

Item No.	Classification: OPEN	Date: 20 September 2011	Meeting Name: Cabinet
Report title:		Energy and Carbon Reduction Strategy	
Ward(s) or groups affected:		All	
Cabinet Member:		Cabinet Member for Transport, Environment and Recycling	

FOREWORD – COUNCILLOR BARRIE HARGROVE, CABINET MEMBER FOR TRANSPORT, ENVIRONMENT AND RECYCLING

The burning of fuels to generate electricity and heat, or power travel, releases large amounts of carbon dioxide (CO₂) into the atmosphere, which is widely thought to be a key contributor to gradual climate change and more frequent extreme weather conditions around the world.

The UK is a net importer of oil and gas, making it increasingly reliant on the relatively few volatile countries with most of the world's oil reserves. In addition, wide-scale closures are planned for both the UK's ageing nuclear plants and many larger coal and gas plants.

The UK government has committed to produce 15% of total energy demand (power, heat and transport fuels) via renewable sources by 2020 meaning a dramatic seven fold increase from 2008 levels. Since on a large scale, it is easier to generate electricity than heat or fuel used for transport from renewable sources, the bulk of this shift will come from the way the UK generates electricity. Today 75% of electricity comes from coal and gas with only 6% coming from renewables, by 2020 this will need to be around 30% if the government is to meet its targets

The Council has two distinct roles to play in reducing CO₂ emissions in the borough; to lead by example and reduce its own energy use; to encourage others within Southwark to reduce their carbon emissions. This report sets out how the Council will do both.

In 2006, the Council set itself an highly ambitious target of an 80% reduction in carbon emissions by 2050. Whilst much work has been undertaken to date, as set out in sections 20 to 34, of this report, to date, little impact on borough emissions has been achieved. This report therefore recommends interim targets for carbon reduction for both the Council's emissions and that of the borough as a whole, up until 2020, to help track progress towards this aspiration.

RECOMMENDATIONS

1. That Cabinet notes the different drivers for Carbon Reduction in Southwark and the work undertaken to date including the green audits of the Council.
2. That Cabinet approves the proposed interim carbon reduction targets set out in section 16.
3. That Cabinet approves the recommendations for further action set out in the body of this report and the Carbon Reduction Action Plan set out in Appendix One

REPORT STRUCTURE

4. The structure of this report is as follows. Firstly under background information, emissions in the borough and by the council are described, alongside the statutory context. Details of what

has been achieved in the borough so far in terms of carbon reduction is set out in paragraphs 20 to 34 of the report along with some recommendations as to ongoing work or future action. From paragraph 35 to 66 what further action the council should take to reduce its own emissions is described and from paragraph 67 to 102 the report sets out what can be done to reduce emissions in the borough.

5. All of the recommendations from the report are captured in the final table attached as appendix one which sets out a blueprint for future action to achieve the emissions targets recommended in this report

BACKGROUND INFORMATION

6. Carbon is emitted when fossil fuels are burnt. The table below gives a breakdown of where carbon emissions come from in the borough.

Sources of emissions in Southwark

Built Environment	84%	Transport	16%
Work places	54%	Cars and motorcycles	8%
Homes	30%	Freight	4%
		Public transport	3%
		Taxis	1%

7. The next table shows where the authority's emissions come from and their contribution to the borough's overall emissions.

Southwark Council's emissions of CO₂

Source	% of Council emissions	% of Borough emissions
Council Housing	94%	12%
Schools and Academies	3%	1.5%
Leisure Centres	1.5%	0.5%
Council Offices/depots	1.5%	0.5%
Total	100%	14.5%

The Cost of Carbon Dioxide

8. At current prices, it costs the Council £145 to emit one tonne CO₂ of (£160.00 in electricity charges, or £130.00 in gas charges) and this will increase by £12 per tonne in 2012 due to the new Carbon Reduction Commitment tax.

Statutory Compliance

9. The Climate Change Act 2008 legislated for a reduction in UK carbon emissions and set legally-binding carbon targets of 34% reduction by 2020 and 80% reduction by 2050 (compared to 1990) on the UK Government.
10. To meet these, the Government aims to deliver a 22% reduction from homes and 13% reduction from workplaces by 2022 across the country (compared with 2008 levels).
11. Local government has a key role in delivering this reduction. This was formalised for the first time in 2008, when Local Authorities became obliged to report on the following contributory indicators:
 - **NI186:** Per capita reduction in CO₂ emissions in the Local Authority area (from 2005 baseline)
 - **NI 185:** Percentage CO₂ reduction from local authority operations (from 2008/9 baseline)

- **NI 187: Tackling fuel poverty**: Percentage of people receiving income based benefits living in homes with a low and high energy efficiency rating.
 - **NI 188: Adapting to Climate Change**: this required Local Authorities to embed the management of climate risks and opportunities across all levels of services, plans and estates.
12. As a Local Planning Authority, the Council is further obliged to minimise the impact of new development in the borough.
 13. The Coalition Government, following the withdrawal of the entire suite of Local Government indicators, has now confirmed the data suite Councils have to report on and this includes only its own emissions (NI 185) and the new Carbon Reduction Commitment legislation. In addition, area wide carbon budgets (as piloted by London Borough of Barnet) are currently being discussed as part of the government's new Energy Bill.
 14. Southwark Council's Executive of December 12th 2006 committed to reduce borough-wide CO₂ by 80% by 2050 (on 2003 levels). Since then climate change has risen considerably up the political agenda. The UK government has set itself legally binding reduction targets (34% by 2020 and 80% by 2050 on 1990 levels) and a new set of policies and financial mechanisms have been developed to effect the change required. These are explained later in this report.
 15. The local target to reduce borough emissions by 80% (on 2003 levels) was adopted after an independent modelling exercise suggested that the reduction could be achieved by exploiting all cost effective energy efficiency measures, a widespread uptake of renewables and strategic intervention by the Council and partners to develop new decentralised energy networks powered by combined heat and power units. It concluded that the most cost effective means of achieving this would be by a borough wide heating system served by a number of Combined Heat and Power (CHP) based heat sources. This would be complemented with largely building-integrated, renewable energy systems and a range of energy efficiency measures to the existing stock.
 16. Since then, the economic downturn has occurred and little movement has been recorded in the level of borough emissions. The target set in 2006 was highly ambitious and based on optimistic assessments of the various energy reductions scenarios in existence at the time, and the capacity of the council and partners to deliver. Whilst the 2006 target remains the Council's long term goal, this report proposes some more realistic interim targets, which reflect the current financial climate and a clearer view of the energy reduction measures that are implementable in the medium term. The proposed new targets are set out in the right hand column of the table below.

CO₂ Baseline data

	Baseline (tCO ₂)	Current (tCO ₂)	Original target	Percentage Reduction to date	New proposed target
Council – operational estate and schools (2008/9 baseline)	41, 036	37, 441	N/a	8.4%	26.6% reduction by 2016
Council Housing (2005 baseline)	202,800	187,850	N/a	6.7%	15% by 2022
Borough (2003 baseline)	1, 690 000	1, 671,020	80% reduction by 2050	1.1%	22.4% reduction by 2020

KEY ISSUES FOR CONSIDERATION

17. The data set out in sections 6 and 7 above demonstrates that the Council has two distinct roles to play in the drive to reduce CO₂ emissions within the borough. Leading by example and reducing its own emissions is important but with 86.5% of the borough's emissions outside of the Council's direct control, it also needs to take on a Community Leadership role if substantial reductions are to be realised.
18. Various initiatives and funding streams exist and can be accessed by the Council to reduce both its own CO₂ emissions and that of the borough as a whole. Please see appendix two at the end of this report for full details of these.
19. The table below summarises the schemes available or planned and where they could be targeted if appropriate.

