

Ealing Council Energy Strategy 2013-2018

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Background

Emissions from buildings account for 37% of total UK greenhouse gas emissions, making a strong case for council leadership to improve environmental performance and the economic position of the organisation and residents of the borough. National, regional and local energy targets tend to be set in relation to emissions of carbon dioxide (CO₂) into the atmosphere. A key contributor to these emissions is the heating, cooling and powering of buildings. The conditions produced in buildings by poor heating and cooling affect the health and wellbeing of their occupants. In the domestic sector, energy and public health targets require that such effects on vulnerable residents are addressed.

The purpose of this strategy is to establish the intentions of the council related to energy use and production and to recognise the significant relationship between energy efficiency and health. This strategy identifies the ambitions of the council organised by the key drivers:

- › Meeting our regulatory obligations
- › Reducing energy consumption and improving operations
- › Utilising renewable energy to secure the cleanest supply possible
- › Delivering value by achieving the best price for energy
- › Protecting the health and wellbeing of our most vulnerable residents
- › Seeking inspired solutions that deliver learning and results
- › Achieving community benefits as a result of our actions

Targets have been agreed as part of this strategy, which will guide internal resource allocation and decision making. The action taken as a result of this strategy will improve domestic and corporate energy efficiency in Ealing, save council resources and assist vulnerable residents in both social and private housing.

Energy Strategy Targets:

- 1) Reduce domestic CO₂ emissions by 40% on 2010 levels by 2020
- 2) Raise SAP rating of all properties judged to be in lowest EPC bands (G, F and E) to minimum SAP 70 (EPC 'C') by 2018
- 3) Reduce corporate CO₂ emissions by 22% on 2012/13 levels by 2017/18
- 4) Reduce corporate energy consumption (KWh) by 20% on 2012/13 levels by 2017/18
- 5) Deliver additional solar photo voltaic (PV) panels on council owned homes, bringing the total to 500 across the estate
- 6) Complete the first phase of renewable technology installation by March 2015
- 7) Reduce fuel poverty by 30% by 2016 from 2011 levels

Energy costs and carbon emissions

Electricity and heating from burning fossil fuels and natural gas are the most common sources of energy in the UK, but electricity is significantly more carbon intensive per unit than gas. A Kilowatt Hour (KWh) of electricity means almost 3 times the amount of CO₂ is released to the atmosphere than is released using a KWh of gas.

The price of energy has changed significantly in recent years. The price has increased from 2004 to 2011 by 121% for gas and 79% for

electricity¹. It is difficult to accurately predict the future prices of energy as they are sensitive to multiple factors. Current predictions from The Department for Energy and Climate Change (DECC) include a gas price increase of 37% by 2018². National Grid estimates that the worst case scenario for electricity prices would be a 30% increase by 2018³. Government supports the increase of large scale renewable energy⁴, meaning the UK's dependency on fossil fuels will gradually be reduced.

Energy prices are certain to be volatile and change according to market confidence. This volatility of energy price suggests that the council should prepare for future price rises for its corporate estate. It should also seek to assist and encourage residents in preparing themselves against increasing fuel costs.

Energy use, health and well-being

Some population groups are vulnerable both in terms of health and income. If they are unable to heat their homes adequately, they are said to be in fuel poverty. This is normally due to the combination of their low income and the energy inefficiency of their homes. They could also be susceptible to ill health because of the cold. High fuel costs make it more difficult for fuel poor households to achieve affordable warmth.

¹ Household energy bills – impacts of meeting carbon budgets. Committee on Climate Change, December 2011.

²

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239937/uep_2013.pdf. Accessed 01/11/13. Based on 2012 prices.

³ http://www.nationalgrid.com/NR/rdonlyres/86C815F5-0EAD-46B5-A580-A0A516562B3E/50819/10312_1_NG_Futureenergyscenarios_WEB1.pdf

Accessed 01/11/13. Based on 2012 prices.

⁴ <https://www.gov.uk/government/publications/uk-solar-pv-strategy-part-1-roadmap-to-a-brighter-future>

Vulnerable residents may therefore require emergency support during cold weather and, for the longer term, help to invest in energy efficiency measures.

The impact of cold weather on health is predictable and mostly preventable. Direct effects of winter weather include an increased incidence of heart attack, stroke, respiratory disease, influenza, falls and injuries and hypothermia.

Indirect effects of cold include mental health illnesses such as depression, and carbon monoxide poisoning from poorly maintained or poorly ventilated boilers, cooking and heating appliances. Fuel poverty and cold-related illnesses result in increased pressure on hospitals, emergency departments and GP surgeries.

Expected Benefits of Delivering the Strategy

- › Financial savings to residents and the council through reduced energy and building maintenance costs
- › Reduction in the council's Carbon Reduction Commitment and Energy Efficiency Scheme (CRC)⁵ liability
- › Income generation through utilising feed-in tariffs (FIT)⁶ for renewable energy generation
- › Demonstrating leadership in the borough with flagship energy-saving projects
- › Development of local case studies
- › Positive changes in staff behaviour at work which could also lead to positive changes in behaviour outside work
- › Reduced cold-related ill health, excess winter deaths and winter hospital admissions

Meeting our obligations

The UK and European Union have used policy and legislative authority to counteract climate change and encourage the improvement of building energy performance.

National Target

The Climate Change Act 2008 states that the UK must reduce its Greenhouse Gas Emissions by 80% (from a 1990 baseline) by 2050.

⁵ The CRC is a mandatory scheme aimed at improving energy efficiency and cutting emissions in large public and private sector organisations. Participants are required to monitor their energy use, and report their energy supplies annually and purchase and surrender allowances to offset their emissions.

⁶ Feed-In Tariffs are payments to ordinary energy users for the renewable electricity they generate; a Government scheme that pays people for creating their own "green electricity".

