

Community Energy review draft report

1 Introduction

Following the election of a new Labour administration in 2018 the council adopted a commitment to: “support the creation of community led sustainable energy projects on estates to help residents reduce their energy bills”. The commitment was carefully crafted to promote community energy projects, in particular, to support the Council’s ambition to decarbonise, and provide additional impetus to build on the previous work of Deputy Cabinet Member, Cllr James Coldwell.

Community Energy has been prioritized by the Housing & Environment Commission, in part, because of government plans to end Feed in Tariffs (FiT) in April 2019, which makes solar less viable, thus requiring a consideration of implementable models. Other drivers are tackling fuel poverty and the urgent need to make progress in carbon reduction, given the current climate emergency, which was declared at council assembly 27 March 2019.

Community Energy has been organically growing in cities over the last several years, usually powered by volunteers using a Community Benefit Society (‘BenCom’) model, whereby the capital is raised through a local stock offer to local residents, and funds are set aside to invest in social and environmental priorities, which are chosen locally, by the beneficiaries. Projects frequently use solar to generate energy as this is one of the best sources of renewables in an urban environment. Initiatives also usually incorporate other activities to reduce energy consumption and tackle fuel poverty.

Community Energy England defines Community Energy as the delivery of community led renewable energy, energy demand reduction and energy supply projects, whether wholly owned and/or controlled by communities or through partnership with commercial or public sector partners.

The council decided to take forward the council plan commitment to deliver community energy by supporting three pilot projects on three different estates: Juniper House, Haddonhall and Brenchley Gardens. BRE Group have been employed to evaluate these and provide the council with criteria to judge the viability of future projects.

The Housing and Environment Scrutiny Commission resolved to look at Community Energy in the Autumn of 2018 in order to assist with policy development, by hearing from the three pilots and bringing together different stakeholders: estate tenants and homeowners, elected members from the council and GLA, council officers from different departments; and three local community energy social enterprises: Repowering London; South East London Energy Company (SELCE) and SE24.

On 17 December 2018 a Commission roundtable meeting was convened, which started with an overview of the Council’s work on climate change and carbon reduction, followed by presentations on the three pilots, and then a longer roundtable discussion on some of the challenges and possible approaches to delivery of community energy.

Follow up information arising from this meeting, from the BRE Group and others, has been also been considered in drafting this report.

2 Climate emergency and carbon reduction

The climate emergency declared by the Council Assembly in March passed a motion pledging to go carbon neutral by 2030, twenty years earlier than previously planned.

Renewable energy and energy reduction will be an important part of achieving this aim. Zero Carbon Britain¹ estimates that in order to maintain our modern lifestyles using 100% renewable energy a 60% reduction in energy is required.

The Commission received a report outlining the current council strategy and associated actions. These were produced prior to adopting the more demanding target.

Officers reported that there is a wide range of activity across the Council that could be considered part of its Sustainability work, for example:

- Energy and carbon management
- Regeneration, place and wellbeing
- Housing renewal and asset management
- Planning
- Air quality improvements
- Development of green spaces
- Biodiversity
- Waste management and recycling
- Transport planning
- Decentralised energy

All of these areas have current or draft policies and action plans in place, and the Sustainability team are working on an overarching policy that summarises these collectively, while demonstrating how Sustainability contributes to the Fairer Future Promises.

3 Renewable Energy and energy reduction

3.1 The BRE Group report outlines how Renewable Energy (RE) technology can be split into two categories; heat generating and electricity generating. There are some hybrid technologies that are able to provide both.

¹ Zero Carbon Britain: Rethinking the Future. Report in short: a summary of key findings, page 2.

3.1.1 Electricity generating technologies

- *Wind turbines* –generates electricity from the wind, can be located both on land and offshore.
- *Solar photovoltaics (PV)* –solar modules that generate electricity, can be mounted on buildings or land.
- *Hydro & tidal* –generates electricity from moving water with or without a dam

3.1.2 Heat generating technologies

- *Biomass*–heat generated from burning wood, wood pellets or bio-products for direct space heating and can incorporate hot water provision.²
- *Solar thermal* –solar collectors that generate heat that can be utilised as a pre-heat for stored hot water or heating.
- *Heat pumps* –uses electricity to extract heat from air, water or ground.