CO ₂ sector	Supply side	Demand side	
		National	Regional
Workplace emissions	Decarbonisation of the grid	CRCEES (CO ₂ tax)	RE:FIT (to refit workplaces)
	FITS (preferential tariff for electricity generating renewable)	Green Deal (pay as you save scheme for retrofitting measures)	
Domestic	RHI (preferential tariff for heat generating renewables)	Green Deal (as above)	RE:NEW (to refit homes)
		Energy Company Obligation (ECO) (to subsidise solid wall insulation)	
Transport	EU legislation on vehicle efficiency improvements Renewable Fuel Obligation		C40 (support uptake of electric cars)

PROGRESS TO DATE

20. Current data indicates there has been a 1.1% reduction on the borough's 2003 baseline position. Although this looks disappointing, it masks an increase in emissions due to a change in the way that data was measured in 2008. The government collected data between 2008 and 2011 shows a 1.1% reduction in CO₂. A great deal of work has already been carried out by Southwark to reduce CO₂ emissions. Some of this work is detailed below.

Regeneration and Planning

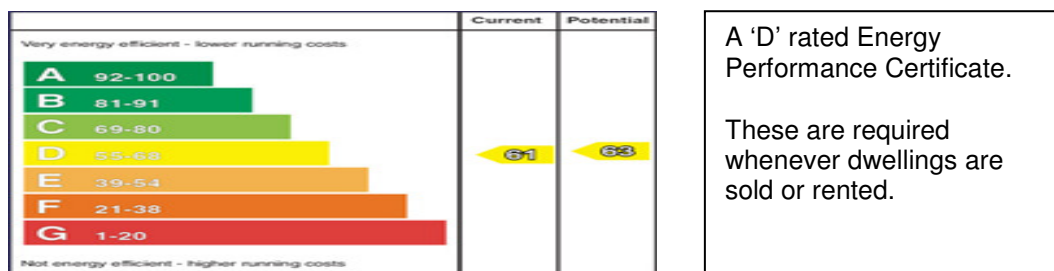
21. Southwark is undergoing significant regeneration and growth with 31,000 new homes being planned for delivery between 1997 and 2017. The Council has a growing reputation for innovation in using planning powers to mitigate the impact of new development.
22. The proposed regeneration of Elephant and Castle will involve a tripling of floor area. To limit the impact of this growth, the Council proposes to use its planning powers and land ownership to apply strict limits on carbon emissions on the development.
23. The Council exceeds national policy currently by requiring that major developments offset 20% of anticipated CO₂ via on-site renewable energy technologies and exceed Building Regulation CO₂ targets by 44%. This and the detailed guidance set out in the Council's Supplementary Planning Guidance on Sustainable Design and Construction is reducing the

impact of major build. Some examples of recent developments influenced by this planning guidance are listed below:

- a. **Wardroper House – St Georges Road SE1** – sustainability features include solar water heating, low water use appliances and cross ventilation
- b. **28 Arch Street SE1** – sustainability features include low energy lighting, rain water harvesting, maximised use of natural light and heat (positioning of windows) and solar water heating
- c. **Patrick Court – Webber Street SE1** – features include solar water heating and rain water harvesting

Council Housing

24. The thermal efficiency of homes is measured by their SAP rating which runs from on a scale of 0 – 100+. Over the past decade, the Council has invested heavily to raise the thermal efficiency of the Council’s housing stock to SAP 63.4%. SAP 63 is equivalent to an Energy Performance Certificate ‘D’ rating. The Council has above average performance for the UK and is approaching the current threshold (SAP 65) at which a dwelling is deemed to be ‘fuel poverty proofed’ (where benefit dependent occupants can afford adequate heating).



25. It is worth noting however that SAP only measures the energy efficiency of the building envelope, heating system and lighting. Neither SAP nor Building Regulations account for the energy consumed by electrical appliances which account for a third of average domestic energy use.
26. The North Peckham communal heating scheme has been extended to Tuke School; a £1.2m externally funded project to upgrade while existing heat plant and pipe infrastructure on the Brandon and Cossal estates will contribute a further 1,390 tonnes CO₂ reduction pa.
27. Conventional energy efficiency measures are one of the most cost effective ways of deliver CO₂ reduction. Work here includes a loft insulation programme to ‘top up’ Council lofts up to current standards (a 7,000 tonne saving), an innovative cavity wall programme to target high rise dwellings (a further 5,300 tonnes), ongoing work to replace boilers with more efficient condensing models (1,260 tonnes) and the on-going installation of double glazing. These measures are part funded by the energy suppliers.
28. In addition, to improve tenant energy billing, work has been completed to identify and validate thousands of gas and electricity meters, aligning them to property databases, and consolidate energy consumption readings and invoices.

Other tenure housing

29. Southwark has been working closely with the GLA/ London Development Agency to develop a regional mechanism (RE: NEW) to retrofit energy efficiency measures in London’s housing stock. The first two pilots saw 7,171 energy efficiency and behaviour change measures

installed in homes in Bermondsey and Dulwich such as loft and wall insulation, water saving devices and shower timers.

Council Initiatives

30. The Council has launched a number of schemes aimed at raising awareness, changing behaviour and reducing carbon emissions both internally and in the borough as a whole.
- **200 Club:** The Council has set up a new mechanism (the '200 Club') to support the borough's larger emitters to reduce their emissions. To date, 50 organisations have signed up, with a shared footprint of 140,076 tonnes (9% of total borough emissions). A range of support services including seminars, practical case studies, a behaviour change toolkit, local off-setting scheme and mentoring service is being developed to support these large emitters to amplify their reduction.
 - **Green Audit:** A full audit of the Council's carbon emissions has already been carried out to obtain a baseline for the operational estate. As part of this exercise, 17 of the Council's key sites (such as Tooley Street, Manor Place and Mabel Goldwin House) were audited on their recycling rates, water use, cycle provision, energy consumption and paper use. This resulted in the 'Green Buildings' scheme explained below and a number of the initiatives in this report.
 - **Energy Savings Trust:** Southwark completed an audit and developed an action plan, in association with the Energy Saving Trust and a highly visible brand - Southwark 'Big Switch Off' to identify initiatives for which many are included in this report (residents, council staff, schools and local businesses).
 - **Green Buildings:** Seventeen Council sites are competing to improve their performance across a range of environmental targets (energy, waste, recycling, travel, procurement and water).
 - **Ecoschools:** 97% of Southwark Schools are registered Eco-Schools, an international environmental education award scheme, (the second highest number of any LEA in England) with 6 schools having achieved the 'green flag' award.
 - **Salix:** Utilising the Salix fund, the Council has installed energy saving measures in 13 corporate sites in the last year, saving a total of 236tCO₂ (see appendix three for further details).
 - **'Modernise':** The office consolidation programme and move to Tooley Street centralised 2,000 staff into new BREEAM 'very good' rated accommodation delivering a 2,088t CO₂ reduction pa from the now redundant sites and 118tCO₂ pa from the changes in staff's commuting and reduced taxi habits.
 - **School Investment:** The Schools Capital Investment Programme is rebuilding or remodelling 16 local schools. These will be built to BREEAM 'very good' standard and will offset 20-60% of CO₂ via onsite renewable energy systems. This will deliver an estimated 952tCO₂ reduction by 2016.
 - **School Energy Management Pilot:** A new pilot is working with 20 schools to deliver a 20-30% reduction in their CO₂/ energy bills via the identification and installation of energy efficiency measures. Measures are co-funded by Children's Services and pilot schools. Current projections are for savings of 358tCO₂ in addition to £70,000 pa bill savings and £4,296 (2012) CRCEES costs.
 - **Leisure:** The leisure stock has benefited from significant capital investment in the past 2 years which included improving the environmental performance of the

centres. Redevelopments at Camberwell and Dulwich Leisure Centres and Surrey Docks Water Sports Centre have resulted in a reduction in Carbon Emissions of an estimated 469 tCO₂ pa to date. Some examples of the initiatives and actions that are taking place are set out in the table below.

