

Environment Commission Briefing

Officers have been asked to provide a brief report for members of the Environment Scrutiny Commission ahead of their roundtable with stakeholders. This briefing covers:

- The council's strategy to decarbonise homes including potential funding streams.
- Improving energy and environmental standards in new developments.
- The council's strategy to increase renewable energy generation including links to heat and energy networks.

Decarbonising Homes

Southwark's approach is set out in the council's strategy and action plan which it adopted this summer. Officers are currently working through the actions in the plan to develop a programme to take this work forward. The strategy sets out the emissions pathway that the borough has to take to reach net zero. The section below summarises details from the action plan on housing and our priorities for green homes.

Within the borough 42% of all housing is social housing. The council is proud to be the largest landlord in London with over 52,500 properties and 14,500 leaseholders with a further 17,000 homes owned by housing associations.

Southwark's emissions from buildings have been modelled to an ambitious pathway of decarbonisation. This includes measures relating to building fabric, heating systems and new building development across the borough's domestic and non-domestic buildings. To deliver this, there is an urgent need to move away from gas boilers as the primary source of heating in the borough.

The council's objectives around sustainable new build developments and low-carbon technologies relate closely to these emissions. To achieve the overall reductions needed for this model, it requires:

- As many homes as possible within the borough are connected to the SELCHP network or an equivalent district heating network. This includes the 17,000 or so homes currently on district heating networks, plus around 50% of other homes. The remaining are served by heat pump systems or other electrified heating networks by 2030. Any SELCHP expansion will require detailed feasibility, including a full legal assessment of increased connection to homes.
- Improved building fabric performance to increase energy efficiency to reduce energy demand. This can be achieved through ensuring all single-glazed windows, all lofts without insulation and all unfilled cavities and solid walls are insulated.

The emissions modelling that the council has undertaken is supported by a decline in emissions because of the discontinued use of fossil fuel heating and cooling systems. As fuel consumption switches from gas to electricity, the incurred grid emissions from

additional heat pumps (across new build, retrofit and SELCHP) are also included. There are some residual emissions which are the result of the required use of the national grid to power the borough's electrified heating systems.

Work is already underway to deliver this greener buildings and homes. The themes and goals below show what we need to achieve to reach our vision together with the immediate actions that we need to take. Alongside this work, we will continue to develop new actions to ensure we stay on track to reach our goals and make the carbon saving.

Theme	Goal	Progress	Immediate Actions
A. Planning regulations that centre carbon neutrality	1. Policy is used to improve energy efficiency standards in existing buildings during redevelopment or retrofit when planning is required	Low carbon zone in Peckham, funded by Mayoral investment, gave support, funding and energy efficient improvements to local buildings.	Explore options for energy performance standards in the early review of the New Southwark Plan
	2. Policy is used to drive higher energy efficiency standards in new developments		Review planning policy to support the retrofitting of heritage buildings to reduce carbon emissions.
		New carbon price of £95 per tonne for non-residential and residential development has been implemented and will be reviewed.	Embed building technologies such as green roofs, facades and cool roofs to reduce carbon emissions and improve biodiversity and local air quality.
			Explore options in the early review of the New Southwark Plan for encouraging the use of recycled materials in new development as a means of reducing the embodied carbon of new builds.
			Explore options for standardised measuring frameworks to ensure compliance with planning policies for improved energy efficiency in all new build properties.
			Approve the carbon offset fund within Southwark in Autumn 2021, including governance structure and approach to prioritising spend.
B. Buildings minimise their carbon	1. Guidance and support are made available to improve	Currently working with BEIS and Energy Hubs to secure funding to	Highlight best practice and leading examples of decarbonised buildings.