3.1.3 Hybrid RE technologies

- *Solar photovoltaic-thermal (PV-T)* –combines PV technology with a heat generating technology such as solar thermal or heat pump to deliver electricity and low grade heat.
- *Combined heat & power (CHP)* –similar to a gas turbine which produces electricity and heat for large heating loads.
- *Geothermal*–extracts heat from hot rocks deep underground generating large amounts for heat and electricity from steam.

3.2 Solar PV in Southwark is one of the more suitable renewable technologies for urban locations, delivering low carbon electricity from otherwise unused building surfaces. Solar generation is reliant on receiving enough daylight with efficiency affected by the incline of the roof, the aspect and shading from things like trees and chimneys. A key consideration in erecting solar is the strength and condition of the roof.

BRE Group advises that system specification and performance is key to having an energy demand that closely matches the generation. The business case for solar PV works well when the daily on-site electricity demand is in alignment with a typical solar generation curve, i.e. the majority of electricity consumption occurs during daylight hours, with an increase in consumption between 10am –2pm. Solar can be directly consumed on-site, stored in batteries for usage at times of non-generation, stored as hot water or heat in standard immersion tanks using an energy diverter, or exported to the grid. The other emerging opportunity providing power for electrical cars.

One of the challenges for estate based solar arrays is that typically only the communal areas can be supplied electricity directly, which limits the profitability of a project and means ways have usually needed to be found by Community Energy projects to ensure that residents directly realise the benefits.

Schools and community buildings are more likely to be able to easily match demand with supply as the communal load is higher often predominantly in the day.

² Biomass subsidies in urban areas will end in January 2019 because of air quality concerns

3.3 Southwark's district heating (Combined heat and power) A significant proportion of Southwark's housing blocks are supplied by district heating systems. Local heating systems to housing estates provide a significant opportunity to develop local infrastructure to save carbon and be more efficient. The current infrastructure is inefficient and requires significant investment. The council manages the contractual elements for the waste to energy supply with SELCHP (South East London Combined Heat and Power) run by Veolia. This plant produces heating and hot water that supplies approximately 2,600 properties of nearby Southwark housing estates (fed from boiler houses at Abbeyfield, Clements Road, Pedworth and Tissington).

The expansion of this network is being considered as part of a wider decentralised energy strategy and the regeneration of the Old Kent Road. There are a number of projects looking at this and the council is commissioning heat mapping and feasibility studies. The GLA is providing capacity support for this and there is a significant opportunity here, although this lies more with the council, rather than local residents and therefore it would not strictly fit the definition of Community Energy.

4 Community Energy models and local community energy initiatives.

4.1 Most Community Energy projects in London are powered by solar arrays. Historically these have generated an income by providing electricity to the communal areas of the project and by selling electricity to the grid at preferential rates; these are the Feed in Tariffs (FiT), which ended in April 2019. Under this arrangement solar array projects with the right aspect have been able to generate enough money to pay back the capital costs and generate a surplus to invest in social benefits; often these are about energy reduction and focused on the residents in fuel poverty.

Three community energy companies attended the roundtable: SELCE, SE24 and Repowering London. All are social enterprises; all initiated by volunteers and often largely powered by volunteers, whose aim is to enable a socially just transition to a low carbon economy, powered by renewable energy.

SE24 is the most local company and almost solely volunteer run, whereas SELCE and Repowering London have been operating longer, employ workers and operate across South East London and the capital respectively.

All the Community Energy companies who attended use a similar financial model; utilising solar in a suitable location in partnership with stakeholders. A feasibility study is then undertaken and if this establishes a viable scheme then the next step is to raise investment funds by a stock offer to buy equity. Local residents are encouraged to invest. The resulting capital enables the purchase of solar panels. Once installed these provide a revenue stream through energy sold to the site at a cheaper rate; electricity sold to the grid, making use of feed in tariffs. This generates enough money to pay both a dividend to stock owners at a small social rate of return, and a surplus that is reinvested back into the local community. A licence is agreed with the freeholder which provides for installation, maintenance, and provision of cheap solar energy.