Measure	Overview	Installed Cost	CO ₂ (tCO ₂)
Energy manager	Fusion have appointed an energy manager to oversee energy reduction in the leisure centres	NA	NA
Stark meters	Automatic Meter Reading technology installed into most sites to improve data	£214,250	20
Monthly meetings	Fusion meet each month with the Council's Leisure Team and a representative from the Council's sustainability Team.	NA	NA
Pool covers	Applied where suitable	£7,000	31
Maintenance contractor	Sites are now being maintained to a good standard by Fusions nominated specialist contractor. Mechanical and electrical assets are being maintained on a monthly basis	N/A	20
Re-development of Dulwich, Camberwell and Surrey Docks leisure Centres	Works include: <ul style="list-style-type: none"> - Double glazing - Low energy compact fluorescent lighting - Retractable pool covers - Pool and Gym hall roof insulation - Solar thermal panels - Upgrade windows to double glazing - PIR sensors to control lighting - CHP Installation at Camberwell - Calorex heat recovery unit at Camberwell - UV filters at Dulwich and Camberwell 	N/a – wrapped up in multi million pound scheme development	469
TOTAL		+£435,500	568

In respect of the redevelopment at Elephant and Castle Leisure Centre – The Council is currently in the middle of the design process for a brand new leisure centre on the site of the old Elephant and Castle Leisure Centre. Options are currently being explored in order to maximise the new centre's environmental performance and credentials. An example of the types of projects being explored is CHP, use of a borehole, grey water harvesting amongst many others.

- **Street Lighting:** Southwark's street lighting is already amongst the most efficient in the capital and the team is considered industry experts in terms of efficient lighting schemes.
- All new installations are fitted with electronic controls, use a 'White Light' lamp source, and light timers are trimmed so they operate approximately half an hour less each night. Functional units used on residential roads use 'cut off' or Flat Glass Lanterns wherever suitable.
- The service also has five functional trials using LED's (Burgess Park, Tabard Street, Blackpool Road, Rephidim Street and Peckham Hill Street) and is currently upgrading all Pedestrian Crossings to LED's, which typically use 90% less power and last for 10 years (60 times longer than the traditional 100w lamps).
- Other work undertaken to date includes the award winning Bermondsey Street Tunnel lighting project, which reduced energy use by 46% and the recent lighting scheme in Peckham Square where energy use was reduced by almost 96%.

- **Fleet Services:** The upgraded fleet contains 150 new vehicles using a mixture of LPG alternative fuels, euro5 emissions standards and start/stop technology. This combined with fuel efficiency programmes and driver awareness training is estimated to save 50tCO₂. This action was informed by a recent Green Fleet Review delivered by the Energy Saving Trust which sets out further opportunities to reduce fuel costs and save CO₂.

31. The overall progress to date is summarised in the tables below with the relative contribution each project has delivered against the baseline indicated in the last column.
32. The first table looks at the reduction which Council initiatives have delivered against its own business operations. To date an 8.4% reduction has been delivered against the 2008/9 baseline.

	Projects	tCO₂	% reduction
Operational stock including schools	Baseline	41,036	n/a
	Property rationalisation: Tooley Street business case	2088	5.1
	Salix energy efficiency pilot (13 sites)	236	0.6
	School energy efficiency pilot (20 sites)	358	0.9
	Leisure capital programme	568	1.4
	Staff commute and business travel	118	0.3
	Fleet	50	0.1
	Total reduction to date	3418	8.4

33. The next table looks at the reduction that has been achieved in the Council's housing stock - a 6.7% reduction to date.

	Projects	tCO₂	% reduction
Housing	Baseline	202,800	n/a
	Borough-wide insulation programme	7,000	3.5
	High rise cavity wall insulation programme	5,300	2.6
	Annual boiler replacement	1,260	0.6
	Total reduction to date	14,950	6.7

34. The final table maps the reduction achieved at a borough level. It shows that recent measures have delivered a 1.1% reduction from the 2003 baseline position.

	Projects	tCO₂	% reduction
Borough	Baseline	1, 690 000	n/a
	Total operational measures	3418	0.2
	Total LBS housing measures	14950	0.9
	RE:NEW	435	0.0
	Total reduction to date	18803	1.1

PROPOSALS FOR FURTHER REDUCTION

35. As explained previously, the targets, set in 2006, were highly ambitious and assumed a very significant level of investment in technologies. The approach set out in this report is based around mainstreaming activities and getting the maximum contribution from 'business as usual' activities and external funding opportunities in the shorter to medium term.
36. Whilst a lot of work has already been carried out and real progress made, meeting the challenging Carbon Reduction Targets does still require commitment, innovative thinking and strong leadership to reduce both the Council's own emissions and that of the borough.
37. Emerging legislation and initiatives presents challenges and opportunities to Southwark that will help drive future carbon reduction in the borough.
38. The table below summarises the level of influence the authority has over the sources of borough emissions.

What	Buildings	Contribution to CO ₂	Level of control	Means of control/ influence
LBS housing stock	40,120	14.5%	High	Direct / partial control – asset holder
LBS buildings and schools	350			
New build	?	?	Medium	Indirect control via planning policy
Non LBS social housing	15,013	5%	Some	Influence via SOUHAG
Large workplaces	250-300	9% (now) 20-30% (potential)		Influence via 200 Club
SMEs	15,000?	24-34%	Low	Limited

COUNCIL EMISSIONS

39. The following sections set out future proposals to further reduce Council emissions

Council Housing

40. While most of our stock is already performing well in terms of thermal efficiency, further work is needed to identify low cost emission reduction opportunities across the Council's housing stock

Recommendation 1

A project to baseline emissions from the Council's housing stock using the data captured from Energy Performance Certificates (EPC's) and to identify cost effective opportunities for reduction along with how these can be built into existing budget and further finance options be carried out.

41. The Housing Investment Programme and Revised Strategy Report dated 31st May 2011 committed the Council to delivering warm, dry and safe homes and reducing CO₂ emissions in its housing stock. Whilst the Government's Decent Homes Standard does not include a meaningful measure for thermal efficiency, the Council has agreed a five year investment programme to make all homes warm, dry and safe by 2016. This includes roof renewal, insulation, window replacement and central heating upgrades.

Recommendation 2

The Housing Investment Strategy progresses as all of the planned measures will have a positive impact on thermal efficiency and the Council has undertaken to ensure all of its residential properties have a minimum rating of 'D' by 2020

42. Much of the Council's housing stock is heated by communal systems which were installed in the late 1960s and early 1970s and these are now in need of urgent replacement.

Recommendation 3

Considering that major investment in these district heating schemes is an urgent priority, it is agreed that Combined Heat and Power (CHP) or biomass over standard gas fired options will be considered as the first option on any renewal programme as CHP is exempt from the Climate Change Levy fuel tax and biomass is eligible for part funding from the Renewable Heat Incentive.

Recommendation 4

There is an early opportunity to install a Combined Heat and Power (CHP) at Acorn Estate as part of the proposed redevelopment of the Acorn site. It is likely that the preferred developer will also opt to provide a CHP plant to help meet the required level of the Code for Sustainable homes.

Recommendation 5

A major new project to install a pipeline to transport waste heat from the nearby SELCHP waste incinerator to send 'solid recovered fuel' (SRF) to five Council estates is currently being considered. Should this project prove viable, it will save over 8,000 tonnes of CO₂ pa (0.5% borough CO₂).

43. Other opportunities include funding for insulation measures from energy suppliers (CERT, CESP and from 2012 ECo) and the Homes and Communities Agency (HCA).

Recommendation 6

The funding opportunities set out in section 43 will be explored by Housing Management

44. Energy use in the housing stock is split into landlord's supply and tenant bills.

Recommendation 7

Housing investment are currently undertaking work to measure the performance of different types of LED retrofits and in turn assess whether there is a business case to refit LED lighting in communal areas. It is recommended that this work continues

Feed in Tariffs/Renewable Heat Incentive

45. Southwark Council owns a high volume of stock in the borough (Council housing, operational buildings, schools and commercial properties) so has a significant acreage of roof space at its disposal.
46. Under these new financial incentives, the Council could fund photovoltaic systems (panels that convert sunlight to electricity) and use the guaranteed FiT revenue as a source of ongoing funding for energy efficiency measures. The table below shows the business case for a sample 50kW PV system (sized for a large school). An initial investment of £175,000 would yield £17,000 pa for 25 years, paying back within 10 years and generating £178,000 of profit.