Greater London Authority (GLA)

- › Reduce London's CO₂ emissions by 60% (from a 1990 baseline) by 2025
- › Improving the energy efficiency of London's homes and buildings
- › Improve the energy efficiency of London's public sector buildings
- › Ensuring that 25% of London's energy is delivered through efficient decentralised energy by 2025

CRC Energy Efficiency Scheme (CRC)

CRC is a mandatory scheme for any organisation that during the qualification year consumes 6,000MWh or more of electricity (non-domestic). Participants must report their carbon emissions annually and purchase and also surrender carbon allowances to the Environment Agency. Allowances cost £12 per tonne of CO₂ in the first phase, £16 per tonne in the second (1 April 2014 to 31 March 2019). Ealing's spend (including schools) on allowances is just over £635,000 from the first three years. The cost to the corporate estate is expected to increase due to the inclusion of street lighting and the rise in allowance price; however schools are not included in phase 2 of the scheme. Ealing will be participating in the scheme for the foreseeable future.

Green Deal and Energy Company Obligation

Green Deal is a government policy that permits loans for energy saving measures to be installed into domestic properties. The loans are repaid through the utility bills; the savings generated by the measures should always outweigh the cost of repayments for the measure itself (this is known as the "Golden Rule"). Government has asked local authorities to play a role in encouraging residents to take up the Green Deal. The Energy Company Obligation (ECO) is aimed at improving energy

efficiency of homes that are most difficult to heat for various reasons and is funded by the energy companies. Some strands of the available ECO funding aim to reduce fuel poverty by providing heating improvements at the homes of low income households with inefficient and expensive heating systems.

Energy Performance Certificates (EPCs)

All domestic and commercial properties available to buy or rent in the UK must have a valid EPC. They show how energy efficient a building is on a scale of A (very efficient) to G (inefficient). From 1 April 2012 customers in the UK that wish to make use of the Feed-in Tariff (FIT) available from the government for electricity generation the building must have an EPC showing at least a D rating.

Display Energy Certificates (DECs)

DECs are a legal requirement in buildings that are used by the public with gross internal areas (GIA) of 500m² or greater. The purpose of a DEC is to raise public awareness of energy use and specifically the energy use of a specific building. DECs provide energy ratings A (most efficient) - G (least efficient) based on the amount of energy the building has used within the last year. DECs must be clearly visible to the public and be accompanied by an “advisory report” which contains recommendations for improving the energy performance of the building.

Greenhouse Gas (GHG) Reporting

Reporting our annual greenhouse gas emissions is not a legal requirement but it is recommended by central government and the GLA. The council will report its GHG emissions each year in line with these recommendations. 2012/13 will be the first report to be published; the emission figures for 2011/12 and 2012/13 will also be

included, calculated using the new CO₂ conversion factors published by DEFRA.

Home Energy Conservation Act (HECA)

The Home Energy Conservation Act 1995 requires all English authorities to set out the energy conservation measures that the authority considers practicable, cost-effective and likely to result in significant improvement in the energy efficiency of residential accommodation in its area.

The ‘further reports’ published by each authority in 2013 are the starting point for action by central and local government to significantly improve the energy efficiency of residential accommodation across the country, a legal requirement under the Climate Change Act 2008 and a key strategy for reducing fuel poverty.

Ealing Council’s HECA Further Report 2013⁷ sets out the energy efficiency initiatives which the council will deliver between in 2013-2015. The government requires that the report be updated every two years.

National Cold Weather Plan

The Department of Health produced the first National Cold Weather Plan in 2011 for the NHS, local councils and other public services to explain how to be prepared for winter and help people stay healthy during cold winter weather. Following the National Plan, Ealing has also produced its own Severe Weather Plan, combining preparatory actions for cold weather and heat waves. Local authorities need to prepare in partnership with health and other services all year round by

⁷http://www.ealing.gov.uk/info/200631/strategies_plans_and_partnerships/1585/home_energy_conservation_act_heca_further_report_2013

supporting residents to access energy efficiency measures and necessary information to keep warm and healthy during extreme winter weather and cool in severe heat.

Reduce & Improve: use less energy

Why is this important?

- › Rising energy prices impact on council spending
- › High energy costs impact on residents' ability to heat homes affordably
- › Uncertainty of energy supply
- › Environmental impact of consuming energy derived from fossil fuels that are a limited resource, contribution to climate change and degradation of air quality
- › It is good practice to improve operations to reduce waste

Current status

Housing

Data produced by DECC⁸ indicates that for Ealing the per capita domestic energy use in 2010 was 2.0 tCO₂, while the total domestic energy use was 652.5 kt CO₂. Since this baseline was set in Ealing's HECA report for reducing CO₂ emissions by 40% by 2020, statistics published for 2011 showed a 15% reduction of per capita emissions.

⁸ DECC 2011 carbon dioxide emission estimates at Local Authority and regional level, www.gov.uk/government/organisations/department-of-energy-climate-change/series/sub-national-greenhouse-gas-emissions-statistics

The council currently owns and maintains 12,969 domestic properties, with a current SAP⁹ average for council stock – 67 (EPC¹⁰ 'D'). Carbon emissions per household in the council's stock average 2.33 tCO₂. Eight strategic priorities have been identified for the recently adopted HRA Asset Management Strategy, including, "to develop a long term strategy to improve the thermal efficiency of HRA stock, reducing carbon emissions and fuel poverty". The Decent Homes programme has been completed, but that programme only addressed certain aspects of thermal efficiency, leaving real scope for further improvements in this regard. For example, wall insulation can add significant SAP points to a property rating, but was not included as a measure under Decent Homes. Within the council's stock, SAP ratings as currently recorded range from a low point of 27 to an excellent 99. There are potential savings from improved energy efficiency for both residents and for the council, which is responsible for energy use in communal areas of much of its residential accommodation.

The council has previously carried out insulating programmes and district heating upgrades to take advantage of funding schemes

⁹ The Standard Assessment Procedure (SAP) is the methodology used by the Department of Energy & Climate Change (DECC) to assess and compare the energy and environmental performance of dwellings. The SAP rating is based on energy costs associated with space heating, water heating, ventilation and lighting, less cost savings from energy generation technologies. It assumes a defined level of comfort and service provision, based on standardised occupancy. It is adjusted for floor area so that it is essentially independent of dwelling size for a given built form. SAP ratings are expressed on a scale of 1 to 100, the higher the number the lower the running costs.

