



Co-operative Councils

Innovation Network

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People-centred councils
driving social innovation
putting people first

Public sector innovation in approaches to climate change – 25 case studies

Case Study 1: Sunderland City Council - WARPit

WARPit is an equipment, furniture and resource re-use online tool, and helps individuals and organisations to loan or give surplus items to each other for free. Council employees are encouraged to use WARPit to source equipment and consumables wherever possible as part of our Sustainable Sunderland Policy.

In 2010, Sunderland City Council underwent a restructure that led to the closure of buildings across the city. As offices were vacated, large quantities of office-related resources like furniture, equipment and supplies became redundant. Consequently, Sunderland City Council subscribed to WARPit in 2011 to assist in the management of its Building Rationalisation Scheme and the redistribution of resources across the authority. The council was the first to pilot the software, providing a platform from which resources could be loaned, reused and recycled.

The software was piloted for an initial one-month period within the council, and its overwhelming success led to its launch across Sunderland, within schools, across the partnership and local charities.

A WARPit Coordinator was appointed, to oversee the day to day management of the programme and they have become the dedicated point of contact for users, regarding queries, furniture removal, training and system administration.

WARPit has won numerous awards, including Compact Award 2014, Green Apple Award 2014 and was an international finalist in the Circular Economy Awards in 2014. It has been recognised nationally as best practice and we are continuously contacted for advice on how to implement the software within organisations.

The success of the corporate scheme has led to the development of the WARPit software for domestic use. The Community Reuse Project is currently in Phase One of development, and aims to support four specific areas:

- Redistribute surplus domestic resources (furniture and electricals) to households “in need”.
- Support training and upskilling by providing “drop in” upcycling sessions for residents and formal training in the longer term.
- Provide access to resources for new business start-ups and entrepreneurs
- Support the development of an Arts Hub in the city.

Sunderland City Council is leading the way as the first council to take the software forward in this manner, and we hope the model will be used nationally as best practice in the future.

Case Study 2: Sunderland City Council - Low Carbon Social Housing Demonstrator Project

The Sunderland Low Carbon Social Housing Demonstrator Project takes a dual track approach to addressing the challenge of developing a low carbon economy. Funded through ERDF, with support through Sunderland City Council and Gentoo Group, it aimed to:

- Develop an exemplar of effective energy management within social housing; and
- Support the development of new skills and capacity, specifically among SMEs to promote supply chain growth.

The objectives of the project were to:

- Increase the technical knowledge, skills and capacity of the business community to enable them to respond more effectively to the anticipated growth in demand for new energy saving products and installations;
- Enable SMEs to achieve the recognised accreditations for the various sustainable energy technologies;
- Create new and safeguard existing jobs with a similar skill set to those required for micro-generation;
- Increase demand for new energy efficiency applications, by highlighting the substantial energy savings benefits of the interventions through community engagement, evaluation work and deployment activities;
- Test, deploy and monitor a range of innovative energy and renewable technologies in Gentoo Group Ltd social housing in the City of Sunderland, responding both to market failure and future demand;
- Promote social cohesion and reduce fuel poverty by ensuring that the ‘hardest to treat’ social housing properties and the most vulnerable groups and communities benefit from this flexibility in the use of ERDF funding;
- Engage with residents to educate in the effective use of new, low carbon technologies and to raise awareness of the steps to be taken towards true low carbon communities.

The rationale for the project was to provide a test-case for a supply and use model in establishing low carbon communities, while building opportunities in an emerging sector in the local economy. The twin track approach was designed to simultaneously stimulate both the supply and demand side of low carbon technologies for domestic and commercial use, by installing and demonstrating low carbon technologies and increasing the capacity of the private sector.

The target area was Glebe, in Washington. This comprised c.100 1970s brick-built terraced single level dwellings in Roche Court and Wenlock, with flat roofs and poor levels of insulation. Residents fall mainly within the older age range, and the area has suffered from poor perceptions in the past.

The area is relatively compact, with central space that was capable of being adapted to house the central boiler. Gentoo commissioned the design and installation of a communal energy centre and district heating network, powered by biomass – such as wood chippings - and by gas to provide the heat and hot water to the properties. In addition, the thermal performance of the properties was improved by installing insulated external cladding, double glazed windows and a pitched roof system with loft insulation. The components of the project therefore comprised:

- District Heating (biomass & gas);
- Insulated Pitched Roof with PV;
- Improved Windows and Doors;
- Insulated Cladding;
- Programmable Heating Controls; and
- Flexi Pay Billing System

To achieve the SME engagement activities, a North-East based training and consultancy provider, Narec DE, was appointed to manage this component of the work. The activities undertaken comprised:

- Engaging SMEs (primarily micro businesses) to become involved in targeted training;
- Delivery of training courses; and
- The provision of consultancy support

The Sunderland Low Carbon Social Housing Demonstration Project is a capital and revenue funded project, delivered with funding secured from Gentoo Group Ltd, Sunderland City Council and European Regional Development Fund (ERDF). The total investment through this project is £3,884,861 comprising £1,942,431 of ERDF, grant funding and £1,942,430 of match funding. As a social housing demonstration project capital funding to deploy, purchase and install low carbon technologies accounted for the vast majority of project spend (89%) with SME engagement, demand stimulation and diversification activities accounting for around 5% of spend.