4.2 SE24 have primarily worked locally in the charitable sector, with churches and community centres, however new funding means they will also be working with social housing associations. The following projects are operational:

- Herne Hill Methodist Church Hall 2016 (10 kWp)

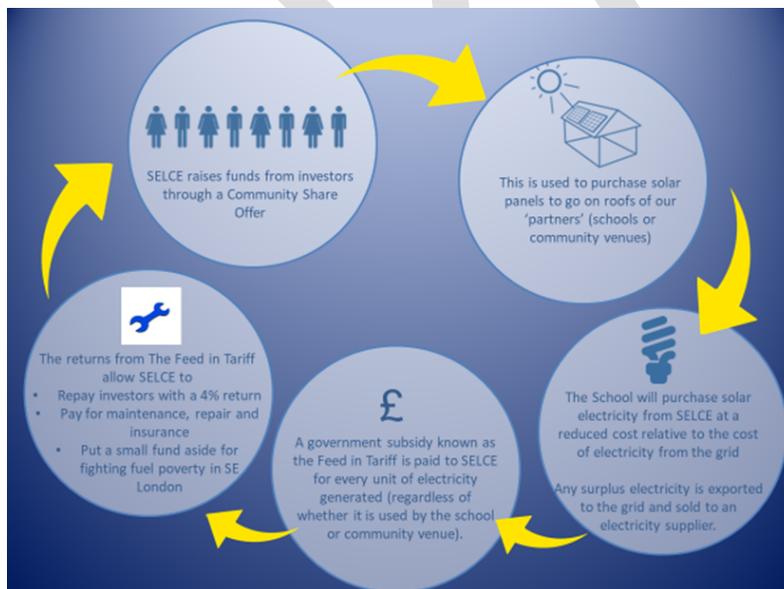
- Herne Hill United Church 2016. (10 kWp)
- St. Christopher’s Hospice 2018 (50 kWp)
- Dulwich College 2018 (100 kWp)

Their social housing pilot project is due to start early 2019 at the Kingswood Estate to provide home insulation and energy saving measures to households at risk from fuel poverty. This will include a pop-up energy advice café at the estate and is being delivered in partnership with SELCE using funds from SE24 community fund.

SE24 recommended the council consider the benefits solar could bring from other parts of the borough estate; particularly primary schools. This will provide a revenue stream for schools and they can use solar generation as a way of changing behaviour. Community energy and solar generation provide an opportunity to educate children who then influence their families. They thought extending the scope of this programme to education could have a real impact on future generations.

4.3 SELCE have installed 7 solar arrays across seven schools in Greenwich; each school will reduce carbon by 300,000 metric tons over the lifetime plus save the individual schools £300,000 each. In addition the projects have created a pool of £100,000 which is being targeted at people in fuel poverty.

Figure 1: Schematic diagram of SELCE’s school business model



SELCE is now investigating a business model for solar PV on housing co-ops. Housing blocks comprise a significant portion of roofs in London but have historically lacked the self-consumption to make a solar PV system financially viable. They intend to increase self-consumption either through using the “Energy Local” model and/or a combination of batteries and electric vehicle charge-points.

4.4 Repowering London came out of a pioneering initiative in Brixton; it was the first community owned urban project on an estate. Their business model works by forming a cooperative for each solar initiative. To date they have co-produced five community-owned solar projects, three in Brixton with the support of Lambeth Council and a fourth project in Homerton with Hackney Council. They have recently completed a fifth project in Vauxhall and are raising funds for sixth scheme in North Kensington working with Kensington and Chelsea Council. The projects installed a total solar PV capacity of 300kW through community share offers raising £375,500 largely from local investors. Shareholders of the co-operative receive a 3-4% return on investment and historically have also benefited from 30-50% tax relief.