¹⁰ An Energy Performance Certificate (EPC) gives a property a rating from A (most efficient) to G (least efficient), based on the SAP energy efficiency rating within defined ranges and estimated carbon dioxide (CO₂) emissions.

through energy suppliers (such as CERT) but there remains further potential that needs to be identified in detail. The Voids Team has also invested in some demonstration projects to evaluate the effectiveness of different energy efficiency interventions beyond Decent Homes measures to inform future investment. Measures being evaluated include solar water heating, full loft insulation and solid wall insulation. One property received government funding from the Technology Strategy Board to test innovative measures. These included heated windows, skirting heating and an air source heat pump, as well as a high standard of air tightness and external wall insulation.

Copley Close is an example of estate regeneration being completed including 213 new build homes to Code for Sustainable Homes Level 4¹¹ and 450 refurbished flats including improved efficiency of district heating systems, double glazing, cavity wall insulation and roof insulation.

According to Ealing's Private Sector Stock Condition Survey 2010, 44% of private sector homes had a SAP rating of 54 (EPC 'E') or less, while the average was SAP 55 (just in the range of EPC 'D'). The council has worked in partnership with West London Boroughs to operate programmes providing insulation and heating system improvements from 2007 (and earlier) to 2012, while external funding was available, including the government's Warm Front funding. Notable among these programmes was the West London Warm Zones, a decent homes initiative for the private sector. The West London partnership also

¹¹ The Code for Sustainable Homes works on calculating points for percentage improvements against a number of environmental criteria, including mandatory requirements for energy efficiency. Level 4 aims for a 44% 'dwelling emissions' improvement on Building Regulations Part L target emission rates, rather than specifying a minimum SAP.

participated in the GLA RE:NEW programme offering home energy advice visits.

Vulnerable groups in both council and private sector housing were further targeted by the council for advice, easy energy efficiency measures and referrals for grant support using funds accessed from the Department of Health 'Warm Homes Healthy People Fund' over the winters of 2011-2012 and 2012-2013. The Council's Home Improvement Agency contributed to delivery of the 'COSIE' scheme through this funding. All these programmes will have helped to improve SAP ratings for some residents, but there remain many who will either need help or encouragement to invest in energy efficiency.

The council places some vulnerable households in temporary accommodation in the private rented sector and these properties have been included for targeting to improve energy efficiency when grant support has been available (specifically from a short term DECC funding programme).

Corporate

The buildings the council uses and maintains are responsible for the majority of the council's energy use and greenhouse gas emissions. The council's corporate portfolio includes a variety of buildings such as town halls, community centres, offices, day centres and schools. These buildings vary in size, age and energy performance.

The council's electricity and gas bill (including schools, excluding social housing) in 2012/13 was just under £5.2 million which equates to over 94,000MWhs of energy.

The council has installed energy conservation measures in three corporate buildings through the Mayor of London's RE:FIT framework.

This framework utilises energy performance contracting where an energy service company (ESCO) implements a project along with a guarantee on the energy savings. If the savings fail to materialise the ESCO must take action to ensure they do or pay the difference direct to the council. The three buildings that were included were Perceval House (the council's largest building), Ealing Town Hall and Greenford Hall. The combined effect of the work is a 29.8% decrease in energy consumption and a net annual cost saving of £200,000.

Targets

Reduce & Improve: use less energy

Housing

Target 1: Reduce domestic CO₂ emissions by 40% on 2010 levels by 2020

Target 2: Raise SAP rating of all properties judged to be in lowest EPC bands (G, F and E) to minimum SAP 70 (EPC 'C') by 2018

Corporate

Target 3: Reduce corporate CO₂ emissions by 22% on 2012/13 levels by 2017/18

Target 4: Reduce corporate energy consumption (KWh) by 20% on 2012/13 levels by 2017/18

How will the council achieve it?

Improving performance

Housing

A key priority set out in the 2013 HRA Asset Management Strategy is to develop a longer term strategy to improve thermal efficiency of the housing stock. Important in developing this will be information that is provided by the stock condition survey and setting SAP benchmarks for targeting improvements within the stock and levels to achieve.

The council will aim to set a minimum SAP rating below which a property will no longer be viewed as sustainable both in environmental terms and affordable warmth terms. From 2018 new regulations will mean that the council will not be able to re-let properties that are below EPC level E (minimum SAP 39). A key action will be to review the SAP and EPC ratings of these properties now and investigate the options for improving them towards an affordable warmth standard. The council will also target properties that are currently at EPC level E. In order to begin raising standards within the stock the council aims to raise all the lowest rated properties to an efficiency higher than the current average, i.e. to EPC level C. The minimum standards set will also be kept under review for continually improving performance. Energy Use and Thermal Efficiency has been identified as a principal topic for the 30-year Investment Programme to be established as part of the HRA business planning process to forecast expected expenditure and income.

Efficiency also holds a key role in the newly developed Ealing Standard for Accommodation, on which future investment programmes will be

based. The Standard specifies high quality double glazing and energy efficient boilers, draught and sound proofing (where cost effective) and roof/cavity/wall insulation.

Private sector housing

The council will engage with Green Deal and ECO to encourage private sector residents to improve the energy efficiency of their homes. The council is a member of 'Green Deal Together' (GDT), a community interest company formed with other local authorities to deliver Green Deal advice and assessments. GDT is a registered Green Deal Provider and will be able to deliver Green Deal Plans leading to energy efficiency installations for residents who elect to use them. Officers will work with the council's planning department to clarify and inform residents on any planning issues that may attach to Green Deal improvements, such as external wall insulation, particularly in conservation areas.

The council will seek alternative external funding to assist private sector investment in energy efficiency measures for vulnerable groups. Officers will work with other council departments, public health and external agencies to target those in particular need (see Affordable Warmth section).

The council will investigate obtaining EPC data for properties in Ealing, where this is available, to help identify areas for targeting with energy efficiency advice and available improvement or grant offers.

Where the council has placed households in temporary accommodation in the private sector, officers will work with landlords to improve the energy efficiency of their properties.