A survey of SME beneficiaries reported very high levels of satisfaction with the support received as well as very high levels of additionality (i.e. benefits are directly attributable to project support). Responses received demonstrated a number of positive outcomes for SME participants, including: Four businesses increasing their collective turnover by over £80,000 as a result of the training received through the project, an average of over £20,000 per business;

- At least four new jobs being created as a result of new work won, equating to an economic contribution of £143,210 to the Gross Value Added.

- 54% of beneficiaries selling new services;
- 92% of beneficiaries stating that the training had helped to improve their business;
- Four businesses looking to invest over £42,000 to implemented changes to improve their energy performance.

Residents of the 97 social houses that have had energy efficiency measures undertaken on their properties also reported very high levels of satisfaction with the improvements with:

- 25 of the 32 surveyed stating that the new heating system had ‘made a lot of difference to the comfort of their home’; and
- 31 out of 32 reporting that the other improvements had ‘made a lot of difference to the comfort of their home’.

Early data suggests the improvements have made a positive impact on residents’ energy use and costs as well as improving their quality of life. For example, 24 out of 32 believe their heating bills have decreased and monitoring data from the Gentoo Group suggests that each household can expect to save at least £108 per year on their energy bills with a saving of around £59 or €80 per year on heating and hot water and £49 or €67 per year on their electricity bills.

Collectively these savings suggest a reduction in energy bills of at least £10,461 per year across the 97 households.

Case Study 3: Plymouth City Council – Planning a Green Future

In 2013 Plymouth City Council took a bold decision to try to do something that no local authority in the UK has done before. Together with our partners, we dared to believe that we could create one single strategic plan for Plymouth, that would be about both people and place, providing one vision, one strategy and one overarching message about Plymouth’s direction of travel, and which our partners and the whole city would help create and own.

Three years later, after the biggest conversation the City has ever had with its local communities and its partners, we have brought together over 100 plans and strategies into a single strategic plan: The Plymouth Plan.

The Plymouth Plan is visionary - setting out in an integrated way what we want our city to be like in 2031. It is ambitious – for our citizens and for the city itself. And it is founded on some core values - that people have roots and care about their future and that of their community; that we will be a city of equality of opportunity; that power is more fairly distributed, and people have the confidence to make more decisions on the issues that affect them; and finally that everyone in the city can flourish as we explore new creative ways of doing things. The Plymouth Plan provides the strategic framework for that to happen in a radical way.

The Plymouth Plan seeks to respond to the big questions Plymouth is facing in tackling health inequalities, the rising cost of care, the lack of enough affordable housing, the need to provide good quality jobs, climate change, pressure on our cherished historic and green spaces, increased demand on services, and reduced public sector resources. Many of the solutions for these issues will depend on organisations working closer together than ever before, and also on individuals and communities being empowered to take control of their own lives and neighbourhoods. It will also require Government and its agencies to look beyond traditional ways of looking at plan-making so

that complex issues are addressed in an integrated and holistic way rather than in old fashioned silos. And in so doing the objectives and policies people who live and work here want in their plans for their city must be given greater recognition.

The Plymouth Plan is therefore a truly pioneering and ground-breaking initiative and has already received national and regional awards for its innovative approach.

The plan contains an overarching strategic Green City theme that sets out how the City aims to be one of Europe's greenest cities where:

1. *Challenging emissions reduction targets are met by:*
 - a. *Conserving energy in our homes, businesses and modes of travel.*
 - b. *Increasing energy generation from renewable and low carbon sources.*
 - c. *Supporting co-operative action on energy.*
2. *A thriving green economy is achieved, with a skilled and growing workforce.*
3. *A high quality and functional network of natural spaces is embedded across Plymouth and provides for the needs of people, wildlife and businesses, now and in the future.*
4. *An ambitious housing and social policy is delivered which ensures affordable warmth, addresses fuel poverty, provides healthier homes, and supports local people in accessing cheaper and green energy.*
5. *A transport system is provided that delivers a step-change in walking, cycling, and public transport as the travel modes of choice for journeys in the city.*
6. *Plymouth is a virtually nil-to-landfill city.*
7. *People and communities are aware of, value and contribute to, the sustainability of the environment around them and are empowered to meet the challenges posed by climate change.*
8. *Plymouth bathing waters are healthy to bathe in at all times, the city is resilient to flooding.*
9. *Plymouth enjoys the benefits of some of the cleanest air of any city in the country.*
10. *Plymouth is known for its food; exceptional quality, locally grown, available to all, building on its reputation as a 'sustainable food city.'*

The Plymouth Plan commits to the development of a 50-year Plan for the Environment which will be developed as a visionary initiative, exploring and establishing aspirational targets in relation to carbon reductions, environmental quality, and delivering a socially and environmentally sustainable city. A University of Exeter research report ('Analysis of Carbon Targets for Plymouth City Council', April 2014) shows that Plymouth can realistically aspire to deliver a reduction in the city's carbon emissions by 50 per cent on 2005 levels provided that a multi-faceted programme of carbon reducing measures is delivered, securing a step-change in green energy, energy efficiency and sustainable travel. This would be a significant move towards supporting the UK government's target for 2050 of an 80 per cent reduction on 2005 levels, as set out in the Climate Change Act 2008. Other major outcomes that are within reach include delivering substantial progress towards overcoming fuel poverty in the city, and taking our care and management of the city's precious natural environment to even higher levels and engaging all of the city's schools in an environmental learning network.