Business case: 50kW PV system			
Installed cost	£175,000		
Total income pa	£17,000	FIT income	£14,000
		Bill saving	£3,000
Years to 'pay back' installed cost	10 years		
Profit over 25 yr	£178,000		

47. Since however, the above example would require capital investment and Southwark has committed all available funds to other priorities, it is recommended that the Council should instead look to an alternative approach. A secondary market is emerging for business owners to rent roof space to third parties to install PV. In return for a 25 year agreement to collect the FiT payment, the third party will cover the full installation and maintenance costs of the system. The building owner will benefit from a nominal rent such as free electricity to offset energy

Recommendation 8

The Council will investigate installing PV/solar thermal systems to reduce bills and reduce carbon emissions in the borough via a roof lease hire agreement. A survey of the available roof space will be conducted. The housing investment team is actively assessing the option of partnering with a third party to deliver a programme of solar PV installations and it is therefore proposed that Housing Management lead this work on behalf of the Council with support from Property to identify other potential sites within the Council's portfolio.

Operational Estate

48. Although Council buildings and schools contribute a relatively small proportion of borough CO₂ (2.5%), the financial and reputational drivers provide a strong case for action. The (non housing) Council and school estate cost over £6 million to heat and power.
49. From 2012, this will be subject to an additional tax known as the Carbon Reduction Commitment Energy Efficiency Scheme (CRCEES) increasing the cost from £144 to £156 per tonne.
50. CRCEES will affect over 20,000 large organisations in both the public and private sector including Southwark Council. From June 2012, participating organisations will be required to monitor emissions from all building and street-lighting energy usage and to pay a new tax of £12 for each tonne of CO₂ emitted over the course of each year. Sites where data is based on less than 3 annual utility meter readings will be subject to a further 10% tax.
51. Under CRCEES, Southwark Council is classed as responsible for the CO₂ emissions from local schools and academies, despite limited or no control over their energy consumption,

behaviours or their capital investment choices. On current estimates, this new tax is anticipated to cost the Council £415,000 in 2012.

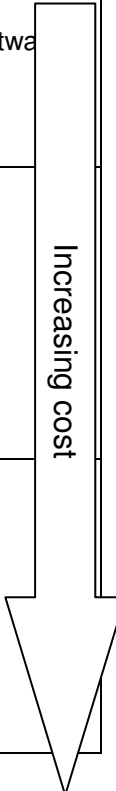
52. The Council has been lobbying The Department for Energy and Climate Change (DECC) in an attempt to make the scheme fairer and less onerous in terms of data gathering and reporting. The outcome of this lobbying is not yet known.

Recommendation 9

CRC compliance will be managed by the Energy Team in Environment and Leisure.

53. Council operations currently generate over 41,000 tCO₂ every year and with energy bills rising every year, action to reduce both energy use and CO₂ emissions represents a considerable opportunity for the Council to contain rising costs.
54. Reducing CO₂ in workplace accommodation is more complicated than in the domestic sector. Typical measures are highlighted in the table below. All measures pay back within five years.

Cost scale	Cost per 1tCO ₂ reduction	Measures
Very low	£200-400	<ul style="list-style-type: none"> Office equipment (photocopiers etc); Computers and IT (thin client, power down software) Motor controls Insulation (pipe work)
Low	£400-£600	<ul style="list-style-type: none"> Insulation (hot water tank) Time switches Heating optimisation Building Management Systems Insulation (draught proofing) Voltage optimisation Condensing boilers Lighting controls
Medium	£600-£800	<ul style="list-style-type: none"> Insulation (building fabric) Compressor Efficient hand driers Efficient cooling equipment Ventilation Motor replacement Lighting upgrades CHP LED lighting



55. The Council has been running a pilot programme to install energy efficiency measures in 13 sites funded through its internal 'Salix' loan fund. To date £145,600 of the fund has been allocated delivering a reduction of 236tCO₂. The table below outlines the savings.

	Installed cost (£)	Bill savings	Payback (Years)	CO ₂ (tCO ₂)
Council building	£145,601	£43,441	3.2	236

56. Examples of schemes funded from the Salix pot are shown in Appendix Three.

57. The 'Salix' loan fund was set up with £200k of government funding and £200k of Council money. Since the energy bill savings resulting from the measures are repaid to the fund, it can continue to provide ongoing investment for measures. As the diagram below shows by Year 6 (2016) of its operation (if fully utilised) it will generate over £1 million capital (from the initial Council contribution of £200k). This will deliver a 1,738tCO₂ saving cutting operational CO₂ by 4.2%

Total Salix fund		£400,000						
Fund allocation	Year 1 2010/11	Year 2 2011/12	Year 3 2012/13	Year 4 2013/14	Year 5 2014/15	Year 6 2015/16	Totals	
Fund Available (£)	£145,601	£254,399						
Repayments (year 1 investment)		£43,441	£43,441	£43,441				
Repayments (year 2 investment)			£88,881	£88,881	£88,881			
Repayments (year 3 investment)				39,487	39,487	39,487		
Repayments (year 4 investment)	£145,601				51,270	51,270		
Repayments (year 5 investment)						53,607		
Capital for investment		£297,840	£132,322	£171,809	£179,638	144,364	£1,074,113 (6yr figure) £529,749	
Savings reinvested								
Fund recycles	2.3	Times						
Annual CO ₂ savings	236	483	215	279	292	234	1,738 tCO₂ (6yr figure)	
% of carbon saving delivered - 4.2%								

Recommendation 10

Salix funding continues to be used to fund energy efficiency schemes in operational buildings and schools.

58. A recent project by a cross departmental team of Council officers supported by the government backed Carbon Trust to identify and cost various carbon reduction scenarios identified a 26% potential reduction by 2016 as the highest target that would be affordable in today's terms. Affordable is defined as measures that 'pay for themselves' within 5 years from either energy bill reductions alone (buildings only) or from energy and related maintenance costs (street-lighting)
59. This can be achieved by implementing cost effective energy efficiency measures (those that payback from energy bill savings in five years or less as detailed in the table at section 54), planned disposals, new build and major refurbishment (such as Southwark Schools for the Future).
60. To realise the savings proposed in section 16, improved housekeeping to monitor and manage the way that energy is used by staff and building managers is needed. Simple measures such as turning off lights, computers, printers and photocopiers and turning down heating controls can reduce energy consumption in offices by up to 10%. To support this behavioural change, all sites large enough to be billed on a monthly basis need to provide monthly electricity and gas meter readings to the sustainability team within Environment and

Leisure. This will enable the team to support sites in actively managing consumption and spend.

Recommendation 11

A project team, lead by The Strategic Director of Environment and Leisure, will be set up to encourage staff to adopt these simple housekeeping practises and ensure building managers report energy consumption to the team

61. Normally to achieve a 26% reduction in CO₂ would require extensive use of higher cost measures such as cladding, triple glazing and more renewables. The property rationalisation programme and high scope for basic energy efficiency measures however, means that the Council can deliver this reduction.

Recommendation 12

Modernise Two and the on-going disposal of sites will therefore continue and contribute to the Council's carbon reduction strategy.

62. Other opportunities include the Council or its partners taking a low interest loan from the London Green Fund to engage a contractor through the GLA's RE:FIT programme to retrofit a group of buildings. This may however have a number of resource and revenue consequences.

Leisure Centres

63. Southwark has eight leisure centres of varying sizes and varying ages, currently managed by their leisure provider, Fusion. They are large consumers of energy and can produce in the region of up to 3,000 tonnes of carbon annually. Whilst some work has already been carried out to reduce energy consumption in a number of the centres as set out in section 30, there is scope for more to be done.
64. Funding to engage a contractor through the GLA's RE:FIT programme is available but the length of the current contract may be a barrier as the funding will have to be paid back over several years, past the contract end date.