In their operation of the Housing Health and Safety Rating System, the Regulatory Services Team identify properties with Category One Hazard conditions of Excess Cold or Excess Heat. The Sustainability Team will work with Regulatory Services to assist, where grant funding allows, in improving conditions for private tenants who they recognise as in need of improved heating or cooling. The council will engage with private and leaseholder landlords through events such as the Landlords' Forum, informing them of any available grant funding or tax allowances to assist them with energy efficiency improvements.

The council's forthcoming Private Sector Housing Strategy includes the aim to improve energy efficiency and reduce fuel poverty in the private sector. It will also set out associated drivers and action planned to achieve this.

Corporate

The council will set a good example to other stakeholders in the borough by demonstrating good practice in reducing this energy use.

- Assessment of buildings

The council will complete energy surveys at the highest energy consuming buildings within the corporate portfolio. The recommendations arising from these assessments will be used as the foundation of a business case for the procurement of energy efficiency measures. Many of the recommendations involve actions around improving management of resources, and equipment. These actions can be carried out "in house" at no or very low cost but still may yield significant energy savings.

- Energy efficiency projects

The council will look for opportunities to implement energy efficiency projects throughout the corporate estate, including the replacement of boilers, installation of LED lighting and controls and improving building fabric to improve thermal performance.

Building to a high energy performance standard

Housing

The council's new build dwellings are designed to Code for Sustainable Homes Level 4 or above to include 25% renewables. Units are designed so that they are constructed where possible to a minimum energy rating 10% above the Dwelling Emissions Rate (DER) required by Building Regulations.

New build contracts include the requirement to address the fabric first before introducing technological solutions. This ensures the best possible energy efficient and sustainable homes with minimum maintenance requirements.

Corporate

The council adheres to planning policy when building new corporate properties. See "related strategies and policies" section for council planning policy. When funds are sought for new builds each bid is examined to ensure that sufficient sustainability measures are included within the design, once funds are allocated the design is reviewed again prior to construction to ensure compliance.

Changing behaviours

Housing

Teaching residents to use their homes in the most efficient manner is a priority of the energy strategy. Engaging residents using communication channels such as Around Ealing and the council's internet can assist them in preparing for winter months and providing access to improvement programmes that are available. For residents that are not online, one to one contact is essential. Two 'green champions' have been trained to be resources within the community, including for information events. Training in fuel poverty awareness and basic energy saving advice will continue to be provided for frontline staff to ensure that they recognise where vulnerable residents may need advice and further support, particularly in winter. The council will investigate possible incentives for residents to improve home energy efficiency such as offering council tax rebates.

Corporate

Energy efficiency campaigns directed at council employees will also be promoted on the council's intranet to engage council staff to reduce energy wastage at work. Since July 2013 new council staff must complete a "green induction" as part of their formal corporate induction to the council. The induction includes topics such as recycling practices, the energy efficiency of buildings and also wider issues concerning climate change. This new induction will give all new staff members the grounding in knowledge necessary to behave in a sustainable manner, ensuring that wastage of resources is kept to a minimum both at work and at home.

Among staff, fifty Green Champion volunteers, who have an interest in sustainability and are passionate that the council is run in sustainable and efficient way, are also instrumental in bringing about behaviour change and demonstrating best practice internally. Periodic meetings and training sessions aim to keep the group connected to current

events and give the opportunity to devise projects that improve the council's environmental performance.

The council acknowledges its leadership role in promoting energy efficiency and renewable energy technologies in its corporate estate. The council will install visible measures on buildings and publish the energy savings that have been achieved.

Being better managers/operators

Housing

The Maintenance and Repairs Team will identify continuous improvement opportunities to ensure that maintenance and operations regimes reduce energy consumption. Bill validation has identified errors leading to significant refunds and the development of a performance database. In the future the data will be used to benchmark buildings against one another to identify energy wastage and target efficiency investments. The council will consider the possibility of ring fencing the budget for energy saving measures to retain savings made for further investment in efficiency and maintenance.

The council will continue to pilot innovative measures where possible to evaluate their potential for savings before rolling them out to the rest of its housing stock. Opportunities will be sought for improving energy performance to reduce costs to the council in its own housing stock by reviewing the following:

- Where condensation issues arise, which accelerate building deterioration and maintenance costs. Improving insulation, along with ventilation and heating, can help to address condensation problems and therefore costs.

- Where running and maintenance costs attached to services in communal areas of council housing could be reduced by installation of, for example, lighting controls, energy efficient, long life LED lighting, 'light pipes' (which introduce natural light from the roof level using a reflective tube) or voltage optimisation.

Corporate

The council's energy manager and Facilities Management Team develop projects to improve control of the council's buildings and increase efficiency in heating and cooling across the council portfolio. Improved energy data quality captured and maintained by the council assists these teams in understanding where to target resources for improvement. The council has recently procured an online database holding energy consumption of buildings within the corporate estate. This system enables consumption at specific sites to be monitored and actively managed. It is important that the council consider the energy efficiency of all capital investments to ensure that energy targets are met, and the processes for assessing energy impacts resulting from capital investment is being strengthened.

Utilising networks and accessing funding to improve building performance

Housing

The council has a good track record of attracting external funding to improve energy performance. Recent changes to Government policy mean that the single national government funded programme (i.e. Warm Front) intended to assist residents to improve building performance, particularly those vulnerable to fuel poverty, has been replaced by the Energy Company Obligation (ECO). This is the

responsibility of the major energy suppliers. At the same time, the Warm Homes Healthy People funding from the Department of Health will not be continued following grants made in winters of 2011 and 2012. Local authorities have been asked instead to prioritise affordable warmth work programmes within their localised health allocations. The council will innovate to fill this programme and funding gap.

Corporate

The council has joined a collaborative procurement exercise through West London Alliance (WLA) to work jointly develop a RE: FIT tender to secure value for money across the sub region (see partnerships section for more details).

Renewable and Microgeneration: secure the cleanest supply possible

Why is this important?