PCC has been working cooperatively to implement these policies on and strategies on the ground. In the last two years Plymouth City Council has:

- Secured City Deal funding and Enterprise Zone status for South Yard development (part of HM Naval Base at Devonport). This will include the new Marine Industries Production Campus, giving the southwest marine renewables industry a major boost. The detailed design and planning has commenced and PCC, at a strategic level through RegenSW, have engaged with the South West Marine Energy Park. This is in recognition that South Yard could have an important role to play in developing offshore renewable energy sources in the South West, particularly linked to wave energy in Cornwall. This could include the production and deployment of wave devices.
- Worked with DECC's Heat Network Delivery Unit to complete District Energy business planning studies for potential schemes in four locations across the city, including at South Yard.
- Installed heat pipe infrastructure as part of the refurbishment of its city centre public buildings.
- PCC have provided PEC Renewables with more host buildings including the site for Plymouth's biggest solar roof on one of its busiest buildings. This brings the total installed through PCC own estate and through community-owned projects to 2.5MW in under 2 years.
- Supported, through the successful Green Deal for Communities programme, 300+ households to get external wall insulation by partnering with British Gas and Plymouth Energy Community (PEC).
- Completed, with support from PEC, feasibility work on the potential for biomass heating solutions in six schools
- Provided capital funds for a free replacement boiler programme for vulnerable residents, delivered again in partnership with PEC and British Gas.
- Invested in a fleet of eight electric cars, and installed charging points at key car parks across this city
- Pro-actively supported the partnering of PEC Renewables and Four Greens Community Trust (FGCT) to develop a 4.1MW community-owned solar array by:
 - Supporting the development of both organisations
 - Transferring potential site to FGCT
 - Providing £130k of Social Enterprise Investment Fund for project development.
- Completed a £9m LED Street Lighting programme
- Signed a 3-year partnership agreement with PEC furthering commitment to the growth of community energy and building on the innovative-shared services collaboration that has been recognised nationally; with many local authorities wishing to replicate.
- In 2015 PCC achieved its long held 20% by 2015 target of emissions reductions across its own estate.
- Worked with Plymouth Community Homes and PEC to explore innovative local energy supply partnership.
- 600kw of solar PV installed on 11 PCCs operational buildings.
- Detailed feasibility work has identified sites with the potential to host another 4.8MW of solar generation, and work in progress at Chelsoneerdf will identify another 6MW and 25MW.

Case Study 4: Plymouth Energy Community

The highly successful Plymouth Energy Community (PEC) is a perfect example of how the co-operative approach leads to real action on climate change at all levels in a local community. In line

with its co-operative ethos, Plymouth City Council (PCC) recognised the potential for a community organisation to play a key role in delivering local solutions around advice on bills, affordable warmth and renewable energy.

PEC is a big-thinking, multifaceted Community Benefit Society, aiming to give Plymouth residents the power to change the way they buy, use and generate energy. Established in 2013, PEC has grown from a council initiative into a large community-led operation offering many different services addressing fuel poverty and carbon emissions.

Plymouth City Council's support through provision of start-up finance and access to funding streams, sourcing of founder members and volunteer Directors and provision of invaluable commitment of staff through an innovative shared services agreement means that PEC has acted at an unprecedented rate for a community energy group. Groups and local authorities all over the country are striving to replicate this co-operative collaboration.

With over 1200 individual and organisational members, PEC has been able to skip lengthy procurement processes and work with a range of organisations to provide and achieve the following:

- Helped 170 households clear over £115,000 fuel debt through a dedicated fuel debt advice service
- Provided free training to 48 volunteers and enabled four to complete Level 3 City & Guilds in Energy Awareness
- Provided bespoke home advice visits by a volunteer 'Energy Team' to 55 households; saving them a total of £27,000 over the next year (average £203 a year by switching and £141 through advice)
- Provided advice and support to over 3000 households through attending over 250 community events and presentations
- Helped 700 households access grants for external wall insulation
- Employed two energy marketing apprentices
- Assisted 700 households to access grants for external wall insulation, saving £4.5million and 19,000t CO² over the lifetime of the measures

In 2014, PEC launched a second Community Benefit Society, PEC Renewables, to enable community-owned renewable energy installations. These benefit local organisations, generate community investment and drive an income to provide long-term support for PEC's services addressing fuel poverty and carbon emissions. Through two share offers, £1.45 million community shares have been raised from 319 local, national and international investors. In addition to £1 million loan finance from PCC, this has led to 28 schools and community buildings receiving free community-owned solar on their roofs at total generation capacity of 2MW. This has empowered the local community to own their own clean energy supply and boosted income in the city by offsetting what would otherwise have been spent by schools, businesses, households and PCC.

Case Study 5: Edinburgh – Edinburgh Adapts, Climate Change Adaptation

Adaptation Scotland is working with the [Edinburgh Sustainable Development Partnership](#) (ESDP) to develop an Adaptation Action Plan for the city through the [Edinburgh Adapts](#) project. Using the ESDP's [Resilient Edinburgh Climate Change Framework](#) as a starting point, the Edinburgh Adapts project brings together stakeholders from across the city to work collaboratively to overcome climate challenges. Led by an ESDP members Task Group businesses, communities, and key organisations will design a five-year climate change adaptation action plan and a long term vision for a climate ready Edinburgh.

Through working with the ESDP, other partners and stakeholders, the Adaptation Action Plan will develop a fuller understanding of the potential impacts of climate change on the city's natural and built environment, infrastructure, communities and local economy, and from this, identify actions and develop recommendations to address these, as well as helping to build community capacity and resilience.

