storage and management services under the Southend Energy brand underpinned by minimum standards and an associated marketing campaign.

2. Recommendations

- 2.1. **This proposal recommends that the Council establishes a set of minimum standards for energy generation and storage devices and associated management services to be managed through the proposed governance process**
- 2.2. **That the Council should market the devices and services to help households to save money and reduce their net energy consumption**
- 2.3. **That the scheme be supported by an appropriate governance process, as set out in Para 5, that will approve suppliers and processes for the scheme and the marketing for both the scheme as a whole and individual suppliers.**
- 2.4. **To note that the scheme will be funded over time by referral fees and marketing contributions from suppliers with an initial investment of £50k from the Business Transformation Fund (already approved) to launch the scheme and to fund one staffing post until revenues cover on-going costs. Over time, any net revenues will be used to fund the energy team.**

3. Background

- 3.1. In late 2014, the Council adopted the Low Carbon Energy and Sustainability Strategy 2015-2020 (LCESS) which identifies CO2 reduction through energy projects as a priority.
- 3.2. Energy prices for households and businesses are set on a further upward trend despite uncertain levels of wholesale energy prices. Wholesale energy prices have levelled off in 2017 following sharp rises in 2016 but the non-commodity elements of the average household bill have risen to be more than 50% of the unit price and are set to rise by above average inflation for the foreseeable future. The non-commodity costs include those incurred in managing the electricity grid including the new capacity market and the costs of balancing supply and demand which is National Grid's single largest cost (£2bn) and fastest rising.
- 3.3. Electricity generation is expected to continue to change rapidly as coal is phased out by 2025 and as more renewable and nuclear generation facilities come on stream.
- 3.4. Electricity demand is expected to rise over the next 10-25 years driven by the electrification of heat as the government continues to incentivise electric heating over gas, additional cooling and mechanical ventilation required by climate change and the electrification of transport.
- 3.5. As supply and demand patterns change nationally, the risks of imbalances that are unmanageable increase with outlying areas becoming at greatest risk. Local resilience should be a priority within the overall Climate Change Adaptation process.
- 3.6. The energy industry is expanding services that will help it to manage supply and demand and to encourage consumers to use less energy at peak time and to use more at times when supply outstrips demand. Some of these services have been available to large commercial consumers for more than 15 years, such as demand side management where consumers are paid to turn off energy consuming equipment when the grid requires it. Other services are more recent, such as the Capacity market that was launched in 2015-16 and time of day tariffs that are still in development but are common in other parts of the world. A 2015 study for the Infrastructure Commission by Imperial College estimated that, if adopted fully, these services would be worth £8bn per annum by 2030. Collectively, these services can be called Grid Rebalancing Services. The approach is further described in the BEIS/Ofgem Smart Energy plan published on 24 July 2017
https://www.gov.uk/government/publications/upgrading-our-energy-system-smart-systems-and-flexibility-plan?utm_source=Energy%20Saving%20Trust%20Ltd&utm_medium=email&utm_campaign=8520914_28_07_17%20Weekly%20Policy%20Update&utm_content=Smart%20energy%20plan&dm_i=N26,52MS2,LTOEG7,JFKC0,1.
- 3.7. Domestic versions of these Grid Rebalancing Services are available in the US and are set to be launched in the UK with several companies testing processes and systems in Innovate UK projects and ready to launch commercially. The

prerequisite for consumers to be able to exploit these services will be having a battery installed in their home and an agreement with an aggregator to manage the process. Consumers will be paid to allow their home to be operated from the battery from time to time and for their battery capacity to be used to sell services to the grid. Overall, there are an estimated 14 services or revenue streams available to households with the first to be available, Firm Frequency Response, expected to be valued at around 30% of the average consumer's electricity bill.