Recommendation 13

The leisure centre client team in Environment and Leisure will actively encourage Fusion to apply for the funding outlined in Section 64 and strive to remove any barriers that may exist

65. Fusion also have a number of 'environmental champions' in place across the borough and there is an opportunity to engage with them in a formal way to help drive down emissions.

Recommendation 14

Fusion will join the Council's Green Buildings project and progress on energy reduction, recycling and other environmental measures will be reported monthly

Schools

66. Energy saving measures are installed in schools in two ways – as part of the Council’s capital works programme to refurbish schools and by a pilot programme to identify and part fund measures with the schools themselves. This pilot programme ran in 20 schools in 2010/11 with the benefits as outlined in the table below. Examples of measures installed include lighting and heating upgrades and boiler insulation

	Installed cost (£)	Bill savings (£)	Payback (Years)	CO ₂ (tCO ₂)
Schools	£200,000	£70,000	3.2	358

Recommendation 15

Children’s Services will fund a second pilot to the value of £200k (£100K from Children Services and £100K from the schools involved) later in 2011.

REDUCING THE BOROUGH’S EMISSIONS

67. With 86.5% of the borough’s carbon emissions not directly controlled by the Council, meeting CO₂ reduction targets will only be fully achieved by influencing the borough’s businesses, residents, landlords and building owners. The following section sets out the proposals that will facilitate this influence.

Homes in the borough

68. The table below outlines how the housing stock is split by tenure and emissions. Measures to the Council owned stock Council’s housing stock are in set out in the report.. The majority of the remainder of the social stock, which accounts for 5% of CO₂ is concentrated in the hands of and managed by ten large Residential Social Landlords (RSL’s) who regularly engage with the Council and who have strong drivers to reduce CO₂ to tackle fuel poverty and increase the quality of their stock

Tenure	Percentage of borough CO ₂	Number of dwellings	Percentage of stock
Council homes	12%	40,120	32%
RSL homes	2%	15,013	12%
Private sector homes	16%	70,156	56%
Total	30%	125,289	100%

69. The majority of the remaining 16% of domestic emissions come from Southwark’s 70,156 private sector dwellings. The Council has a remit to support these households to reduce their energy consumption under the Home Energy Conservation Act.
70. The majority of energy (81%) consumed in a home is used either for space heating or heating water. The remainder is split between lighting (16%) appliances and cooking (3%).
71. The key energy efficiency measures that are required to save money and CO₂ are:

- *Low cost measures* that ‘payback’ in less than a year such as draught proofing, pipe work and hot water tank insulation
 - *Mid cost measures* costing less than £500 that ‘payback’ in less than five years such as loft and cavity wall insulation
 - *Higher cost measures* such as condensing boilers that take ten years to ‘payback’ but deliver good savings
72. The government has expressed an ambition to complete all basic insulation measures by 2016. There is still some way to go in Southwark before these low cost measures are complete (full or top up loft insulation is still required in 35% of dwellings and cavity wall insulation in 23%).
 73. The government hopes that the bulk of the investment required for this cross-sector retrofitting will come from the private sector loans via its forthcoming Green Deal and Eco initiative although full details of these schemes is still awaited.
 74. Eco is intended to change the retrofitting market in the UK by enabling private firms to offer consumers energy efficiency improvements to their homes, community spaces and businesses at no upfront cost and to recoup payments through a charge on the energy bill.
 75. This Pay as You Save (PAYS) financing model is designed to allow consumers to take out a loan of up to £6,500 for measures such as insulation and heating improvements. This would be attached to the property and would pass to the next occupier when the property tenancy transfers.
 76. It is not yet clear what measures will be available under the Green Deal but it is likely that loft and cavity wall insulation, draft proofing and efficient boilers will be included and that some subsidy for solid wall insulation (currently not financially viable - £11k) will be forthcoming from the supplier obligation Eco.
 77. The Council’s 2008 Private Sector Stock Condition survey estimated that it would cost £143 million if all remaining opportunities for these measures were carried out in the borough’s 70,156 privately owned homes. This would reduce this sector’s CO₂ by 23% reduction (equivalent to 76,600 tCO₂ pa– 4.5% of borough CO₂).
 78. As well as financing improvements to the private and potentially Council stock (where the Council gave permission), this legislation is likely (from 2015) to give local authorities a new power to oblige private sector landlords to improve the thermal efficiency of their stock.
 79. Since the predominant form of dwelling in the UK is a three bed semi-detached house, energy reduction programmes are designed with these in mind. This has meant that Southwark, where 70% of the stock is made up of flats makes it a less attractive prospect for contractors.
 80. 49% of Southwark’s private sector residents live in dwellings that require solid wall insulation. The market for this is not yet fully developed and the currently proposed maximum Green Deal loan will not cover the cost. The Government has announced that a new obligation on energy suppliers will help but given the limited success of past supplier obligations (for example CERT) especially for London’s atypical housing stock, it is unlikely that Southwark will benefit significantly from this new proposal.
 81. To overcome this local disadvantage and to ensure that the Green Deal works for inner London (and that it does not miss out on external funding as it has in the past with CERT and CESP), the Council will work with other London boroughs to effectively lobby the government to ensure that the measures that Southwark needs are included and, at an affordable rate to ensure high local take up.

Recommendation 16

Southwark works with other London Boroughs, the GLA and London Councils to effectively lobby Government to ensure the future suitability of Green Deal and Eco for inner London housing stock and how the Council can effectively use the Green Deal when it is finalised

82. Whilst Eco and Green Deal are interesting developments, lack of finance may not be the only barrier (the low cost of these measures and high potential savings justify them even before a loan). The following sections outline the key barriers that the Council and partners must resolve if the widespread take-up envisaged for the Green Deal is to happen in Southwark.
- There are currently over 30 providers offering free or discounted insulation in London, leading to fragmented delivery. The Green Deal is likely to bring more providers (including household names) into the market increasing the confusion for residents. The Council will need to consider how best it can use its position to reduce this confusion and increase take-up.
 - The perceived hassle of having measures installed is a significant barrier. Models offering a tailored whole house approach such as the emerging regional model (RE:NEW) can significantly reduce this factor. Under RE:NEW energy assessors visit homes and carry out a whole-house energy survey identifying which energy saving measures are appropriate for the home. Going forward, RE:NEW aims to integrate with Green Deal models so that measures can be offered free upfront, and paid back through savings on the energy bill.
 - Residents are often sceptical about the benefits of retrofitting. Work by Kirklees Council and British Gas has found that a powerful way to counteract this is to work on an area wide street by street basis. As well as achieving significant economies of scale, uptake is increased by peer referral. The Council is currently exploring this approach in the Peckham Low Carbon Zone.

Workplaces in the borough

83. Workplaces account for the largest proportion (53%) of borough emissions. The challenge for the Council in dealing with this sector is twofold; limited influence and the potential number of organisations it needs to influence. Half of these emissions (24-34% of borough CO₂) are likely to come from thousands of small and micro organisations with limited capacity or incentive to act.
84. Most organisations in Southwark occupying commercial property do not own the buildings. Approximately 90% of office space is leased and around 40% of office buildings are multi-tenanted. This tenant-landlord disconnect is a key barrier to upgrading the energy efficiency of buildings: the tenant benefits from the upgrade, in the form of lower energy bills, but the landlord would typically bear any building upgrade costs. The presence of managing agents in some instances complicates matters further. The non domestic version of the Green Deal could provide a way round this from 2012 if tenants can be persuaded to take up the loan and landlords assent.
85. Since a non domestic version of the RE:NEW version is unlikely to be forthcoming to target this sector, the most effective way of supporting energy efficiency measures in work places will be to work with other Local Authorities and promote a preferred provider/ range of providers, should a Green Deal type offer become available.