Predicted changes to the local climate in the East of Scotland include an increase in winter precipitation and an increase in the frequency of intense rainfall events, increasing the risk of localised flooding. The City of Edinburgh Council manages flood risk and takes cognisance of climate change through:

1. providing an emergency response;
2. inspection and maintenance of all watercourses including flood defence measures. In addition, the Flood Prevention Team inspects and maintains coastal defences and flood storage reservoirs; by preparing for the future which includes the construction of new defences and by engaging with the Scottish Environment Protection Agencies and other stakeholders to develop a strategy and a plan to mitigate flooding. The team also provides support to ensure future developments are not at risk of flooding.
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The Edinburgh Adapts project was approved by the ESDP on 26 March 2015. An Adaptation Task Group is taking the project forward. Membership of the Group is open to ESDP members and partner organisations, including private, community and public sector representatives.

The consultation and engagement phase of the project started in August 2015 when over 30 city organisations participated in a workshop to find out more about climate impacts affecting the city, feedback their priorities for action and help begin to shape a vision for a climate resilient Edinburgh.

The second phase of the project – designing the action plan and writing the vision – is now underway. From August to November 2015 a series of workshops will be held to provide feedback on the draft Edinburgh Adapts vision and propose actions for the Action Plan.

From January to March 2016 the Task Group lead on finalising and publishing the action plan which will be jointly owned by members and formally approved by the ESDP. The action plan is likely to comprise of actions owned by a range of ESDP members each of whom will, at their discretion, seek the required approval for specific actions from within their own organisations. The

action plan will be monitored and reviewed on a regular basis in line with commitments made in the Resilient Edinburgh Climate Change Adaptation Framework

Adaptation Scotland will work with the Task Group and wider ESDP members to evaluate the impact of the project and, raise the profile of ESDP's adaptation planning work, sharing lessons learned with other community planning partnerships

The Task Group, made up of ESDP members will lead on developing the action plan. The City of Edinburgh Council will play a co-ordination and facilitation role and ensure that the Task Group works efficiently. The Adaptation Scotland programme will support the Task Group in designing and running the project workshops and will lead on monitoring and evaluation of the project, providing feedback to ESDP.

The Task Group will report back regularly on progress to the ESDP. The ESDP will have the final sign off on the action plan. Progress will be reported to the Edinburgh Partnership.

The project aims to:

- develop a shared ESDP adaptation action plan as required by the Resilient Edinburgh Climate Change Adaptation Framework;
- build the capacity of ESDP members to increase resilience and adapt to climate change and, comply with the Public Bodies Climate Change Duties; and
- demonstrate the role of Community Planning Partnerships in developing and implementing a shared adaptation framework and action plans.

This will be achieved through:

- forming an ESDP led Adaptation Task Group to plan and run three workshops that will identify existing and new adaptation actions, and inform the development of a jointly owned action plan;
- sharing information gathered through the action plan to inform adaptation planning within individual partner organisations; and
- sharing information about the ESDP Adaptation Framework and action plan with Community Planning Partnerships across Scotland, raising the profile of ESDP adaptation work and encouraging replication where appropriate.

The Adaptation Scotland programme will commit 25 staff days to support the project. This time will be allocated to overall management of the project, supporting the set-up of the Task Group and, designing, running and evaluating the workshops. Limited time may also be available to review and contribute to writing the action plan.

- Adaptation Scotland will provide a discretionary project budget in the region of £3,000 to fund workshop venues, catering and associated costs.
- ESDP members will commit staff time to participate in the Task Group.
- The City of Edinburgh Council will participate fully in the Task Group, and will play a key coordinating role with Task

Resilient Edinburgh Climate Change Adaptation Framework was approved by the City of Edinburgh Council in October 2015 and endorsed by the ESDP in November 2015. The Framework sets out Edinburgh's strategic approach to increasing resilience to the impacts of climate change, identifies

priority actions, and commits partners to ongoing monitoring and reporting including the development of a detailed action plan during 2015.

Case Study 6: Norwich City Council - Big Switch and Save

Reducing energy use has important environmental, social and economic benefits and therefore, clearly contributes to Norwich City Council's corporate priorities. It will help meet national and international targets to reduce emissions of carbon dioxide, one of the main contributors to climate change. This work is also vital to improve the health of the local community, enhance prosperity and improve the housing stock. Our programme of activities has been supported by DECC /NHS commissioning groups and other governmental incentives (RHI/FITs) and has achieved real results.



Since 2011 the council has six rounds of our successful collective energy switching scheme. Through the power of collective purchasing we work to secure the lowest energy prices for our registrants, therefore helping to reduce the cost of energy and offset rising energy prices. The previous round of Big Switch and Save has delivered average savings of £221 a year per household. This was a better saving than those available on online comparison websites.

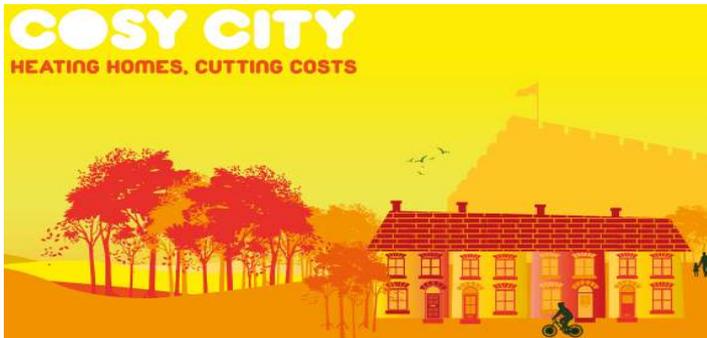
In the last five tranches overall 9879 people registered for the Switch and Save. Norwich has repeatedly had the highest national conversion rates, with 1250 switchers in total. This means Norwich residents have saved a total of £225,036. However, if all residents took up the offered savings a total of at least £1,778,220 would be saved on energy bills by Norwich residents.