There is overwhelming scientific evidence that climate change is happening and that human activity is causing it. Climate change is a global challenge but will have local impacts and thus needs to be tackled from all levels. To generate electricity fossil fuels are burned, producing greenhouse gases, such as CO₂. London's electricity and gas consumption causes 75 per cent of London's carbon dioxide emissions¹² and more than two thirds of the world's carbon dioxide emissions come from the production and use of energy, so energy policy has to play a major part in meeting the challenge of tackling climate change¹³.

Ofgem's Electricity Capacity Assessment Report 2013 assessed the risks to electricity security using information from the National Grid, and has concluded the risk to supply over the next six years has tripled since its report last year. The increased risk was due to "deterioration" of electricity supply and predicted high volumes of demands may not be met, causing electricity shortfalls to triple.

In combination with using energy more efficiently, generating energy from sources that emit low or even zero levels of greenhouse gases,

¹² Greater London Authority.

http://legacy.london.gov.uk/mayor/environment/climate-change/docs/ccap_summaryreport.pdf. Accessed 18/11/13.

¹³ Department of Trade and Industry.

<http://www.berr.gov.uk/energy/whitepaper/page39534.html>. Accessed 18/11/13.

such as renewable energy, can reduce the impact of climate change. CHP, also known as cogeneration, is the concurrent production of electricity or mechanical power and useful thermal energy (heating and/or cooling) from a single source of energy. CHP is a type of distributed generation, which, unlike central station generation, is located at or near the point of consumption. Instead of purchasing electricity from a local utility and then burning fuel in a furnace or boiler to produce thermal energy, consumers use CHP to provide these energy services in one energy-efficient step.

Another approach to reducing carbon emissions is to source electricity supplies with net "zero carbon" emissions, also known as "green tariffs". The energy companies offering these tariffs either generate or purchase energy from a renewable source. The council's three largest energy consuming supplies (street lighting, Perceval House and Greenford Depot) are currently on green tariffs. The tariffs were secured through the council's energy procurement company at the same cost as a normal supply.

Targets

Renewable and Microgeneration: secure the cleanest supply possible

Housing

Target 5: Deliver additional solar photo voltaic (PV) panels on council owned homes, bringing the total to 500 across the estate

Corporate

Target 6: Complete the first phase of renewable technology installation by March 2015

How will the council achieve it?

Generating our own energy with onsite renewable sources

Housing

The council has installed solar photo voltaic (PV) panels on street properties in its own existing housing stock since 2010. A mixture of third party agreements and council investment has resulted in 423 existing homes receiving the free electricity generated during daylight hours. The programme will continue to be implemented, as long as viable roofs and capital can be identified. There are physical limitations on which properties are suitable for installations. The council will investigate the potential for broadening the building types to include in future programmes. The council receives income generated by the Feed in Tariff (FIT) on those panels funded by its own capital investment. On new build homes, the council installs PV panels to all suitable houses and to flatted blocks. The FIT income from PV investment programmes will be ring fenced for investment in further energy efficiency measures as appropriate.

The Eastcote Lane new build scheme uses surplus heat from the Northolt Leisure Centre to heat the homes and provide constant hot water.

Other sources of renewable energy will be considered in new builds and refurbishment of existing stock. Opportunities from the Renewable Heat Incentive will be investigated once it is introduced for the domestic sector as anticipated in spring of 2014.

Corporate

Renewable energy projects

Investigate the feasibility of securing decentralised energy for 25% of the corporate estate's consumption in line with the GLA target.

Installing PV panels on the roofs of buildings, where it is feasible enables onsite electricity generation using sunlight. The government will pay "feed in tariffs" (FIT) for electricity generation, which is then guaranteed for 20 years.

Biomass boilers are a low carbon solution for heating and hot water. The boilers burn biomass fuel; of which the most common types used are wood chips and wood pellets. This type of boiler is cleaner to run than a conventional boiler, making fewer direct emissions to the atmosphere. The fuel used to make wood chips and pellets is sourced from coppicing trees or waste wood. Burning biomass fuels releases carbon recently absorbed by the growing tree and is replaced by regrowth of the tree. When fossil fuels are burnt, carbon that was stored millions of years ago is released into the atmosphere which is not removed through regrowth¹⁴.

However, there are a number of feasibility issues that relate to this type of technology such as ensuring there is sufficient space for the system not only to be installed (including fuel hopper) but also for the delivery of fuel (via lorry) on a weekly basis. Other issues include the location of the fuel source and the distance of travel to site and also concerns over the management (maintenance) of the system.

¹⁴ National Energy Foundation.

<http://www.nef.org.uk/renewableenergy/biomass.htm>. Accessed 01/11/13.

The Renewable Heat Incentive (RHI) is a government programme that provides financial incentives for the uptake of renewable heat. This is currently available to the non-domestic sector. These measures will be implemented where feasible across the council's properties subject to on-going economic viability and technical considerations.

and other public organisations in the region. The aim is to bring to market the joint public supply across London and sell the electricity to private organisations. This project is one of the first of its kind and opens up the possibility of local authorities being able to create income by generating and selling energy to third parties.

Supporting the exploration and development of district heating networks and combined heat and power (CHP) infrastructure

Housing

Whilst the opportunity to install CHP will be limited to housing stock with energy demands making it technically feasible, the council will continue to consider its application, particularly for sheltered housing. Additional barriers related to financial contributions from leaseholders also need to be addressed when testing the viability for application. The council will also consider small scale microgeneration for communal hot water supplies, where applicable.

Corporate

When evaluating the feasibility of projects such as biomass and CHP the council will work in partnership with other London borough councils who are already managing such technologies. The rationale behind this is to learn from the local knowledge available; ensuring that any lessons learned in London can be built upon rather than the council beginning with experimentation with the technology.

License Lite for CHP Units

The GLA is exploring the possibility of setting up a supply licence for electricity generated by CHP units run by the London Borough Councils

Value: deliver value by achieving the best price for energy

Why is this important?