- 3.8 The Feed-in-Tariff (FiT) regime has been cut substantially making solar PV very much less attractive. Batteries are currently more expensive than is desirable but they make solar PV more economically viable. Recent improvements in battery technology have dramatically increased the life of the equipment and the cost of batteries continues to fall. Some combined PV and battery systems are close to achieving 15-20 year paybacks including funding, maintenance and subscription costs whilst adding grid rebalancing services can dramatically increase the economic benefit.
- 3.9. There are few standards in the market relating to marketing and installation of energy generation and fewer relating to storage. The Renewable Energy Association has launched a Consumer Code of Conduct and the Institute of Engineering has a standard for solar PV installation. No organisation addresses grid rebalancing services making this market open to rogue traders and misleading marketing.
- 3.10. Fuel poverty nationally had been estimated by DECC (2016) at 10.4% but this was before the sharp increases in energy prices experienced in the second half of 2016. In Southend, fuel poverty overall is estimated at under 10% but 27 Lower Super Output Areas (LSOA) are above 10% and 4 are above 15%. With energy inflation set to increase by more than general inflation, fuel poverty is set to increase. Many consumers will be able to off-set the higher energy costs by engaging with Grid Rebalancing Services but many vulnerable households will find this very confusing and difficult to engage especially as multiple services are likely to become available with different financial profiles and revenue opportunities.
- 3.11. The Government sponsored and regulated scheme to assist vulnerable consumers with energy efficiency measures, Energy Companies Obligation (ECO) has been cut from £49 to £30 per electricity consumer to reduce bills. The new ECO processes are concentrating on insulation with very little budget for new boilers or other efficiency measures. The Council has joined LEAP which is an energy industry scheme to promote take up and to advise consumers on ways to reduce their energy costs which will help them to identify both behavioural and equipment based opportunities. The minimum standards and the marketing will therefore seek to engage with schemes that are using the mechanisms established in the 2011 Energy Act to allow householders to fund energy efficiency equipment using the future energy savings available. These schemes are starting to be available as improved versions of the previous failed Green Deal scheme using the same regulations and safeguards for consumers.

4. Proposal

- 4.1. Many services will be appropriate for different households in a new market that will have the potential for services to be offered by less scrupulous operators. The Council therefore proposes to establish a marketing scheme under the Southend Energy brand incorporating minimum standards to assist Southend Households to exploit the new markets. This independent verification will help the quality suppliers to promote their services locally increasing take-up whilst helping consumers to make better choices.
- 4.2. Specific marketing will be deployed to target households who could be vulnerable to fuel poverty recognising that reducing the costs to these families for heating and powering their home can have on health and well-being. It will be critical for these customers that equipment can be paid for using the provisions of the Energy Act 2011. Residents will always be advised to regularly review their energy tariffs and to compare the value of products and services with other suppliers.
- 4.3. The minimum standards will cover matters such as financial provisions, warranty, maintenance and the ways these should be linked to finance and product life, ways in which revenue should be shown, some minimum technical requirements particularly relating to safety and matters relating to services. The standards will also link to the marketing of services under the Southend Energy brand whereby companies can use the brand and will also receive support from Council marketing services. Over time, the standards can be extended to include other energy related devices and services.
- 4.4. The Council expects to enter into partnership agreements with suppliers that will offer services and products through Southend Energy such that reasonable marketing and customer liaison costs are covered either directly or through appropriate referral fees. Such amounts will be small as a proportion of each contract, will be declared to customers (although the exact amounts will remain in commercial confidence) and any surpluses will be used primarily to fund the implementation of LCESS, the Council's energy team and then other resources within the Council.
- 4.5. Six potential partners and services have been identified so far with initial discussions progressed to date. Some of these services may be bundled together by the same partner. It should be noted that some of these products and services will by their nature be offered on a long term contract basis, typically 15-25 years. The names of the partners are withheld to comply with confidentiality agreements:
 - 4.5.1. LED/Battery/Solar proposition expected to make households 80% independent of the grid. Savings between 20-40% are expected for most households net of any maintenance, service and funding costs. No initial cost to householder. This supplier is expected to provide a grid rebalancing service as a bundle during 2017.
 - 4.5.2. Battery/Solar proposition at a low initial capital cost. Credit will be available in 2017. This supplier is expected to provide a grid rebalancing service as a bundle during 2017.