emissions and maximise their energy efficiency.	energy efficiency across the borough	improve some of the least energy efficient properties in the borough.	Publicise opportunities associated with improving energy efficiency standards and provide communications to owner-occupied homes.
	2. Residents and businesses improve the energy efficiency of existing buildings		Target energy saving advice and support households experiencing fuel poverty.
			Raise the minimum energy efficiency standards (MEES) from the current D up to a C for private rented properties and improve its enforcement to capture non-compliance, providing support to tenants and landlords where needed.
C. Low-carbon technologies and practices are encouraged within the borough's buildings.	1. Maximise the use of low-carbon technologies for new and existing homes	Work is already underway to expand the SELCHP network.	Identify households not currently serviced by district heating that can be switched onto SELCHP or equivalent district heat system. Alongside this Identify areas of the borough that cannot be served by heat networks and must look at communal ASHP, CHP or secondary source heat pumps.
		Air source heat pumps will be installed in four libraries throughout 2021, which will replace the existing gas heating systems.	Provide specific policy and guidance to households and businesses relating to the transition onto heat pump technology and other low carbon technology.
D. Decarbonise operational council buildings.	1. Lead by example by making all operational buildings carbon neutral	All council buildings now run on 100% renewable electricity. We are moving to green gas for operations, and transition is underway to move communal areas in housing and schools over by 2022.	Develop an advocacy campaign calling on national government to establish a Green Homes Investment Fund and request changes in taxation (e.g, VAT) to make changes more affordable
	2. Low-carbon technologies and practices in council-owned buildings		Carry out energy audits on the largest energy consuming properties in the council's portfolio to tailor support and improvements.
			Ensure all council buildings are moved to 100% renewable energy tariffs.
			Start the roll out and installation of heat pumps within council-owned/affiliated properties

	3. Reducing energy demand and cutting energy waste in council-owned buildings	<p>Street lighting team have designed and installed over 4000 LED lanterns across the borough. All future lighting will be LED.</p> <p>Our modern lift motors and controllers are now low energy producers that improve efficiency.</p> <p>The council has begun a process of consolidating operation buildings, substantially reducing energy consumption.</p>	Replace energy inefficient appliances and lighting in council operational estate.
E. Decarbonise council housing.	1. Raise the energy efficiency of social housing with an EPC rating of D or lower	<p>Improvements already underway including replacing gas burning boilers on the Wyndham, Consort and Newington Estates with modern water source heat pumps.</p>	Prioritise energy efficiency improvements and maximise funding for the worst-performing social housing properties, i.e., those with EPC rating D or lower.
	2. Replacing gas with low-carbon technologies	<p>The Tustin Estate has seen new insulated roofs and double-glazed windows installed to the three tower blocks, significantly improving their energy efficiency.</p>	Increase the number of council-owned homes to the extended SELCHP network where feasible.
		<p>Ann Moss Way development is an ongoing pilot project to investigate whether carbon neutral council homes can be developed to Passivhaus standard and the cost of doing so.</p>	Continue to roll out of heat pumps within council housing stock and replacement of individual gas boilers.
			Work with residents to develop decarbonisation plans for every estate in the borough.

Beyond the council's own actions, there must also be a focus on what other partners and stakeholders can action themselves, from a central government to resident level. Central government need to significantly increase the level of funding available for renewable heat technology and for raising the thermal efficacy of existing buildings. Businesses can identify and maximise opportunities to install green roofs, facades and cool roofs on buildings, while residents can identify opportunities for renewable heat in properties. Both groups can also continue to engage with the council on energy efficiency standards and other behaviour change initiatives.

Sources of Funding

As the council's strategy highlights, the cost of work that needs to be delivered to make buildings in the borough carbon neutral is considerable. There is a significant capital funding gap for the required level of retrofit and new build to progress towards carbon neutral. In total, we estimate that £2.6bn of capital expenditure is required. Funding required would need to be a combination of the public sector, private sector and residents.

We estimate the required capital expenditure is:

- £603m relates to domestic insulation.
- £632m relates to domestic heating systems being added to the SELCHP network.
- A further £617m relates to domestic heating systems being updated with heat pumps.
- £710m relates to heat pumps in non-domestic buildings.

Additional revenue funding would also be required, to support the delivery of such a substantial change in how we build and heat our homes. These costs are not included above, but would help ensure enforcement of new building standards, alongside the promotion and awareness of a move away from domestic and non-domestic boilers.

There will also need to be a substantial upskilling of technical knowledge, in the building and heating industries, to allow this shift to happen. Investment in green jobs through a green new deal is therefore essential to ensure that Southwark has the skills and experience to deliver this change.

There are some sources of funding available and others which are due to come on-stream. But these fall short of what is required.

In addition to money which the council and other landlords will need to spend on their housing stock, Government will also need to find ways to retrofit private homes if boroughs like Southwark are to be carbon neutral.

Current and future funding includes the following **energy efficiency funds**:

- Energy Company Obligation (ECO3) – this covers a range of energy efficiency measures, mainly insulation. It is accessed through installers normally and has been applied to a few schemes over the last couple of years.
- Green Homes Grant (GHG) – Closed March 2021. This was for private homeowners so not applicable to LBS housing.
- GHG Local Authority Delivery (GHG LAD) – We applied for LAD2 and our proposal was accepted to carry out window replacements in tenanted street properties. The GLA, as lead member of the consortium, has just pulled out we are awaiting an update on further developments.