Norwich City Council has engaged with fuel poor households to ensure that they are aware of the Switch and Save. In tranche three we asked the residents questions to identify whether they belonged to an affordable warmth group. The results showed that two thirds of registrants belonged to one of these groups. In addition to this, the small fee we receive from the Switch and Save goes back into affordable warmth work. This has been invaluable for vulnerable residents, as it has provided urgent heating need for them in the winter.

Case Study 7: Norwich City Council – Cosy City

Through the scheme homeowners can access advice, support, grants and loans to support a wide range of energy efficiency measures. Since March 2014 the programme has assisted over 1000 households by providing general advice and has installed 43 cavity walls, 59 lofts, 66 Solid Wall

installations and 32 new energy efficient boilers. Cosy City is a Green Deal Community funded scheme which assists residents in the Norwich City areas keep their homes warmer in winter and their energy bills lower throughout the year.



Even better news is the Cosy City has given over £0.5 million of government grants to help reduce the installation costs of the installed measures.

Case Study 8: Norwich City Council – Norfolk Collective Solar Scheme



An innovative scheme offering guaranteed and competitively-priced solar panels via a council run reverse auction process. The scheme takes all the complexity and uncertainty out of shopping for solar panels yourself. Participants can be assured of a quality product, a quality installer and guarantees and quality assurance thereafter.

Thousands of people across Norfolk have registered interest in the UK's first reverse auction for solar panels scheme. To date 3,540 households and businesses across the county registered for Solar Together Norfolk were offered average savings of 16 per cent. Norwich City, Broadland, South Norfolk and North Norfolk district councils have worked in partnership with specialist collective purchasing company iChoosr to run the scheme.

After a one-day auction process, the savings offered to participants were between 11 per cent and 19 per cent below the current market price for solar panels. The average saving works out at 16 per cent. For example, a household which requires 16 solar panels would normally expect to pay around £5,740 in the current market. But with Solar Together Norfolk the cost would be £4,630, a saving of £1,100.

For example, a household which requires 16 solar panels would normally expect to pay around £5,740 in the current market. But with Solar Together Norfolk the cost would be £4,630, a saving

of £1,100. To date 850 people have accepted their deal. This work has a total value of over £3 million. To keep up with the orders our contractor will need to install 30 – 40 new solar PV installs each week.

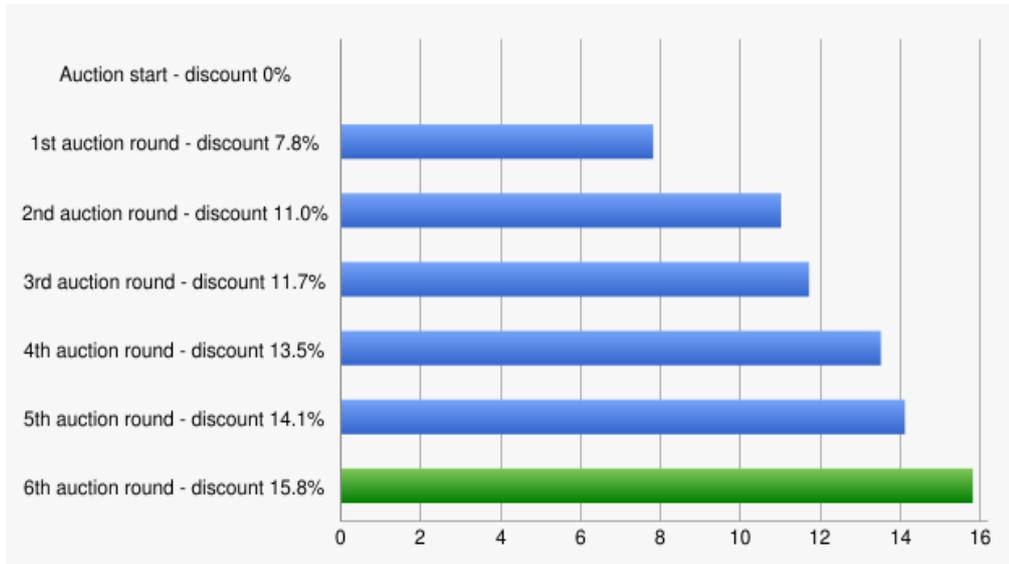


Figure 1 – Solar Together Auction Results

In late August, the government proposed a cut of 87% in the generation tariff, reducing this income to a mere 4p per generated kWh. This proposed reduction is due to be implemented on 1 January 2016 for every domestic PV installation.

Regretfully this is likely to make this approach unattractive to other LA's moving forwards.

Case Study 8: Lambeth - The Lost Effra Project

The River Effra used to flow from Crystal Palace to Vauxhall where it joined the Thames. Like many London Rivers it was diverted in to the sewer during the Victorian period. Consequently, the land where the Effra used to flow is now developed, however the valley of the Effra still exists and flooding along its route is a regular occurrence.

The Lost Effra Project was launched in 2013. Its aim was to develop a community-based water management strategy and inspire people to create new ways to manage their environment along the route of the Effra in the London boroughs of Lambeth and Southwark. Part of this work has been educating communities on the benefits of sustainable drainage and showing how SuDS (Sustainable urban Drainage Systems) don't have to be expensive and technical engineering solutions, but something that anyone can deliver in their own gardens.