The projects also generate a Community fund of £75,000 for further training opportunities and tackling fuel poverty in some of London's most deprived estates. Currently Repowering London is working with 55 young people via an internship and mentoring programme which trains young people at risk of exclusion in community energy. This is an accredited programme, which came out of a demand from local parents on estates to provide something for young people. The programme is offered to young people (16-19 year olds), who are lacking opportunities and role models and who may feel alienated from greater society, disengaged with education and uncertain of the future.

4.5 The Community Energy representatives said that this model is a 'win-win' business model: lower energy and carbon, and community funds for initiatives to reduce bills for those who need it most. Critically it creates community engagement and buy in for other social and environmental initiatives.

5 Pilots

5.1 The Council is currently exploring three different community energy approaches, which requires testing of different models, addressing the technical challenges and understanding the potential benefits. They all have a strong TRA or TMO who have expressed an interest, demonstrating existing community enthusiasm and buy-in.

5.2 Haddonhall project

Situated by the Bricklayers Arms roundabout, Haddonhall TMO has been working with South East London Community Energy (SELCE) to explore a scheme by which shareholders would invest in solar panels to be sited on the estate to generate income through feed in tariffs (FIT).

The TMO explained that the local residents were keen to use solar however they did not have the technical expertise so they asked SELCE to do an initial evaluation. The TMO / SELCE were recently awarded a grant from the GLA to do a technical mapping of the site to assess its feasibility. The initiative will be working on both installing solar and also reducing residents energy costs via an energy café providing advice over a tea and cake.

The Haddonhall business model intends to make use of the FIT to sell energy back to the grid and also incorporates working with a partner, such as Energy Local, to enable residents to access the cheaper solar energy from the site during the day through a green energy supplier. The other opportunity being considered is a combination of batteries and electric vehicle charge-points.

SELCE applied for Feed in Tariffs (FiT) by the pre-registration deadline of March 31 and are waiting to hear back to if their application was successful.

5.3 Juniper House project

Juniper House is a 5-storey block with 75 flats on the border with Lewisham. There is a mix of stock in the building, 61 of the flats are leased from the Council, the remaining 14 are privately owned. All tenants and leaseholders pay a service charge, a portion of which contributes towards communal energy costs.

Up until recently the block was managed by Juniper House Tenant Management Community (TMC) Limited, a community run cooperative. The operation has now been handed back to the Council and is in the process of being set up as a Tenant Management Organisation (TMO).

While a Housing cooperative (TMC), Juniper House accumulated over £30,000 in its Surplus Fund. With the ending of the cooperative, this money can be transferred to the Juniper House Tenants and Residents association (TRA) to be used on a solar project, however there are caveats: the money must be used to benefit all residents; both tenants and leaseholders.

Juniper residents have been developing plans to use this surplus to pay for the installation of Photovoltaic (PV) panels on the block's roof. Working independently, the TRA obtained electricity consumption figures and has worked with PV suppliers to develop proposals. Before the work can progress, the council needs to assess the implications of solar installation on the roofs.

Juniper House TRA's aspiration is for the solar energy to be used, in part, to power the communal energy needs of the estate and for this to lead to reduced leaseholder and rental charges. However, this is problematic as although tenant and leaseholders/ homeowners receive a separately itemised bill for communal energy, the calculations are done differently. For leaseholders/home owners, this is done based on the estate consumption, but tenants' charges are aggregated across the borough. While this makes it possible for leaseholders to directly benefit from solar, it means that under the present policy, council tenants would receive much less as the pooled arrangement means the saving from the solar would be distributed across all the borough's tenants.

The terms of the transfer of the £30,000 fund from the former TMO to the current TRA require leaseholders and tenants to be equitably rewarded, and this was also an important principle for Juniper House TRA. They also felt only a direct cash benefit would make the scheme attractive to residents and they considered the best solution would be for the council to amend the current pooling arrangements to allow tenants from blocks with solar to benefit directly from reduced charges, in the same way leaseholders are able to.