- Social Housing Decarbonisation Fund (SHDF) – we applied recently for our Wyndham and Comber QHIP project and should hear back by the end of December. Further rounds of SHDF funding are expected next year and the year after. This is a significant funding opportunity

Current and future funding includes the following **low carbon heating and heat network related funds:**

- Renewable Heat Incentive (RHI) – We have accessed this for our Water Source Heat Pumps projects at Consort, Newington & Wyndham
- Heat Networks Investment Programme (HNIP) – We supported a Veolia application for this for the SELCHP extension. Offer made, grant negotiation is ongoing.
- Green Heat Network Fund Transition Scheme (GHNF TS) – We supported a Veolia application recently as a backup for commercialisation funding source for SELCHP extension. Awaiting decision.
- Green Heat Network Fund (GHNF) – main scheme opens to applications from April 2022. Potential to apply for future SELCHP expansion and/or further heat pumps to serve our heat networks. Significant opportunity.
- Heat Network Efficiency Scheme Demonstrator (HNES) – We submitted applications for 5 sites last week and should hear back by end of November. We are hoping there will be a bigger 'main scheme' in future years but this is still to be confirmed.
- Newly announced £5,000 heat pump grant for private homeowners from April 2022 – details to be confirmed.

Energy Standards in New Developments

The New Southwark Plan (NSP) has been prepared to meet the statutory national target of reaching net carbon zero by 2050. It sets out targets for operational carbon reduction onsite for major development to 100% for residential and 40% non-residential. This goes beyond the onsite performance requirements in the London Plan (2021).

The NSP now highlights where climate change mitigation and adaptation are considered in the requirements for new development. In terms of climate change mitigation, amendments have been made to P68 Sustainability Standards to the heating and cooling hierarchy, and to P69 Energy to clarify how carbon reduction should be met on site. Both of these policies will be revisited in the NSP Early Review to secure higher carbon reduction in new development through a fabric first approach and more detailed requirements for new development. In terms of climate change adaptation, main modifications have been included to P59 Biodiversity to increase biodiversity in the borough.

In light of the council's climate emergency declaration, an Early Review of the Plan's policies has already commenced, prior to its February 2022 adoption, to address how new development must do even more to assist in achieving a 2030 net zero carbon target while delivering our target for new homes and jobs.

The objective of the Early Review will be to propose new policies and amend existing policies in the New Southwark Plan so that new development can go even further to deliver climate change mitigation and adaptation. The Planning division is working with the council's Climate Change Team to ensure that it delivers the Climate Change Strategy, as the Early Review task is also defined as an 'Action-Point' in the council's adopted Climate Change Strategy (2021). We will also explore the creation of targets for embodied carbon in construction to meet net zero targets in new developments in the NSP Early Review.

In terms of development management, planning officers negotiate improvements to the design of proposals through the planning application process to secure higher carbon reduction onsite, improved building and energy efficiency performance, increased renewable energy delivery onsite, and climate change adaptation and environmental improvements, such as flood risk, overheating, air quality, biodiversity and green infrastructure.

The Planning Division consults on planning policy documents and planning applications in line with the draft Statement of Community Involvement.

Renewable Energy Generation

The council's climate strategy outlines our approach to generating energy from renewable source to reduce our dependency on fossil fuels.

The New Southwark Plan Policy P69 Energy requires that all development minimise carbon emissions on site through energy efficient design and construction, low carbon energy supply and on-site renewable energy generation and storage. It sets out an energy hierarchy which encourages the use increase use of renewable energy, specifically PV panels on new development.

P69 Energy also sets out a requirement for new development of a certain size to connect to or futureproof a connection to a current or planned District Heat Network such as the SELCHP District Heat Network for schemes in and the Old Kent Road.

In addition:

- Major development should be carbon neutral (100%).
- Major non-residential development should meet this by aiming to achieve at least 40% carbon reduction onsite against 2013 Building Regulations Part L Standard.
- Major residential development should aim to meet 100% carbon reduction onsite against 2013 Building Regulations Part L Standard.
- For any shortfall not achieved onsite, applicants should pay a financial contribution per ton for carbon offsetting offsite of any carbon not reduced onsite.
- Proposals of less than 10 units and equivalent floorspace for non-residential are not subject to these requirements; we aim to address carbon reduction onsite for small sites in our early review of New Southwark Plan.