- 4.5.3. Free to Roof Solar PV. The free to roof solar market that has been dormant for 2 years is starting to re-emerge. This will provide a solar PV system with energy used by households charged at 7p per kWh (compared to 14p+ for grid electricity). Feed-in-tariffs will be retained by the funder to repay capital costs.
- 4.5.4. Grid rebalancing. Independent aggregators are set to launch domestic services in 2017 for households with batteries installed. Initial revenues to households expected to be around 30% of the average household electricity bill. Around 12-13 additional revenue streams are expected to be delivered which will increase revenues over time even if the initial revenue stream is reduced through over provision.
- 4.5.5. Storage Heater Controls. This supplier will provide a device that can be retrofitted to automatically control storage heaters. 20-40% electricity savings have been demonstrated through better matching of available heat with demand.
- 4.5.6. Green Deal type provision of energy saving equipment using savings generated to fund the supply. The service will provide funding as well as installation now that the Green Deal Finance Company has been closed while the supply, installation and delivery will be governed by the provisions of the 2011 Energy Act.
- 4.6. It is anticipated that all contracts will be formed between the householder and the supplier except where the Council chooses to buy services direct through appropriate procurement processes.
- 4.7. Whilst the primary target for services is the domestic market, many of the products and services will be appropriate for businesses
- 4.8. A Governance process has been established to approve changes to the standards, to approve supplier propositions to be accepted in the scheme and to manage the deployment of the scheme. The Governance process is described at Section 5.

5. Governance

- 5.1. Governance control will be required for implementation and long term operation of the scheme. It is proposed that the Southend Energy partnership should also be managed through the same process.
- 5.2. An Energy Opportunities Board (EOB) has been created to manage implementation, approve marketing plans including PR, to approve the minimum standards and changes over time and to approve suppliers and supplier propositions on the scheme. It is anticipated that the EOB should meet monthly for the first 6-9 months and then at least quarterly in addition to the quarterly meetings that already take place with Southend Energy.
- 5.3. The EOB will be led by the Director of Public Protection and will comprise of the Energy and Sustainability Manager, a member of the Communications team

and the Energy Opportunities Officer with attendance by the Deputy Chief Executive for Place at his discretion.

- 5.4. Day to day negotiation and operation of the scheme will be managed by the Energy and Sustainability Manager who will also continue to manage Southend Energy.

6. Timescale

- 6.1. The earliest possible implementation would be November 2017 but implementation may be delayed to early 2018, following a period of consultation on the minimum standards with the industry and negotiations with potential suppliers.
- 6.2. A period of pre-sales and initial customer consultation will be undertaken using leads gathered from enquiries for previous solar schemes, South Essex Homes and staff leads to ensure that messages and processes are tested. These initial customer discussions and installations will be subject to agreement from the customers to be able to use their details in marketing.
- 6.3. A launch event will be planned in early November using early customer examples to show the potential benefits to households. The event will be held on the pier and will involve planned media briefings and presentations to maximise coverage.
- 6.4. During 2018, the energy team will seek to present the proposition frequently to residents associations, business forums, faith groups and other groups including South Essex Homes and associated social landlords to promote the scheme and to maximise take-up.