The roundtable discussed the advantages of applying for FiT however the Juniper House TRA did not pursue this option. This would have been difficult to accomplish without partnering with a community energy company as a TRA does not have sufficient legal standing as a 'Community Organisation' under the requirements of FiT, and nor does the Council meet the criteria. Eventually the Juniper House is planning to become a TMO, which will be an advantage if the estate wishes to pursue community energy under its own auspices.

5.4 Brenchley Gardens project

Located next to Honor Oak cemetery, SE23, the estate is comprised of 96 properties with a 50/50 split of council tenants: private owners. The TMO is keen to explore the options for renewable energy generation on the estate, which is composed of both blocks and houses and has a considerable amount of communal land. The work on sustainability is still in a development stage. They are considering:

- Roof Solar Panels;
- Green Roofs;
- Solar Powered Lighting;
- Insulation to Blocks of Flats;
- Composting (from flats).

6 BRE Group report

6.1 BRE Group was commissioned by the council to provide a technical evaluation of renewable energy on the three pilot estates and provide criteria for assessing future projects. As part of this work they also considered different models to take forward solar energy projects, specifically who would be the owner of the renewable energy, usually solar. This is a key issue for the Council to resolve.

6.2 Renewable Energy system ownership

Options include:

6.2.1 Self financing In this model the Council would own the solar PV and fund the works. Public sector bodies have access to low-cost, long-term infrastructure funding in the form of the Public Works Loans Board (PWLB). There are also a number of funding bodies and financial institutions that provide public sector financing for a wide range of projects, including solar PV with preferential rates for carbon reduction schemes. The advantages include potentially maximising the financial benefit from generation. The disadvantages are that the Council would need to develop a business case and technical capacity to do this. This option would also not be community-led, unless it decided to do this in partnership with residents such as those at Juniper House.

6.2.2 Third party ownership. In this model, ownership of the PV would be with a third party. BRE say third party ownership of PV assets has the potential to fix electricity prices for the landlord's supply and reduce expenditure. It would also realise a reduction in CO2 without any Council investment. Some options have the advantage of being easily deliverable as outside expertise would be brought in.

- Commercial third party:** Solar developers and investors (i.e. hedge funds etc.) offer opportunities whereby the Council enters into a Power Purchase Agreement (PPA) with a third party investor who manage the PV. These would deliver carbon reductions however would not normally be community-led or deliver further carbon reductions though fuel poverty work.

ii) **Council led third party ownership; there are at least two options:**

a) Special Purpose Vehicle (SPV). Since 2017, solar PV systems on non-domestic buildings can potentially attract an increase in business rates. As a result it has become common practice for owners of non-domestic systems to set up a SPV as a separate legal entity to take ownership of the installed system.

b) Set up an Energy Supply Company (ESCO) a commercial structure created to produce, supply and manage the local delivery of decentralised energy directly to LBS. There is the possibility of working with the GLA who are developing various models which can support this, such as Licence Lite.

iii) **Community Shared Ownership.** This is also a type of third party arrangement. LBS could open all or a proportion of the investment up to a community share scheme offered by Community Energy companies such as SE24, SELCE, Repowering London. Like other third party arrangements the council do not have to raise capital or develop extensive technical expertise as the community energy company is able to provide this. Shared ownership schemes provide other benefits to the community such as greater engagement and understanding of energy and environmental choices, and the ability to address fuel poverty through associated social and environmental schemes. They are also a close fit to the council plan commitment to be community led.

6.3 Evaluation of the three pilots.

The BRE report conducted a technical evaluation of solar on the roofs of the three pilot projects and the opportunities for reducing energy in the communal areas. They also considered current use of Combined Heat and Power in the pilot schemes.

BRE identified four stakeholders:

- Electricity consumer (Landlord/ TMO)
- Property owner (LBS)
- RE system owner (to be confirmed)
- EPC contractor (commissioned by RE system owner to install the solar PV system)

Their conclusion was broadly that most of the projects did not have sufficient demand from the communal areas to justify solar generation, and that initiatives to reduce communal energy consumption (LED lights and movements sensors) would be more cost effective.