We have carried out emissions modelling looks at emissions from electricity consumption and local PV installations. To be carbon neutral we have considered measures such as the installation of local PV and progress towards a nationally decarbonised grid. Also considered within this projection is the improved energy efficiency of lighting and appliances, as well as a transition to electric cooking systems.

These modelled emissions relate to the local uptake of renewable energy as well as reducing energy wastage, both of which are key objectives for the borough and relate closely to action themes.

To deliver the energy savings that we require to meet our 2030 target we need:

- A rapid de-carbonisation of the national grid by 2030.
- Solar PV installations are maximised. We estimate 23,000 homes are retrofitted with 4kW systems, along with installations on non-domestic buildings equivalent to around 20% of overall floor-space.
- All gas hobs and ovens are replaced by electric equivalents, all non-LED lamps are assumed to be replaced by LED equivalents, and the average annual household consumption from appliances falls around 30% against a 2016 baseline.

We estimate the capital cost for this is £238m, however this relates to physical changes within the borough around renewable energy generation and improved energy efficiency. It does not include the broader cost of increasing the share of renewables used to power the national grid, nor does it include increased revenue costs at a local level for necessary research and feasibility, or behaviour change initiatives.

In addition to capital costs, we would expect revenue costs including research and feasibility studies and providing support for businesses and residents to access funding to carry out works.

Our priority actions, as set out in the council's strategy and action plan are:

Theme	Goal	Progress	Immediate Actions
A. Improve renewable energy infrastructure.	1. Maximise the opportunity for renewable energy installation and storage	Initial feasibility work completed into potential for solar PV on council housing.	Review renewable potential across the borough and identify barriers and enablers through a renewable energy feasibility study.
	2. Full access to renewable energy from the nation grid		Work with the Mayor of London to lobby government on the transition to a zero-carbon national grid.
B. Move towards green energy for businesses, residents and other organisations	1. Increase proportion of residents and organisations using renewable energy	Initial feasibility work completed into community energy projects.	Promote resources which are available for residents, businesses, and other organisations which make options for grants, loans or subsidies to install renewable technology clear.
	2. Businesses use economies of scale to maximise the uptake of renewable energy		Business Forum to consider options to coordinate and aggregate investment in energy infrastructure.
	3. Installations of renewables are prioritised and encouraged by Council policy		Explore increased support of renewables within early review of New Southwark Plan.
C. Tackle fuel poverty by promoting and providing accessible energy alternatives.	1. Specialist support is provided to lower-income and fuel-poor households	Southwark and Lewisham councils are working together to provide home visits to give guidance on reducing energy and saving carbon, to help address fuel poverty.	Provide direct guidance and support to fuel poor and lower-income households to leverage funding.
			Provide guidance and support to fuel-poor and lower-income households to switch to renewable energy providers (i.e., London Power).

	2. Promote community renewable technology projects		Explore the feasibility of community renewable technology projects, such as through the co-operative ownership model, to understand if these can help tackle issues associated with fuel poverty.
D. Reduce energy demand and cut energy waste.	1. Shift to low carbon and energy efficient appliances	The council delivered a solid fuel awareness raising project last year to build up to the new Environment Act requirements.	Provide guidance and support to residents and businesses on low carbon energy efficiency.
	2. Increase use of smart controls in homes and businesses		Work with energy providers to provide smart controls for gas and electricity usage across Southwark's households.
E. Boosting renewable energy.	1. Solar PV capacity is maximised in the borough	Completed a "Heat mapping and master planning" exercise which included development of a ground source heat pump map showing potential for this technology around the borough. This information is available for developers / private sector as well as the council.	Develop a strategy to maximise the installation of solar panels on council buildings. Progress the feasibility of a borough solar panel park.
	2. Council operations drive the development of renewables		Increase the requirements for renewables in the Local Plan to scale with the projected increased demand for electricity.

The council is trying to link additional heat loads to the SELCHP network. This is a low carbon heat network. Most of our existing heat networks are still gas boiler led, so at present we are not working to increase the load of these networks. Longer term, if we replace gas boilers with low carbon alternatives on local heat networks, we could explore expanding these networks to increase the homes that draw heat from them.

Officers in our new homes and planning teams are working to get both Council and non-council new developments to connect to both the existing SELCHP network and the proposed extended network. This has been successful and we have a number of new developments planning to connect to the SELCHP extension when it is built. The existing SELCHP network in the Bermondsey area is also actively recruiting new connections – both Council (e.g. the new and expanding buildings on the Abbeyfield estate, and some new builds at Rouel Road) and non-Council (Grosvenor are strongly considering it for a big development, plus there is an academy looking at connecting).