7. Direct Savings

- 7.1. Savings for households will vary by product and service and by household circumstances. Based on one LED/Battery and Solar proposition that is likely to be available from launch, most households occupying houses will be able to save 20-40% of their annual electricity costs in the first year although some may see savings at a lower level. These savings will increase by the extent to which energy inflation exceeds RPI each year. Bundling additional services with this proposition is projected to provide an opportunity for further savings of around 30%.
- 7.2. If 3,500 households take up the example proposition above in the first 3 years, between £0.5-1.5m will be released as savings to these households each year.
- 7.3. The project is unlikely to present any direct savings to the Council but is expected to generate revenue in excess of costs over time. Exact revenue has yet to be negotiated with individual suppliers but early conversations have indicated that contributions to implementation resources and marketing expenditure will be available in addition to a profit share or referral fee. It is likely that the revenue will exceed costs approximately 18 months after launch and that the proposed initial investment will have been recovered by the end of 3 years assuming 3,500 installations.

8. Other Benefits

- 8.1. The proposal will save between 1,700 and 5,300 tCO₂ per year based on 3,500 taking up the example proposition as above. The CO₂ reduction represents 0.2-0.7% of total CO₂ emissions for the entire borough.
- 8.2. The proposal will release money into the economy or help households to pay their bills. Reduced debt or better heating of properties is known to have an impact on health – this benefit to public health is unquantifiable.
- 8.3. Implementation of the services and products through this scheme will increase local power resilience as well as reducing the load on the local grid infrastructure.
- 8.4. Most of the services available through the scheme will require internet connections which will be provided where the householder does not already have connection. This will increase interconnectivity and will help to promote the Smart City strategy within Southend.
- 8.5. Assisted living services are available using sensors in the home based on very similar technologies and services. Combining these services with installations through the scheme will cut the costs of providing assisted living services in addition to the benefits from both the energy and the assisted living schemes.
- 8.6. Two of the objections to the smart meter rollout are that energy suppliers can identify private information from smart meter data and that vulnerable people will be unable to move their usage into cheap usage periods when time of day pricing follows implementation. Provision of batteries through the scheme will remove these objections by hiding real consumption because the battery acts as a buffer whilst also providing time-shifting of consumption to protect consumers from high energy cost periods.

9. Risks

- 9.1. Planning. Most of the proposed products and services are not subject to planning or are classed as permitted development. The major exception is Solar PV within the conservation area where any installations facing the highway will require planning permission.
- 9.2. Distribution Network Operator (DNO). Approval for the grid connection of the solar will be required from the DNO – UK Power Networks. As most of the electricity generation will be used on site this is not expected to be a problem but regular liaison will be required. This process will be managed by the individual suppliers.
- 9.3. Technology. There is little technology risk in the services identified to date because all of this equipment and services have been established for many years and in volume. Batteries have been supplied into energy markets for more than 20 years with new battery technologies tried and tested before implementation. Solar PV is well established and improving while grid rebalancing services have been available in the commercial marketplace for over 15 years. The innovation in these proposals are mainly different ways to

package services and funding to make significant savings given the new price points, capability and availability of equipment matched against the rising cost of energy.

- 9.4. Reputation. There is a reputational risk if any of the suppliers fail to match the minimum standards or if few households take up the service. The Governance process is designed to manage the first risk whilst proper marketing will encourage households to take up the services which will offer significant benefits.
- 9.5. Falling Capital Costs. There is a risk that falling capital costs mean that early adopters of the propositions could be left in a long term contract that is less advantageous than later offers due to falling capital costs. This is unlikely despite the near certainty that capital costs will fall because the offers are a bundle of equipment, services and funding set against prevailing energy costs. The reduction in FiTs, increases in interest costs and increases in energy prices have been shown in sensitivity testing to offset any likely reductions in capital costs.
- 9.6. Performance. The financial projections for each service and product depend on the calculated savings and revenue generation from the measures being achieved. These have been calculated cautiously to ensure that the risks are on the upside. Industry quality standards and the provisions for quality management incorporated into the 2011 Energy Act provide assurance on this risk.
- 9.7. Weather. Performance of solar can be weather related and a cool summer with lower than average sunlight may result in a lower yield than predicted. Conversely, a summer with higher than average sunlight will generate a higher yield.
- 9.8. Resources. Some initial Council resources will be required before the revenue available to be earned matches running costs. The cost is estimated at £50k including one post as Energy Opportunities Officer and around £15k marketing in addition to direct resource and marketing contributions. It is estimated that revenues will match costs within 18 months of launch and will repay the initial investment within 3 years but there is a risk that these milestones could be delayed.