However, the report is based on estimations for installation, and in the case of Juniper House, a council surveyor has not visited the property to examine the roof. As such it is unclear if the assumptions are correct and also if the roof can stand the weight. The report notes that while they do not think a solar array is financially viable at the moment, this could change if the solar installation was combined with other major works requiring scaffolding. The Juniper House TRA report to the Commission said scaffolding was already in place. The report also did not factor in the desire from the Juniper Houser TRA residents to invest their own capital, arising from the former

cooperative, into renewables and as such the scheme is unlikely to draw significantly from council capital. It is also not only a cash equation for the residents involved; they are also looking for an investment that will reap social, community and environmental benefits.

When considering the Haddonhall / SELCE business case the BRE report did not factor in the model that is being used by SELCE / Haddonhall to sell solar directly to leaseholders & tenants on site through a third party local supply model and/or electrical cars. This could be because BRE Group does not identify residents as stakeholders in their assessment and/or because this is an emerging technology. This is weakness in the BRE report as the Council Plan commitment prioritises reducing residents' energy bills, and the SELCE model, if successful, would enable this directly through a cash reduction on energy bills.

6.4 Technical criteria

The report provides a lengthy list of technical criteria which will be useful for the Council if it decides to either go down the self-financing / SPV route, or to help the council evaluate the proposals submitted by third parties, such as Community Shared Ownership schemes, if it decides to pursue this route.

7 Feed in Tariffs (FiT) and post FiT viability

7.1 The Government's Feed-in Tariff (FiT) was first launched in 2010. It was designed as model to encourage and enable homes and businesses to generate their own renewable electricity via feeding green energy into the grid.

Advocates for green energy say the scheme has made a huge contribution to lowering energy costs reducing carbon and that the 759,000 sub-4kw typical rooftop solar installations alone will save 771,646 tonnes of carbon per year. This is the equivalent of the carbon captured by 1.38 billion trees annually.³

The original tariffs were much higher, 40p per kWh; and this dropped to 5p per kWh, before ending on 31 March 2019. The justification for this drop was the falling cost of installing solar. However, the scheme has now ended before viability has been comfortably assured, with the range of sites that previously could have been used dropping away as FiT has reduced⁴ and now ended.

7.2 The replacement will be a new Smart Export Guarantee (SEG), which will require large suppliers to buy solar generated electricity at a published price. The 'smart' part refers to the likelihood that the tariff will be based on the requirements of the grid, so more will be paid when demand is at the highest, and less when demand is lower. The SEG is under consultation and is due to replace the current export tariff arrangement sometime this

³ <https://www.goodenergy.co.uk/blog/2019/03/29/the-feed-in-tariff-is-dead-this-is-how-small-scale-renewables-can-live-on/>

⁴ A manifesto for community energy reported that the scrapping of the strategy and the reduction in feed-in tariffs means community energy groups are now struggling to develop viable projects. In 2017, at least 66 community projects either stalled or failed.

summer⁵. This means there is a gap in moving from one business model to the next. SEG will also only last for a finite period, and is likely to be only one component when assessing future viability. The uncertainty surrounding government solar policy was flagged up during the Housing & Environment Commission roundtable as an ongoing challenge for Community Energy projects.

- 7.3 Other sources of support will become an important part of the mix. The London Mayor is committed to solar and is currently providing grants for feasibility studies, as well as developing energy supply models. Islington have utilised carbon offset from development schemes to support solar, and Lewisham is developing a similar scheme.⁶
- 7.4 In December 2016, Southwark Council pension fund made a landmark commitment to divest from fossil fuels and increase investment in renewables. Following more than a year of consultation with members (employees), deliberation and work with community groups the council announced a decision to divest £1.2bn fund from fossil fuels. This was a decision based not just on the council's and member ethical concerns and support for increased renewable investment, but also evidence that climate change and significant investments in fossil fuels present a long term financial risk to our fund, and as such a switch was wholly consistent with the council's fiduciary duties as pension fund trustees.

The roadmap to meet this commitment was incorporated in the updated Pensions Investment Strategy, published in 2017. This includes a target of 5% of the fund to be allocated to sustainable infrastructure, providing a possible source of funding for solar and other renewable energy projects.