The average cost of energy per UK household was £1219 in 2011, representing an 83.4% rise since 2000¹⁵. This upward trend puts continuous pressure on Ealing residents to devote more resources to pay for energy, leaving many households vulnerable. Fuel poverty is an issue of critical importance; the issue is discussed in greater detail in the Affordable Warmth section. A significant contributory factor is the price of energy. In Ealing it is estimated that 14,425 (12%) households are in fuel poverty¹⁶, a number which the council aims to reduce.

From the corporate perspective, energy contracts have seen a 228% increase in electricity costs between 2000 and 2013 and a 311% increase in gas costs over the same period. As the cost of energy continues on this trajectory, it is more important than ever that the council and its residents achieve the best price for energy.

How will the council achieve it?

Housing

Providing residents information and schemes to secure the best price

¹⁵ Department of Energy & Climate Change. Domestic energy price statistics. Table 2.6.2 Average expenditure each week on fuel per consuming household in the UK. <https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics>. Accessed 17/9/13.

¹⁶ DECC 2011 Sub-regional fuel poverty data: low income high costs indicator

According to research by Ofgem,¹⁷ 13% of surveyed UK gas customers and 14% of electricity customers switched their supplier in 2011. Over half of surveyed customers have continued with energy suppliers, never verifying that they are achieving the best price for their needs. Trustworthy resources exist to assist residents with switching. The council will signpost residents to resources and continue to promote local schemes whenever practical.

Providing residents advice to access benefits

Benefits advice is a vital aspect of supporting affordable warmth, since it not only maximises incomes for those who qualify for benefits, but can also help householders to meet eligibility criteria for accessing either the limited energy efficiency grants available or bill subsidies (such as Warm Homes Discount). It is also important to ensure that straightforward energy advice is easily accessible to all households. The council will continue to work with partners to give our residents access to benefits advice as funding allows, particularly in conjunction with grant schemes targeting vulnerable households. People who need help to maximise their income are also most likely to need advice on fuel debt. The council will continue to signpost to relevant helplines.

Corporate

Acknowledging and considering new ways to procure and generate energy

The council will periodically review the energy market to ensure the council is achieving best value. The onsite generation of energy will

¹⁷ <https://www.ofgem.gov.uk/ofgem-publications/39463/customer-engagement-energy-market-tracking-survey-2012.pdf>. Accessed 18/9/13.

also be explored and implemented where it demonstrates improved value for money.

Continuing to employ the flexible energy procurement approach via an energy procurement partner and by actively managing the portfolio to deliver best value

The council procures energy through an energy procurement company. This company is able to secure favourable rates through its large buying power. The council will continue to ensure that all council supplies are included within this central contract. There is flexibility within this contract that helps to ensure that the council achieves best value.

Utilising the local guidance network to ensure that value for money is being delivered through partnership working

The London energy project of which the council is a member provides up to date guidance and advice related in energy supply, including specific recommendations. The council will continue to review the information LEP provides and implement recommendations where applicable.

Affordable warmth: protect the health and wellbeing of our most vulnerable residents

Why is this important?

Affordable warmth is the ability to achieve adequate warmth within the home. The lack of affordable warmth is known as 'fuel poverty'. Traditionally, a household is said to be in fuel poverty if, in order to maintain a defined satisfactory heating regime, it would be required to spend more than 10% of its income on all domestic fuel use. The government has recently introduced a new method for calculating numbers of fuel poor households using the Low Income High Costs (LIHC) indicator. In Ealing it is estimated that 14,425 (12%) households are in fuel poverty¹⁸. A significant number (1886) of homes in Ealing lack central heating¹⁹. Private homes with low SAP ratings are more likely to be single person households and contain pensioners, vulnerable households and have low incomes.

Fuel poverty is different from general poverty in that householders' need for food, clothing and other goods and services is similar. In the case of fuel, household need varies depending on energy efficiency of homes and heating systems, health status and household behaviour, house size and under-occupation, and fuel prices. The variable degree of need means that household income is not always a reliable indicator of the likelihood of a household being fuel poor and that all of these factors have to be considered. Many households may be forced to choose between expenditure on fuel or other essential items such as

¹⁸ DECC 2011. Sub-regional fuel poverty data: low income high costs indicator.

¹⁹ 2011 Census.

food. Alternatively, if they ration their fuel consumption they can put themselves at increased risk of cold-related illness or even death.

Older people, families with young children and those living with a disability or long-term illness are especially vulnerable to fuel poverty as they tend to spend more time in the home and therefore have greater needs for fuel than others. Where these households are also on limited incomes, they lack access to capital that could be used to improve their situation through energy efficiency improvements to the home, heating system and to household appliances.

Fuel poor households are likely to suffer a number of associated effects besides the fact of living in unsatisfactory, uncomfortable cold conditions. Buildings with poorly insulated fabric and poor ventilation are also prone to damp due to condensation, which can cause faster deterioration of materials, with implications for maintenance and lifetime of the housing stock.

Cold and damp can have serious effects on health, as recognised in the Housing Health and Safety Rating System, with older people and young children being particularly susceptible. Cold homes may exacerbate problems associated with cardiovascular illness and the onset of stroke or heart attacks, whilst damp and poorly ventilated homes are associated with a range of respiratory and allergic conditions such as bronchitis, pneumonia, asthma. Cold homes can also impact on conditions such as rheumatism or arthritis and may affect those people with poor mobility, thus increasing the risk of falls and other household accidents.

Fuel poverty has been linked to the many excess winter deaths still occurring in the UK among people aged over 65 years old (an estimated 24,000 excess winter deaths in England and Wales in 2011/12). At least 30% of excess winter deaths may be attributable to

indoor cold²⁰. Data for 2008-2011 indicates an Excess winter Death Index of 17.2% and an average of 103 excess winter deaths per year in Ealing²¹. Death is evidently the most extreme outcome of cold homes but excess winter hospital admissions are evidently far more numerous. Cold-related illness leads to increased winter pressure on hospitals, emergency departments and GP surgeries, with serious implications for costs to the NHS.

Living in cold, damp and poorly ventilated homes not only causes discomfort but is stressful and shown to affect householders' mental health. This may be compounded by anxiety over high bills and fuel debt. Problems of social exclusion arise when older people feel unable to invite friends and family into their cold and damp homes. Children's educational progress is affected if they have no warm place to study at home, or if they miss schooldays through cold-related illness.