10. Funding

- 10.1. No Council Capital will be required for this proposal.
- 10.2. £50k funding has been approved from the Business Transformation Fund to fund one member of staff plus marketing costs until revenues match the direct costs of the scheme – estimated at 18 months from launch.
- 10.3. One full time staff member will be required as the key point of contact and support for the scheme to be funded from the long term revenues expected to be generated.

11. Financial Summary

- 11.1. The project will provide an income stream from referral fees or profit share which will build over time. It is estimated that revenues will exceed costs from around 18 months from launch.
- 11.2. The major beneficiaries of the scheme will be households that engage with services and equipment provision with between £0.5-1.5m being saved by residents each year based on 3,500 installations.

12. Assumptions

- 12.1. The following key assumptions are included in the financial summary:
- Average household electricity consumption is 4,500 kWh per annum
 - 1,200 households per year take up the LED/Battery/Solar proposition each year saving between 10-40%.

13. Other Options

- 13.1 Other options considered include:
- Do nothing. Doing nothing will remove the opportunity for Southend residents to make significant savings on their energy costs in the face of rising energy prices and remove the opportunity for improved local grid resilience. Households wishing to engage with the market would be exposed to a confusing marketplace without support.
 - Select a single supplier. Different households will require different packages for equipment, services and funding such that no single supplier is able to deliver all options. A single supplier would also require a lengthy and costly procurement process.

14. Corporate Implications

14.1. Contribution to Council's Vision & Corporate Priorities

14.1.1 This project will support the delivery of the Council's second Low Carbon Energy and Sustainability Strategy which was adopted in late 2014.

14.1.2 This project will provide significant savings for households and indirect health benefits supporting Council priorities of Healthy and Prosperous.

14.1.3 This project will save between 1700 and 5,300 tCO₂ contributing to Council priority of Clean.

14.2. Financial Implications

No Council capital is required for this project whilst one off revenue funding of £50k from the Business Transformation Fund has been approved for the early months before revenues match and then exceed direct costs, estimated at 18 months.

14.3. Legal Implications

14.3.1 It is expected that each supplier will enter into a partnership agreement with the Council to meet the minimum standards and to provide funding to the Council in the form of referral fees and/or profit share as well as appropriate direct contributions to marketing and direct costs. Where a South Essex Homes tenant or any other tenant of the Council wishes to implement one of the services, appropriate landlord's permission will be required.

14.4 People Implications

14.4.1 One additional permanent role will be required to provide a central point of contact and reference for the scheme. Over time, the revenues from the scheme will exceed the costs of this role.

14.5 Property Implications

14.5.1 There are no implications for Council properties from this proposal

14.6 Consultation

14.6.1 The relevant industries, Imperial College, Property and Finance have been consulted. Further discussion has also taken place with Innovate UK, Energy Systems Catapult and the new Green Deal Finance Company.

14.7 Equalities and Diversity Implications

14.7.1 There are no equalities and diversity implications as a result of this report.

14.8 Risk Assessment

14.8.1 The risks are reviewed in full at Section 8. The major risks relate to falling capital costs and to timing in that revenues may take longer than 18 months to exceed direct costs.

14.9 Value for Money

14.9.1 This project will use savings achieved from packages of renewable energy, grid rebalancing revenue and the extra efficiencies generated from battery technology to derive benefits for households in Southend. No Council capital will be deployed for this project.

14.10. Environmental Impact

14.10.1 The proposal will save 1,700-5,300t CO₂ per annum based on 3,500 households implementing one of the available propositions.