- 7.5 Repowering London reported that projects are still viable but they will need to be more selective with their sites, and in some cases will be looking for a proportion of the capital finance which can be secured through grants, carbon offset funds, and donations without diluting the principles of community ownership, control and benefit.

7.4 Electricity supply models and Community Energy

Ensuring the electricity supply model works with community energy is likely to be an important component of assuring future viability. The national grid is changing as we move from high intensity fossil fuels to renewables and we are seeing the development of distributed, decentralised and digitised energy system. Community Energy advocates are calling for more innovation and support for a supplier hub model to allow community energy groups to operate as local energy suppliers.⁷

Both SELCE and Repowering London are undertaking work on local energy supply models.

Repowering London has three trials, looking at local electricity supply models. These are particularly focused on providing solar energy directly to residents in multiple occupancy communal housing. The trials are working with different partners; Cooperative Energy; EDF,

⁵ <https://www.gov.uk/government/consultations/the-future-for-small-scale-low-carbon-generation>

⁶ https://www.london.gov.uk/sites/default/files/carbon_offset_funds_guidance_2018.pdf

⁷ https://www.green-alliance.org.uk/resources/Community_energy_manifesto.pdf

and Verve, a technical partner looking at blockchain and peer to peer sales. Two were part of sandbox trials which gives some flexibility with regulations⁸; these are being scrutinized by Ofcom.

SELCE plan to working with a local energy supply partner on the Haddonhall estate to improve viability and enable the residents to directly benefit from the cheaper solar energy.

The other opportunity they are considering is powering electrical cars, which could complement the council commitments to reduce carbon in the transport system, improve air quality and reduce the parking provision in new developments. There could be opportunities through the Great Estates programme to pilot this work.

7.4.1 Emerging models

Ofgem's Future Insights Series on Local Energy in a Transforming Energy System states that local energy, and the overlapping concept of community energy, are growing features of the British energy system. Local energy projects have a range of characteristics that often cut across traditional sector boundaries such as generation, supply and consumption. They have a common desire to involve local communities in delivering energy outcomes and, in many cases, contribute to broader local social, economic and environmental objectives.

Ofgem outlines five models:

- i) **Local consumer services** - these aim to improve energy outcomes for local people by energy efficiency schemes and collective switching and purchasing schemes. The council currently has a contract with LASER through which it makes significant energy savings on its energy purchases and is working in partnership with LEP (London Energy Partnership) to procure a new contract for post 2020. Officers are also considering the Mayor of London's RE:NEW programme which provides free and subsidised technical support for social housing providers within Greater London, on energy efficiency and sustainability issues related to carbon reduction. RE:NEW comes to an end on 30 April 2019 and will be replaced by a similar programme (the London Homes Energy Efficiency Programme [LHEEP]) with a more focused scope.
- ii) **Local generation** – Brixton Energy, a Repowering London initiative on a Lambeth estate is given as an example by Ofgem. Haddonhall would fit in this category.
- iii) **Local supply** - Models aimed at supplying local communities with affordable / low carbon energy. Robin Hood Energy as an example. This is the first not-for-profit energy company, owned by a local authority, set up to tackle fuel poverty and to help give people a cheaper, and more helpful alternative to the Big Six. Launched by Nottingham City Council, they aim to lead the way in reducing fuel poverty. 100% of the electricity provided is certified as being sourced from UK based wind and solar generators. The Greater London Authority is developing a License Lite supply arrangement and its Phase 2 FlexLondon Challenge is working with public and

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https://www.ofgem.gov.uk/system/files/docs/2019/02/enabling_trials_through_the_regulatory_sandbox.pdf

commercial partners to develop clean and smart, integrated energy systems utilizing local and renewable energy resources.