The project is steered by the London Wildlife Trust but involves key organisations such as the London Borough of Lambeth, Greater London Authority, Thames Water and Natural England. However, the main thrust of works and ideas comes from the network of community groups who are involved in the project and span the area that used to be the River Effra. The project also works in partnership with Lambeth Council Contractors who supply a lot of labour and resources in

kind but also working with small local contractors to encourage growth within the local area and assure local skills are used.

Case Studies Case Study 9: Lambeth - Rosendale Allotments

The Council carried out a de-pave project at Rosendale Allotments, **one of the largest allotments in London**. The allotments on Knights Hill are underlain by clay and generate a lot of surface water runoff, even though it's a green space. The runoff from this allotment is believed to have contributed to the 2004 Herne Hill flooding. The project saw over 100m³ of concrete removed from the forecourt of the allotment, replaced with a *Permavoid* surface for vehicles and planted verges to help encourage more biodiversity and also infiltration. The work was done in partnership with the allotments, the local residents' group of Rosendale Road, civil works Contractors Mace, Lambeth Council and the London Wildlife Trust.

The images below illustrate that the works have not only decreased surface water runoff but also increased biodiversity and also improved the streetscape of Rosendale Road, and finally made the allotments visible and attractive.



Rosendale Allotment before (Top) and after (Bottom) with new permeable surface.

Case Studies 9 - 22: Glasgow – 14 projects

1. The city is almost halfway towards its reduction target for greenhouse gas emissions.

Latest DECC (Department of Energy & Climate Change) data shows that Glasgow has made 14% of its overall reduction target of 30% by 2020. This is derived from a 2006 baseline so is equivalent to the Scottish Government's own 42% reduction target by 2020, which starts from an earlier year. Glasgow's savings are the equivalent of 164,000 return flights from the city to Sydney, Australia. Our latest position on greenhouse gas reductions is better than any other UK city, with the exception only of Sheffield. The Council itself is making similar savings from its estate and vehicle management.

2. The Climate Ready Clyde vision for a city-region adapted to climate change was launched in November 2013.

The other side of the carbon coin is local adaptation to the predicted and inevitable impacts of global climate change. Glasgow is now at the forefront of action to manage excess surface water and flooding and to engage with communities to ensure that they and the city are

climate ready. It has led the development of a city-regional approach, acknowledging that global climate change is no respecter of Scottish local government boundaries. This has been recognised by our peers across the EU in their decision to bring the next European Climate Change Adaptation conference to Glasgow in June 2017. Climate change is also a key feature of the city's resilience agenda (see below).

3. Delivering a comprehensive Energy and Carbon Masterplan for the whole city

Glasgow was one of the earliest UK signatories to a number of EU-wide pledges on climate change and has recently worked with other European partners to deliver an Energy and Carbon Masterplan. This is a key framework for leading Glasgow through the transition to a low carbon economy and it is a major legacy of the city's leadership that will guide the city's future development for decades to come. Its focus includes the development of low carbon heating systems, more energy efficient buildings and further renewable energy projects.

4. Glasgow signed the first deal of its kind in the UK with the Green Investment Bank to replace 10,000 streetlights.

Work is being undertaken right now to replace 10,000 lanterns with energy efficient LED lights. They'll provide a 53% saving on current energy usage and help to deliver a further 3% savings on the Council's carbon emissions. The Council has also delivered a pilot project with SSE to replace 1,000 lighting columns and lamps to test out new technologies and new funding models – another example of the innovative approach to public-private initiatives from this Council.

5. The Glasgow Recycling and Renewable Energy Centre is being delivered in partnership with Viridor.

Work continues apace on the GRREC, which is due to begin operations next year. It will take Glasgow from being one of the worst performing to one of the best local authorities in the country for diverting waste from landfill (with a 90% diversion rate). It will save on 90,000 tonnes of carbon emissions every year and recover enough energy to power the equivalent of 22,000 homes and heat 8,000 homes.

6. A key focus on ensuring that sustainability and social justice always go together. The city is the only one in the UK to offer an annual affordable warmth dividend to all vulnerable elderly people over the age of 80 - £100 every winter since the new Administration was elected in 2011. The Council also delivers a major domestic energy efficiency programme, leveraging in national and local funding sources to provide up to £500 a year in savings for fuel-poor residents. Now Glasgow is establishing an Energy Services Company for the city – a radical move to protect our people from market failure in the energy system by drawing on our history of municipal activism.

7. Growing a green economy

As a result of Glasgow's work to become an economic powerhouse for the green economy, we now have the largest number of renewables jobs of anywhere in Scotland. A green jobs strategy is being drawn up as a key element of the city's new economic strategy and again it has a major emphasis on well paid jobs for our people as part of the sustainability and social

justice agenda. In that light, an annual green jobs fair has now been established for young people from S2 and S3 classes.

8. Delivering on local renewables projects

Glasgow has worked with its partners in SSE to construct one of the largest on-shore wind turbines in Europe at Cathkin Braes – with all Council revenues from it already pledged to support the city’s affordable warmth ambitions. Future City Glasgow has led the way with open data mapping which allows communities to see if vacant and derelict land is suitable for solar photovoltaic panels. Hydro projects are now being developed to harness the power of Glasgow’s rivers across the city.