Recommendation 17

The Council promotes as appropriate the business version of Green Deal to businesses renting Council owned premises
The Council promotes a preferred provider to the '200 Club' via the Business Improvement Districts

86. It is recommended that the Council focus its resources on large organisations where there are strong drivers for reduction (CRCEES) and medium organisations where there is still good scope for reduction and where European funding can support this work.
87. A mapping exercise has been carried out to identify the largest 200 emitters in the borough using floor area as a proxy for emissions.
88. The 200 Club initiative encourages these organisations to reduce their emissions. The 200 Club currently has 50 members signed up, controlling 9% of borough emissions. Based on government estimates that its new CRCEES legislation will cover half of all workplace emissions, and regional statistics that the largest 120 of London's employers employ 70% of the workforce, it is estimated that a mature Club could control 20-30% of borough emissions.

Recommendation 18

The 200 Club will continue to be promoted as many of the big emitters in the borough will already be motivated either as a result of the CRCEES legislation or to improve their bottom line and the club therefore represents a cost effective way for the Council to stimulate additional emission reduction. A re-launch of the club will be held in November 2011 to increase interest in the scheme and a range of Club offerings are being developed to support this.

New build

89. The previous government introduced a number of policies aimed at delivering zero carbon residential and non-domestic developments by 2016 and 2019 respectively. These include the Code for Sustainable Homes, Building Regulations and Planning Policy Statement.
90. The table below sets out the targets set by Government (using the 2002 Building Regulations permitted kg/CO₂/m² as the baseline

Timeframe	Domestic reduction	Commercial reduction
2010 – 2013	44 per cent	44 per cent
2013 – 2016	55 per cent	55 per cent
2016 – 2031	Zero carbon	As per building regulations requirements
2019 – 2031	Zero carbon	Zero carbon

91. These effectively meant that the Council could have excluded the impact of homes built from 2016 and non domestic buildings built from 2019 from its 2050 target. However, moves by the current Government (budget 2011) to change the definition of zero carbon to exclude 'emissions from cooking and electrical appliances ('unregulated emissions') will mean that this will not be possible as new development will be 'low' rather than 'zero' carbon (unregulated emissions account for a third of domestic emissions and a third to a half of non domestic buildings)

92. The Council's 'Code Four Sustainable Homes' planning policy already requires Level Four energy efficiency for all new build and therefore exceeds the current national requirements and so supports a rapid reduction in carbon emissions in the borough.

Southwark's Green Fund

93. All local planning authorities will need to establish local offset funds from 2016 if the national Building Regulations require all new housing to be carbon neutral as currently planned. Where this cannot be met on-site, developers will instead contribute to local off-set projects.
94. Southwark has already established such a scheme. If developers are unable to meet the 20% renewable energy target set in Southwark's planning guidance, they are supposed to contribute to the Council's Green Fund. Although this isn't currently consistently enforced, £78,000 is already set aside for energy efficiency measures and once a formal model is developed to ensure consistent application of the obligation on developers, the Green Fund will provide an on-going funding stream for the future.
95. The Council has recently created an offset fund in relation to affordable housing obligations, and it is proposed a similar exercise and process to be followed for the Green Fund.

Recommendation 19

The current Green Fund will be moved to a similar model as that in place for affordable housing and the Council will establish an appropriate process and criteria to manage how the fund is spent

96. This fund will then be available to be used to pay for energy efficiency measures elsewhere in the borough. This requirement on developers still needs the adoption of a formal policy to agree scale of contributions and how the funds can be used.

District Heating Schemes

97. District heating schemes are far more energy efficient than individual boilers in urban areas and can help drive down carbon emissions. A number of new heat networks or district heating schemes are being actively explored in the borough, in particular where there are large scale regenerations schemes – Elephant and Castle zero carbon growth/ the Aylesbury regeneration, north Southwark (SBEG) and a heat pipe to utilise waste heat from the SELCHP incinerator and displace the gas currently used to heat five Council estates. As part of a project to develop a heat map for the capital, the London Development Agency/ GLA identified the following areas as being particularly suited for new district heating schemes:

Focus area	Potential
Canada Water	High
North Southwark	High
Bermondsey	High
Southampton Way Spa	High
Camberwell	Medium
Surrey Gardens	Medium
Peckham	Medium

98. The Planning policy team will continue to support the implementation of local heat networks where feasible as they are significantly more efficient and particularly well suited to dense urban areas.

Recommendation 20

The Council will work with the GLA, which has responsibility and EU funding to identify and then develop as appropriate local heat networks to identify opportunities in the borough

Transport

99. London's transport-related CO₂ emissions are predicted to fall by 16% by 2025, despite projected population and employment growth in excess of 10%. Drivers of this reduction include the ongoing long-term trend of vehicle fuel efficiency improvements driven by EU legislation, regional measures to drive modal shift, the decarbonisation of grid electricity and related incentives for electric vehicles and UK policy to increase the share of bio-fuel in transport fuel from 5 to 10% in the lead up to the 2020 renewables target.
100. The Council already has a comprehensive focus on encouraging modal shift. This includes managing demand via car clubs, investing in cycling and walking infrastructure, cycle parking and working with public transport providers; encouraging sustainable travel choices through school and workplace travel plans and encouraging smarter driving to reduce emissions and improve air quality.
101. The Council is currently considering a move to parking permit costs being based on carbon emissions and this will also help drive down CO₂ production in the borough.
102. As can be seen from the information above, Southwark has a range of opportunities at its disposal to reduce carbon emissions in the borough. Successful achievement of the proposed 22.4% borough reduction target by 2020 however, will require ownership and significant action from all Council departments

Community impact statement

103. Reduced carbon emissions will improve the environment and reduce spend on energy. The proposals set out in this report will therefore have a positive impact on the borough's residents

Sustainability considerations

104. All proposed actions contained within this report are designed to reduce energy consumption and reduce the use of fossil fuels. Recommendations within this report will therefore have a positive impact on the environment.

Resource implications

105. The proposed actions set out in this report reflect the fact that the Council is unable to commit large sums of capital or revenue to reducing carbon emissions within the borough due to the budgetary constraints it currently faces.
106. The Housing Investment Strategy, agreed on 31st may 2011 includes clear targets in terms improved thermal efficiency of the Council's housing stock and will therefore help Southwark meet the proposed carbon reduction targets set out in this report.
107. The Salix fund is already established and will continue to be used to improve the thermal efficiency of the Council's operational estate and that of schools in the borough.
108. Children's Services and schools continue to commit capital to the school stock and some of this will be targeted at carbon emission reduction.
109. Staff time will be needed to deliver the recommendations set out in this report and all departments will need to act on the recommendations (summarised in Appendix One)

110. The proposed development of the 'Green Fund' (£78K available to date) as described in Sections 93 to 96 should create a funding stream that the Council will be able to use to reduce emissions across the borough. Whilst it isn't possible to estimate the amount of money the fund may create, it is substantial given the amount of new build taking place in the borough.
111. The Green Deal, as explained in Sections 73 to 82, may help reduce borough wide emissions but as the scheme has not yet been finalised, the Council needs to ensure effective lobbying takes place to shape the Green Deal to suit homes in Southwark.
112. With over £6m spent each year on energy for Council buildings and schools, there is a clear financial incentive to reduce energy use. With the new CRC legislation coming into force for 2012, adding an additional £415,000 to this spend and the fact that energy prices are rising sharply, the incentives to implement the recommendations in this report are clear.
113. The latest estimated total cost of the Carbon Reduction Commitment for financial year 2011/12 is around £415k and is payable in arrears in April 2012. A provision of £500k set aside as part of Budget and Business Planning 2011/14 is sufficient to pay for this expenditure. However, the adequacy of provisions for future years from 2013/14 is uncertain since it depends on price of allowance, the level of CO₂ emissions the council manages to reduce and the weighting given for the accuracy of future meter readings.