- iv) **Micro-grid** The Centre for Alternative Technology has a renewable powered micro-grid in Wales exporting to the grid.
- v) **Virtual private networks.** Projects in this archetype are not widespread, often in concept design or trial phase and vary in scale. Energy Local, who Haddonhall intend to partner with, is a pilot in Bethesda, North Wales, matching local consumer demand to local generation to minimize imbalance and provide lower tariffs to consumers through a licensed supplier. A national example is [Social Energy](#) which uses hi-tech software and battery hardware to store and trade energy with the grid dynamically.

Many of these models could enable the council to meet its commitment to reduce resident energy bills through community energy.

In particular, technological solutions to the supply of electricity directly to residents on estates, have the potential to lower resident fuel bills and improve scheme viability. Currently residents on estates are paying approximately 13p per unit of electricity, however even under FiT the schemes generate only 4p by selling to the grid. Selling cheap energy directly to residents could also solve the challenge that Juniper House residents have faced when trying to ensure that all residents are able to realize a cash benefit. This is, however, still an emerging technology in the experimental stage.

8 Conclusions

Currently the renewable community energy sector is in a period of uncertainty as it moves from the FiT model to an alternative model. The future model is likely to involve a combination of the SEG, local electricity supply models, grants, access to subsidized capital from carbon offset funds and other sources of finance, such as pension renewable infrastructure funds, community stock investment and donations.

The most common, tried and tested form of community energy is solar delivered by a Community Energy social benefit company. Of the three pilot projects, Haddonhall, which has been progressed in partnership with SELCE, looks most likely to be able to realize a renewable project in the near-term, although this cannot be guaranteed at this stage.

Going forward the Council will need to decide what kind of model, or models, it wishes to pursue in order to deliver on its Council Plan commitment.

Encouraging TMOs and TRAs to work with a third party, such as local Community Energy companies, is most likely to see projects getting off the ground quickly as they have technical expertise to take forward projects and a financial model to raise the necessary capital. They also have tested ways to reduce energy bills via projects to reduce fuel poverty and an emerging model to reduce estate residents bills directly through new energy supply models. The ethos of Community Energy community benefit companies is also most closely aligned to the local authority and the Council Plan commitment to deliver community led renewable energy initiatives.

As well as estates there is a significant opportunity to realize the benefits of Community Energy in local schools and the council could promote this opportunity in partnership with community energy companies, where viable post FIT.

Energy reduction is one of the most effective ways of reducing carbon, with estimates that every £1 pound spent will realize £99 in savings and associated carbon reduction⁹. Initiatives like the Mayor of London's London Homes Energy Efficiency Programme [LHEEP] would provide technical support to enable project planning of the council social housing portfolio. This is likely to lead to significant savings in carbon, as well as a positive impact on fuel poverty, and residents' fuel bills.

Longer-term, the Council may wish to pursue setting up either a SPV and or an Energy Supply Company (ESCO) to deliver solar and other renewable energy projects, such as Combined Heat and Power. This would take significant organizational and technical investment, however it is likely to both contribute to reducing carbon and potentially generate money as we move away from an high intensity fossil fuel grid to renewables, and the associated development of distributed, decentralized and digitized energy system.

9 Recommendations

1. Encourage TMOs and TRAs to explore community energy through the Great Estates programme, in partnership with local Community Energy community benefit companies. This could also directly link with the development and roll-out of electric vehicle charging points.
2. Join the Mayor of London's 'London Homes Energy Efficiency Programme' [LHEEP] and use this to plan energy efficiency on estates and assist project planning the best time to fit renewables , where feasible.
3. In relation to the existing pilot projects, we would encourage the Council to recognize some of the limitations of the BRE studies, and factor in emerging models such as that being proposed by SELCE with Haddonhall. The enthusiasm and desire from residents to make all three projects work must be built upon.
4. Work with other parts of the borough estate, particularly schools, to support the development of Community Energy solar projects.
5. Look at the opportunities provided by carbon offsets, particularly from Southwark's own regeneration schemes, and possibly also from the Pension Fund, to invest in community energy.
6. Scope out the possibility for Southwark to develop a SPV and/ or local electricity supply model to support solar and other renewable energy projects, including Combined Heat and Power.

⁹ SELCE presentation to Public Policy Exchange event – ref to be expanded.