9. Hosting a Green Year across 2015

Glasgow came a close second to Bristol for the title of European Green Capital 2015. It is one of the city’s great traits that a bid like that should always have a legacy, so Glasgow is in the midst of a major programme of activities and events across all twelve months of 2015 – Glasgow’s very own Green Year. Each month has offered residents and visitors encouragement to live a greener lifestyle, resources to help them and fun activities to promote our positive message about more sustainable forms of urban living.

10. First city in the UK to offer free parking for electric vehicles

Glasgow is serious about encouraging low carbon travel options. That’s why it became the first and only city in the UK to announce in 2012 that parking for electric vehicles would be free. At the same time, the city has expanded its own network of free charging points on the street and at Council venues. The city’s own car club is acknowledged to have one of the lowest carbon fleets in the UK and will add ten electric vehicles this year. Each of our car club vehicles is estimated to keep a further twelve cars off the city streets.

11. Doing even more to invest in sustainable transport

In addition to the electric vehicle infrastructure, the Council has established Scotland’s biggest and best cycle hire scheme with 420 bikes and 41 docking stations across the city. The number of people commuting by bike into the city centre has risen by 130% over the past five years, a real testament to the investment in improved infrastructure for cycling and the emphasis being put on sustainable transport. Two all-electric buses have been purchased for a key route between the city centre and Riverside Museum and all of these developments have had a cumulative impact on improvements to the city’s air quality. 95% of the city now meets all national air quality standards, with efforts focused on tackling those areas known to present challenges.

12. The greenest Commonwealth Games ever

Glasgow promised and Glasgow gave the world the greenest Commonwealth Games ever. The Athletes Village is a model of sustainable development, with a low carbon district heating system, energy efficient homes and an entire development designed to cope with a changing climate through the innovative use of natural infrastructure to manage rainwater. It has influenced the design of our new Sighthill development, which will also be a climate adapted

community. The Games exceeded its own targets for recycling materials and diverting waste from landfill and car free zones around the venues ensured that fans walked or took public transport to them. Every one of the venues has remained in active use since the Games, ensuring that no white elephants were reared in Glasgow.

13. Being chosen by former President Bill Clinton as one of the first group of cities to join the Rockefeller Foundation's Resilient Cities Network

Glasgow is at the forefront of the global urban resilience agenda, taking our place with peer cities from around the world. The resilience agenda in Glasgow addresses the acute shocks which any city can find itself facing in an emergency, but it also focuses more on the longer-term chronic stresses and strains experienced over periods of years and decades. Glasgow's bid to the Rockefeller Foundation was very much based on the growing challenge of climate change and its anticipated long-term impacts on the city, but more recent discussion on resilience in Glasgow has also included social and economic resilience. An innovative engagement process with Glaswegian communities is currently under way as part of a broad civic conversation on what makes for a more resilient city.

14. Greening the city

Sustainability is all about people and all about how we tend our relationship with the natural environment. Glasgow has undertaken significant work across its parks and greenspaces to connect people to nature and to encourage biodiversity. Our award-winning Stalled Spaces programme, for instance, has taken land for which development has halted and returned it to temporary community use for a wide variety of growing projects and creative programmes. There are even two bee colonies on the roof of the building which is at the very heart of city government in Glasgow.

Case Study 23: City of Cardiff Council - Greener Grangetown

The City of Cardiff Council, Dŵr Cymru Welsh Water and Natural Resources Wales are investing £2 million in Greener Grangetown, an innovative scheme to better manage rainwater in Cardiff's Grangetown community. Using the latest techniques, this scheme will catch, clean and divert clean rainwater directly into the River Taff instead of pumping it over 8 miles through the Vale of Glamorgan and into the sea.

Innovative surface water management techniques will include installing attractive planted areas that will help to absorb the water, and increase biodiversity, whilst providing the community with more green spaces on their streets. Following extensive consultation with residents there will also be a number of street scene improvements including improved cycling infrastructure, better parking and traffic management arrangements, and the installation of attractive rain gardens. These will not only enhance local biodiversity and wildlife, but deliver important improvements to water quality in the River Taff, and encourage water efficiency. At the same time, by creating more green areas we'll open up new opportunities for people to enjoy walking, cycling and other recreation close to where they live and work. More greenery and tree planting will also mean noise and pollutants should be better absorbed, and air will be cleaner too. All this will make Grangetown a greener, cleaner place to live.

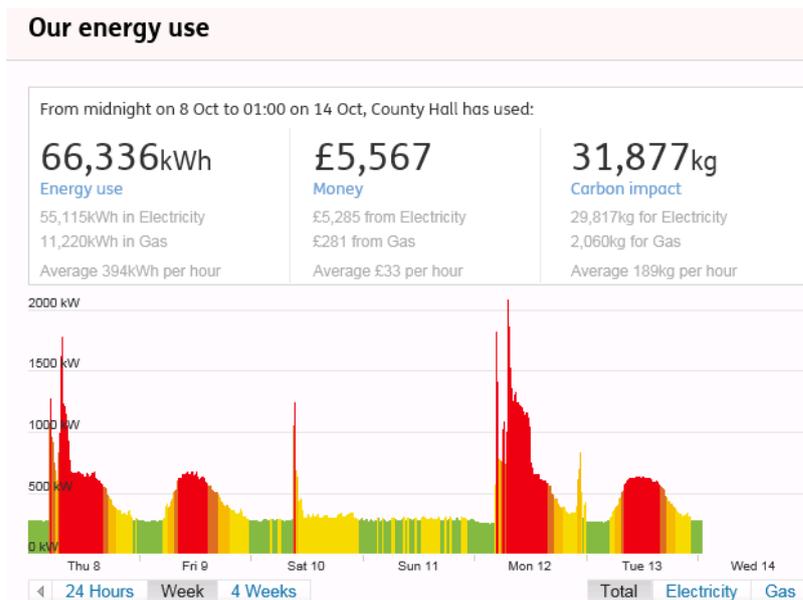
Both phases of the scheme are anticipated to remove around 155,000m² (the equivalent surface area of about 40 football pitches) of surface water from the combined wastewater network, which deals with wastewater and rainwater. This will significantly reduce the carbon footprint and costs associated with pumping the water through the existing network, as well as, reducing the chances of surface water flooding by freeing the capacity of the public sewer system to deal with extreme weather events. In addition, on street improvements should make the areas linked to this scheme really attractive places to live, reduce noise and pollutants, and encourage more people to walk and cycle.