Staffing/procurement implications

114. The Sustainability and Energy Teams within Environment will need to be reconfigured to deliver the actions proposed in this report.
115. Procurement implications are not yet clear as some of the schemes are still to be finalised (Green Deal, roof lease etc)

SUPPLEMENTARY ADVICE FROM OTHER OFFICERS

Strategic Director of Communities, Law & Governance

116. The Climate Change Act 2008 ('the 2008 Act') set a target for the United Kingdom to reduce carbon emissions to 80% below 1990 levels by 2050. It also set an interim target of a 34% reduction by 2020 and established the concept of carbon budgets.
117. The Carbon Reduction Commitment Energy Efficiency Scheme (previously known as the Carbon Reduction Commitment) was introduced by The CRC Energy Efficiency Order 2010 under sections 44 and 46(3) of and Schedule 2 and paragraph 9 of Schedule 3 to the 2008 Act and is a mandatory carbon emissions reporting and pricing scheme for large, non energy-intensive businesses and organisations. The Carbon Reduction Commitment came into force in March 2010 and it applies to large businesses and public sector organisations whose annual electricity consumption is over 6,000 MWh (Megawatt Hours) and who are not already part of the EU-ETS (European Union Emissions Trading Scheme) or covered by Climate Change Agreements. It covers direct and indirect emissions from supplies of electricity, gas and fuel by public bodies and undertakings. The council is a public body for the purposes of the 2010 Order. The aim of the Scheme is to significantly reduce carbon emissions not covered by other pieces of legislation and the primary focus is to reduce emissions in non-energy intensive sectors in the United Kingdom.
118. In October 2010, the Government announced significant changes to the Scheme as a part of the Comprehensive Spending Review with the aim of simplifying the same in order to reduce the burdens on businesses. The Scheme comprises three primary elements: i) an emissions reporting requirement ii) a new carbon price and iii) ranking of participants in a performance league table.

119. The Climate Change Levy (CCL) was introduced by the Climate Change Levy (General) Regulations 2001 to encourage improved energy efficiency and reduced greenhouse gas emissions. It is a charge on energy usage for business and the public sector introduced to encourage energy efficiency.
120. It is confirmed that the council as a Local Planning Authority is under a duty to minimise the impact of new development in the borough from an energy performance and efficiency perspective. The UK government has announced targets for all new housing to be "zero carbon" by 2016 and new commercial buildings by 2019. The main requirements on the energy performance and efficiency of buildings are contained in the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007 (as amended) and in Part 6 of the Building Regulations 2010.
121. The Energy and Carbon Reduction Strategy is consistent with the council's obligations set out in the above legislation.

Finance Director

122. This report asks the cabinet to note the different drivers for carbon reduction and the work already carried out, approve the new carbon reduction targets and to approve the carbon reduction action plan.
123. As this report is to approve the strategy, there are no specific financial implications to address, the salix fund and the £500k budget agreed during 2011/12 budgets are expected to meet current commitments.
124. The financial position should be closely monitored, additional general fund funding requirements should be bid for through the budget setting process, while being mindful of funding uncertainty beyond 2012/13, and the requirement that additional savings will be required to meet new commitments in 2012/13.

Head of Home Ownership

125. The current partnering contracts include specifications for cavity wall insulation, anticipated that this will be installed as part of Housing's capital programme. If this work is to be omitted in the future then the specifications must be excluded from the works packages. Additionally, leaseholders may query whether previously installed or currently proposed insulation is necessary and therefore chargeable under the lease, or not necessary making it a non-chargeable improvement.
126. Should cavity wall insulation be carried out in the future using external funding, then Home Ownership Services must be informed so that the cost is not included in the service charges.
127. Leaseholders perceive district heating systems to be a very expensive option, both in terms of fuel and maintenance. There is frequent lobbying to replace district heating systems with individual boilers, often supported by ward councillors. If the Council is proposing to continue with district heating then it should be clearly understood that decommissioning is not an option, and the benefits of the systems disseminated.
128. Where the Council decides to upgrade its district heating systems using alternative methods of fuel supply, eg SELCHP, it is impossible to carry out the statutory consultation with leaseholders and an application must be made to the Leasehold Valuation Tribunal for dispensation in order to be able to service charge the leaseholders for the costs of the communal heating over £100 per annum. Again, such applications normally lead to objections from leaseholders who involve their local ward councillors. The reasons behind the decision must be made clear so that the Council's purpose is understood.

129. Careful consideration must be given before entering into any agreement with an external agency to lease roof space for photovoltaic systems. If there is a break clause and penalty then this could prove expensive for the Council in circumstances where leaseholders exercise their right to buy the freehold of their block. This is particularly pertinent for street properties, so any such scheme should be considered only for larger blocks which are likely to remain in the Council's ownership.

Head of Procurement

130. All procurements arising from the implementation of the Energy and Carbon Reduction Strategy will follow the Council's gateway process.

BACKGROUND DOCUMENTS

Background Documents	Held At	Contact
Salix fund papers Emissions database Government papers Warn Dry safe strategy	Tooley Street	Ian Smith

APPENDICES

No	Title
Appendix 1	Summary of proposals and forecast reductions by 2016
Appendix 2	Funding streams
Appendix 3	Examples of Salix funded schemes implemented to date

AUDIT TRAIL

Cabinet Member	Councillor Barrie Hargrove, Transport, Environment and Recycling		
Lead Officer	Gill Davies, Strategic Director of Environment and Leisure		
Report Author	Ian Smith, Acting Head of Sustainable Services		
Version	Final		
Dated	August 2011		
Key Decision?	Yes	If yes, date appeared on forward plan	May 2011
CONSULTATION WITH OTHER OFFICERS / DIRECTORATES / CABINET MEMBER			
Officer Title	Comments Sought	Comments included	
Strategic Director of Communities, Law & Governance	Yes	Yes	
Finance Director	Yes	Yes	
Cabinet Member	Yes	Yes	
Date final report sent to Constitutional Support Services			8 September 2011

Appendix One

SUMMARY OF PROPOSALS AND FORECAST REDUCTIONS BY 2016

	What	Who	When	tCO ₂	% Reduction
Housing	Recommendation 1 Gather baseline data from EPC's to identify properties that would benefit from energy efficiency measures	Housing (Rebecca Clements)	October 2011 to March 2012	Unknown	Unknown
	Recommendation 2 Housing Capital Investment Strategy (Warm, Dry, Safe) implemented	Housing (David Lewis)	On-going	6,300	3.1
	Recommendation 3 CHP will be considered as the preferred option for future district heating schemes/upgrades	Housing (David Lewis)	On-going	Unknown	Unknown
	Recommendation 4 CHP will be installed in Acorn site if financially viable	Housing (David Lewis)	On-going	1,590	0.8
	Recommendation 5 SELCHP scheme to progress if viable	Environment and Leisure (David Gee)	October 2011	8,000	3.9
	Recommendation 6 CERT and CESP funding sought where possible	Housing (Rebecca Clements)	On-going	Unknown	Unknown
	Recommendation 7 LED lighting trials	Housing (Chris Baxter)	On-going	Unknown	Unknown

	Recommendation 8	Housing	On-going	1,000	0.5
	Explore viability of roof lease schemes for the whole Council	(Rebecca Clements)			
	Expected outcomes of the above proposals			16,890	8.3
	Progress to date			14,950	6.7
		2016 Target		31,840	15

Operational Stock including Schools	What	Who	When	t CO ₂	% Reduction
	Recommendation 9	Environment and Leisure	April 2012	N/A	N/A
	Paying and reporting against new CRC legislation	(Ian Smith)			
	Recommendation 10	Environment and Leisure	On-going	1,502	3.7
	Utilisation of SALIX funds	(Ian Smith)			
	Recommendation 11	All departments – driven by Project Board Chaired by Strategic Director of Environment and Leisure	October 2011	1,850	4.4
	Project to promote good housekeeping (turning off lights, computers etc) and reporting energy consumption to sustainability team				
Recommendation 12	Finance and Resources	On-going	2,423	6	
Modernise Two	(Robin Rogers)				
Recommendation 13	Environment and Leisure	October 2011	375	0.9	
Fusion encouraged to pilot RE:FIT on Seven Islands and other leisure centres	(Adrian Whittle)				