Affordable warmth needs a multi-agency approach because of the range of causal factors and multiple effects. The council is well placed to co-ordinate such a multi-agency approach. Improving insulation and draught-proofing to homes means that the amount of heat lost through the walls, roof and other parts of the building fabric is reduced. Increasing the efficiency of heating systems, often by installing modern, more efficient boilers, means that they use less fuel. A combination of these measures will make homes easier to heat

²⁰ Environmental burden of disease associated with inadequate housing, Ed.s Braubach et al., WHO, 2011.

²¹ Atlas produced by the West Midlands Public Health Observatory on behalf of the Public Health Observatories in England, published 25.01.13. Excess Winter Deaths Index (EWD Index), 2008-2011 is the excess of deaths in winter compared with non-winter months from 01.08.2008 to 31.07.2011 expressed as a percentage. The year runs from August to July. Winter months are December to March, Non-Winter months are August to November and April to July.

affordably and improve their energy efficiency rating, providing a longer term solution than addressing fuel prices or low incomes, although these are also necessary. The importance of advice to residents regarding benefits, fuel debt and energy saving strategies has been recognised in the Value section.

Target

Affordable warmth: protect the health and wellbeing of our most vulnerable residents

Target 7: Reduce fuel poverty by 30% by 2016 from 2011 levels as published by DECC

How will the council achieve it?

Identifying sources of funding and programmes to reduce fuel poverty and increase affordable warmth for all residents, particularly the vulnerable

The council will continue to bid for funding to target the improvement of homes for our most vulnerable residents. Links with public health will be strengthened and officers will work collaboratively to achieve mutual gains for the affordable warmth and health agendas. Officers will aim to identify the areas of housing most likely to be energy inefficient and where grants have not previously been accessed to ensure targeting of available grants effectively. The council will also work with external partners to secure investment in Ealing's homes to improve energy performance and reduce gas and electricity costs, such as ECO grants available through energy companies.

Ensuring winter preparedness and contributing to the Severe Weather Plan

The impact of cold weather on health is predictable and mostly preventable. Direct effects of winter weather include an increase of heart attack, stroke, respiratory disease, influenza, falls and injuries and hypothermia. Ealing will work cross-departmentally to prepare residents for winter weather, by developing a coordinated message to residents and developing emergency procedures. The council will investigate the setting up of a helpline or single point of referral to direct vulnerable people to various avenues of support related to fuel poverty, including advice on energy efficiency, health, benefits and fuel debt. Enabling home insulation improvements should also help towards protection of vulnerable households during extreme heat, which will contribute further to the Severe Weather Plan.

Prioritising resources for houses that lack heating to reduce winter deaths and winter hospital admissions

The number of excess winter deaths is an indicator in the Public Health Outcomes Framework 2013–16 for adults and older people. The public health agenda now comes under the remit of local authorities through the Health and Wellbeing Boards (see below). Working across council departments, officers will identify vulnerable households and direct available funding to help prevent excess winter deaths and cold-related hospital admissions. They will further develop partnership working with Ealing Clinical Commissioning Groups, Integrated Care Organisation, Social Care and the Voluntary Sector to increase targeting of households at risk of cold-related ill health. The council will develop communications, prioritise funding to insulate homes and repair and replace heating systems as funding allows.

Innovation: seek inspired solutions that deliver learning and results

Why is this important?

In order to make progress on the complex topic of delivering energy efficiency across all housing tenures and publicly owned commercial buildings, the council must consider new ideas and work with partners to develop and test them.

How will the Council achieve it?

Testing new technologies

The council will be open to working together with organizations to develop and test new technologies. The council will establish pilot projects within the council estate where new technologies are trialled. The council will be open to finding new solutions for old problems whilst always allowing for the possibility of failure to learn what works and what does not whilst gaining knowledge of the reasons why.

Considering the economic benefit of managing our demand

The council will investigate possible income generation becoming available from energy companies as payment for being flexible in electricity demand. The national grid only has a certain capacity and, at times of peak demand, to avoid black-outs it is possible to gain financially by reducing council demand when requested to do so by an electricity supplier.

Strengthening delivery partnerships

Through working with the WLA, new technologies and new ways of working will become available to the council. The council will work in partnership with other WLA members and associated organisations to ensure it benefits from this arrangement.

Community Benefits: delivering added value

Why is this important?

Improving energy performance of buildings not only improves the borough's environmental performance, saves money and provides a more comfortable and healthy experience for building users, but it can deliver a number of broader benefits as well. Educational opportunities are abundant, from creating school lessons on climate change, physics and maths to opening training and employment channels for local residents. The installation of external cladding on buildings can transform communities by improving the aesthetic of properties and contributing to a safer, more desirable urban realm.

How will the council achieve it?

Working with energy suppliers and delivery agents to create apprenticeship, training and employment opportunities

Many local authorities have delivered benefits by working with energy suppliers, who are responsible for Energy Company Obligation (ECO) grants. The council will partner with suppliers and delivery agents to access ECO grant funds to improve its own housing stock. A key aspect of these partnerships will be targets related to skills and employment that will continue to benefit the community long after the work is completed.

Working with local charities and community groups to offer practical advice on energy efficiency and signposting residents to resources

Ealing has a strong network of charities and residents taking action on energy issues. The council will continue to build relationships with these groups, supporting them where possible, to ensure residents have resources related to alleviating fuel poverty and improving the energy performance of homes. Where learning is achieved through pilot projects, this will be publicised and passed on to residents.