	Recommendation 14 Fusion will sign up to the Council's Green Buildings initiative	Environment and Leisure (Adrian Whittle)	October 2011	Unknown	Unknown
	Recommendation 15 School's Capital Investment Programme continues to build to BREEAM 'very good' standard	Children Services (Kerry Crichlow)	2011/12	1,310	3.2
	Expected outcomes of the above proposals			7,460	18.2
	Progress to date			3,418	8.4
	2016 Target			10,878	26.6
Borough	What	Who		tCO₂	% Reduction
	Recommendation 16 Exploration of 'Green Deal' proposal with other boroughs and lobby Government to ensure the scheme is suitable for Southwark	Environment and Leisure (Ian Smith)	October 2011 to April 2012	Unknown	Unknown
	Recommendation 17 Where appropriate, promote Green Deal type scheme to occupiers of Council's commercial stock	DCE (Steve Platts)	2012/12	Unknown	Unknown
	Recommendation 18 Increased membership and participation of the 200 Club	Environment and Leisure (Ian Smith)	Dec 2011	Unknown	Unknown

	Recommendation 19 Creation and adoption of a formal policy to apply a Green Fund to new development, along similar lines to the Affordable Housing mechanism	Regeneration and Neighbourhoods (Simon Bevan)	April 2012	Unknown	Unknown
	Recommendation 20 Identification and promotion of suitable decentralised energy network locations	Environment and Leisure (Ian Smith)	On-going	Unknown	Unknown
	Decarbonisation of the grid	Central Government		335,200	20.2
	Council measure (outlines above)	Council wide		24,350	1.4
	Expected outcomes of the above proposals			359,550	21.3
	Progress to date			18,980	1.1
	2016 Target			378,530	22.4

Appendix Two FUNDING STREAMS

Internal

Salix is an internal loan fund available to pay for energy saving measures to be installed in the Council's operational estate that have a payback of five years or less. The fund is repaid from energy bill savings. The fund was created in 2010 with £200K external contribution from Salix Finance (a Government backed organisation) and £200K match funding provided by the Council.

External

RE:FIT is a London Development Agency (LDA) mechanism to retrofit London's public sector buildings. With this the client (e.g. Fusion) would engage a contractor to identify, finance and install a set of measures into a set of buildings (e.g. the leisure centres) to deliver a predetermined energy saving (e.g. 20%) for a predetermined payback (e.g. five years). Since the contractor bears the risk of any shortfall (and would have to rectify this by installing more measures), the arrangement provides enough security for the client to borrow the upfront capital if required. This mechanism was set up by the LDA who have established a framework contract of contractors able to deliver the work and a £100 million fund (The London Green Fund) where not for profit bodies can access funding (at rates similar to the Public Works Loan Fund). The GLA pilot of RE:FIT on 42 buildings cut energy by 28% per site and delivered £1 million bill savings pa (for a £7 million investment – a 7 year payback).

London Green Fund is a £100 million fund set up to invest in schemes that will cut London's carbon emissions. Support will include loans to organisations wanting to use the RE:FIT mechanism and investment/ other support for medium to large scale decentralised energy systems.

RE:NEW is a LDA mechanism to retrofit London's homes with energy efficiency measures that Southwark was involved in piloting. In 2010, the London Development Agency (LDA) awarded the South East London Housing Partnership (SELHP) £503,594 in 2010-11 and £412,031 in 2011-12 to roll out the RE:NEW programme across the sub-region. SELHP consists of the London Boroughs of Bexley, Bromley, Greenwich, Lewisham and Southwark.

Nunhead and Dulwich wards were selected for roll-out of the RE:NEW scheme in Southwark. These wards were selected on the basis of their high potential for loft and cavity wall insulation and the fact that they are appropriately sized to deliver the target number of visits required by the LDA.

Southwark is the lead borough for finance and procurement under SELHP. In 2010, Southwark commenced a procurement exercise to select a contractor to deliver RE:NEW across the sub-region. The procurement exercise consisted of a mini-tender to select a contractor from an LDA framework.

In November 2010, the LDA announced that funding would no longer be available to deliver the scheme hence the procurement exercise came to a halt. In March 2011 it was announced that funding had been reinstated, although at a lower level than originally planned. £707,500 is now available to deliver RE:NEW across the London Boroughs of Bexley, Bromley, Greenwich and Southwark which works out at £176,875 per borough (Lewisham are procuring a separate scheme). The scheme must be completed by March 2012.

Approximately 6,000 home energy advice visits will take place across the SELHP sub-region. 1,500 of these visits will be delivered in Dulwich and Nunhead wards, resulting in savings for Southwark of approximately 750 tonnes CO₂ per annum. The CO₂ savings are based on an average of 0.5 tonnes CO₂ per household

Green Deal: from 2012, the Government is proposing that householders will be able to take out a loan of up to £6,500 to have energy efficiency measures installed in their home. This loan will be attached to the property and will be repaid through the energy bill savings. Measures installed will be based on an independent audit and the scheme is likely to bring lots of new providers into the market. A similar scheme will be available to businesses. This scheme is not yet in place and so subject to change.

CERTS/ CESP/ Eco: these are all legal obligations on energy suppliers to reduce CO₂ from homes by funding measures. CERT funds free loft and cavity wall insulation for those over 70 or in receipt of certain benefits. CESP was an attempt to encourage suppliers to fund a 'whole house' package of measures for homes in deprived areas such as the Peckham Low Carbon Zone. Eco will replace CERT in 2012 and will provide additional support for solid wall insulation.

Feed in Tariff (FiT) and Renewable Heat Incentive (RHI) are new financial incentives to install electricity generating (FiT) and heat generating (RHI) renewable energy systems. Systems receive a guaranteed income per unit of energy generated for the lifetime of the system. For example, a typical (2.2kW) domestic photovoltaic (PV – solar electric) installation costing £12,000, would earn around £920pa providing the householder an 8% return on his/her investment.

Appendix Three EXAMPLES OF SALIX FUNDED SCHEMES IMPLEMENTED TO DATE

Site	Measure	Installed Cost	Bill Savings	Payback (yrs)	CO ₂ (t CO ₂)
Copeland Road Depot	Lighting Upgrades	£2,656	£575	4.6	3.0
Coroner's Court	Lighting Upgrades	£1,518	£358	4.2	1.7
	Pipework Insulation	£1,883	£1,187	1.7	6.1
Damilola Taylor Centre	Lighting Controls	£1,200	£501	2.4	2.0
Frensham Street Depot	Lighting Upgrades	£7,425	£1,912	3.9	10.0
Keyworth Street Hostel	Lighting Upgrades	£2,864	£610	4.7	3.2
Kingswood House	Lighting Upgrades	£6,034	£1,217	5.0	6.4
Newington Library	Lighting Upgrades	£9,718	£2,412	4.0	12.6
Peckham Library	BMS Controls	£7,730	£2,269	3.4	12.6
Sandgate Street Depot	Lighting Upgrades	£9,920	£2,032	4.9	10.6
Sumner House	Heating Upgrades	£3,750	£1,977	1.9	11.0
	Lighting Upgrades	£12,980	£3,956	3.3	20.5
	Time Switches	£600	£393	1.5	2.7
	Voltage Optimisation	£7,438	£1,614	4.6	11.1
	Pipework Insulation	£2,243	£1,647	1.5	8.5
Thomas Calton Centre	Lighting Upgrades	£16,596	£3,887	4.3	20.3
Bournemouth Road	Boiler Replacement	£11,040	£2,401	4.6	11.1
	Lighting Upgrades	£14,765	£3,945	3.7	20.0
Cerise Rd Car Park	Voltage Optimisation	£11,711	£5,315	2.4	36.1
Camberwell Library	Draught Proofing	£3,391	£878	4.2	4.5
Mabel Goldwyn House	Pipework Insulation	£1,804	£1,145	1.7	5.9
Dulwich Library	Lighting Upgrades (Relamping)	£546	£552	1.1	2.7
	Draught Proofing	£5,316	£1,421	4.1	7.3
	Lighting Upgrades (Controls)	£2,475	£1,238	2.2	6.1
	Pipework Insulation	£1,217	£626	2.1	3.2
	TOTAL	£145,601	£43,441	3.2	236