Way forward

Funding opportunities

- › Council capital investment – Funding would need to be identified and agreed by members through the Council’s budget review process. A sound business case will be put forward, showing the potential energy savings to be made and the period in which the investment would be paid back through the savings. Projects utilising the RE:FIT framework carry contractual savings guarantees, transferring the investment risk to the contractor.
- › Housing Revenue Account - the 2013 HRA Asset Management Strategy calls for the development of a longer term investment strategy to improve thermal efficiency of housing stock
- › Salix Energy Efficiency Loan Scheme (SEELS) – This funding is available to public authorities where the project in question meets fund criteria, such as the payback on investment from savings in energy bills being 5 years or less.
- › Investigate mechanisms to fund energy efficiency improvements for vulnerable households in the private sector such as loans against a charge on the property.
- › Central Government grants – Department for Energy and Climate Change (DECC) have historically offered grant funding to encourage the take up of new programmes, such as Green Deal. Department of Health has previously offered funds to alleviate fuel poverty and address affordable warmth and health risks.
- › Energy Company Obligation – The big six energy companies are obligated to invest in projects that offset CO₂, according to certain criteria and eligibility conditions. This funding is

available to private home owners and social landlords, such as the council, currently until 2015.

- › European funding – There are on-going calls to join bids for European Union funds related to innovation and partnership learning.
- › The council’s membership of Green Deal Together entitles it to access GDT’s Community Fund in support of fuel poverty projects.

Partnership working

West London Alliance (WLA)

Lower Cost Projects – By planning and delivering projects in unison, efficiencies will be created through economies of scale. For joint projects many overheads and payments would be paid for as a group rather than per council as would be the case if the projects were completed independently.

Regional Comparison/ Benchmarking - A database containing building energy consumption data will be developed. Participating boroughs will upload building data annually making it possible to make direct comparisons between boroughs. As well as whole portfolio comparisons it will also be possible to compare specific types of buildings in the council’s portfolio with buildings of the same type in the other boroughs. If differences in performance are found between boroughs it will highlight areas for investigation and possible improvements to be made.

Green Deal Together CIC – The council’s delivery agent for Green Deal, made up of fifteen local authorities. Working as an alliance, Green Deal Together is able to share learning, create shared tools and resources and bid for funding efficiently.

London Energy Project (LEP)

This group supports best practice in energy procurement and management. There are 32 participating local authorities involved. LEP offers independent, cost effective specialist energy advice and auditing services that supplement authority in-house capacity, delivering work programmes that for individual authorities would be unaffordable or difficult to achieve. Support is designed to enable energy, procurement and sustainability managers working in the field, to efficiently deliver on mandatory requirements like CRC and achieve value for money through best practice energy procurement.

Energy Strategy delivery - Energy Action Plans

An action plan for the corporate estate, council housing stock and affordable warmth will list the specific projects and initiatives that will deliver the Energy Strategy. An action plan will be finalised after the strategy's adoption, with actions refreshed every year by the Sustainability Team.

Monitoring and reporting

The Sustainability Team will coordinate all monitoring and reporting related to this strategy. Actions will be reviewed biannually by the Sustainability Team and delivery partners to assess progress and to ensure that they are still relevant and realistic. Performance against strategy targets and actions for the following year will be reported annually to the corporate board.

The following related reports will be published by the Sustainability Team:

- Performance against corporate targets will be presented in the council's annual performance reporting on corporate targets.

- An annual Greenhouse Gas report will be published on the council's website.
- HECA 'further reports' will report progress on housing related energy targets every two years and published on the council's website.
- An annual report on fuel poverty submitted to the Local Strategic Partnership (LSP).
- Domestic energy efficiency performance monitoring as part of the corporate plan.

Resource implications of implementing the Energy Strategy

The strategy will produce a stream of work through the proposed Energy Actions Plans. This work will be managed by the Sustainability Team using its existing resource. There will not be significant extra work load caused for other teams within the council. Where "up-front" investment is required for example to complete energy efficiency or renewable energy projects on the corporate estate, an "invest to save" programme will be considered that will deliver savings in the future through lower electricity and/or gas bills. The FIT income from domestic PV programmes will be ring fenced for investment in further energy efficiency measures as appropriate.

Related strategies and policies

Health and Wellbeing Strategy 2012-16

The Health and Wellbeing Strategy 2012-16 includes five priority areas: 1) Early years intervention (0-5years old); 2) Child obesity; 3) Alcohol misuse; 4) Older people and ageing well; 5) Out of hospital strategy. The Affordable Warmth objectives outlined in the Energy Strategy will help to address priority areas 1, 4 and 5.

Addressing fuel poverty is indicated as an objective of the Ageing Well Action Plan 2013-16. It has been agreed that the vision of this action plan is to make Ealing a place where older people can lead healthy, enjoyable, sociable and safe lives through promotion of independence and active engagement. In particular, ensuring warm homes for older people through the promotion of affordable warmth will contribute to maintaining their independence, health and safety.

Sustainable Communities Strategy 2011

An objective under the Prosperity theme of Ealing's Sustainable Communities Strategy 2011 is to reduce fuel poverty in Ealing, as agreed by the Local Strategic Partnership (LSP). The Energy Strategy would contribute to this aim by helping to ensure vulnerable Ealing residents are living in a warm and safe home environment.

Private Sector Housing Strategy 2013/14

The approval of this strategy is forthcoming, but one priority from the strategy is to improve energy efficiency and reduce fuel poverty and a series of actions is set out to achieve this.

HRA Asset Management Strategy 2013

Eight strategic priorities have been identified for the recently adopted HRA Asset Management Strategy, including, "to develop a long term strategy to improve the thermal efficiency of HRA stock, reducing carbon emissions and fuel poverty".

Sustainability Strategy 2010

The Sustainability Strategy is built around the One Planet framework; one of its ten principles is "energy efficiency – moving toward zero carbon buildings".

Planning Policy

- Major new developments are expected to achieve as a minimum Code for Sustainable Homes Level 4 and BREEAM Rating of Very Good.
- All applications for major developments to include an Energy Statement; demonstrating that the proposed development will meet the highest standards of sustainable design and construction throughout all stages of the development (based on the policies of the London Plan 2011).
- Post-construction monitoring of major developments must take place to demonstrate compliance with the energy policies of the Local Plan.
- All applications must demonstrate 40% reduction in CO₂ emissions from 2010 Building Regulations; the council expects all developments to cut at least 20% of CO₂ emissions by using renewable energy generation (lower level acceptable where CHP contribution is high).