Video: <https://vimeo.com/127346468>

Case Study 24: City of Cardiff Council – Carbon Culture

The City Council has adopted the Carbon Culture platform to release open data on energy use in order to show the improvements we’re making to the Council’s operations in over 300 operational buildings.

The Council has installed on-site meters to provide up-to-date information on energy usage, cost and the carbon impact of each of our buildings. The platform also provides information about each building’s energy certificate and access to energy use data over the last 3 years. This is part of the Council’s commitment to being a [one planet city](#) by 2050.



Residents or individuals visiting the platform can suggest ways of improving energy efficiency and cutting the use and cost of energy, as well as gaining a firm understanding of the Council’s carbon impact.

It has opened up information on the Council’s carbon impact and both its usage and spend on energy. This has enabled the Council and other stakeholders to identify inefficient buildings, take appropriate measures to reduce our energy use and be completely transparent about the amount of energy we use year-on-year.

Website: <https://platform.carbonculture.net/communities/cardiff-council/19/>

Case Study 25: City of Cardiff Council – “Cyd Cymru / Wales Together”

“Cyd Cymru / Wales Together” is Wales’ **collective switching scheme** led on by the City of Cardiff Council in partnership with the Vale of Glamorgan Council and Welsh Government. It is designed to help people save money on their energy bills.

We know that the price of energy has been going up over recent years. According to Ofgem and ONS figures, energy bills rose by as much as 24% between 2009 and 2012 whilst household incomes only rose by 2.9% over the same period. Because this is a trend that is likely to continue it means that the most vulnerable people in society are likely to be the worst affected.

The idea behind collective energy switching is that those interested in receiving a better deal group together as a ‘collective’ before approaching the energy suppliers. The larger the number of people that get involved, the more attractive the group of customers are likely to be to the energy suppliers.

In selecting a “switching agent” to negotiate with the energy suppliers on behalf of the collective, Cyd Cymru co-produced the specification with people, partners and stakeholders across Wales. This was to ensure we delivered a scheme that represented the needs and ambitions of all involved. Cyd Cymru also used the collective as an opportunity to make a number of participants aware of measures and behavioural changes to make their homes warmer and more energy efficient; which could help them save up to £150 a year, according to our partners, the Energy Saving Trust Wales.

In terms of outcomes, over the 3 switches run to date the Wales Together collective switching scheme has saved an average of £225 per household for customers, promoted energy saving advice and encouraged participants to become more confident when it came to switching energy suppliers to get a better deal. Following the latest switch 90% of those that switched said they would recommend the switch to others.

The collective amount saved by the first 3 switches is £811,791¹ and the table below shows the average savings by payment method for the latest switch. Significantly, savings were made across all payment types.

Savings by Payment Method- Switch 3			
New Pay Method	% of switchers	Aggregate Savings	Savings per switch by method
Monthly Direct Debit	92%	£492,123	£262
Pay on receipt of Bill	5%	£27,826	£260
Prepayment Meter	2%	£3,502	£80
Quarterly Direct Debit	1%	£3,954	£264

¹ These calculations have been provided by energy helpline based on information provided by customers on their current energy bills and the information for the tariff switched to. They do not include the savings for those that agreed to switch but then changed their mind.

As supporters of the Co-operative principles there is a unique opportunity to work with other Co-operative Councils to develop a single “collective switch” across the network. Cardiff has aligned its switches with Liverpool, Manchester, Cornwall and Sheffield, as well as other private sector employers and newspapers to form a larger collective of over 55,000 people. This meant that participants had an even bigger influence in the market and as a result, energy suppliers offered a unique tariff that provided many households with compelling levels of savings, and in switch 3 attained a deal that was the cheapest dual fuel tariff since 2010. It also clearly demonstrates that a national issue, like fuel poverty, can be addressed by working closely together at the local level.

A collective switching scheme on a national larger scale could potentially provide an even greater level of saving for our communities. The more people who join the scheme the **greater the savings** will be. Cardiff has therefore written to the Co-operative Council Innovation Network welcoming expressions of interest in undertaking a collective switch on an unprecedented scale in the UK, to achieve maximum saving for residents. Those who have already undertaken collective switching can build on their local brand, but nationally we could effectively coordinate activities and encourage other areas to take part by sharing our learning. This would exemplify the values of the co-operative and uses the principles of collectivisation to help deliver benefits for local people.

Moving forward, Cardiff is already considering how **the Cyd Cymru brand, and the principle of collective buying, could be applied to other areas of the market.**

www.cydymru-energy.com

Current members of the Network are:

Bassetlaw District Council	Norwich City Council
Cardiff Council	Oldham Council
London Borough of Croydon	Newcastle Under Lyme Borough Council
Edinburgh City Council	Newcastle Upon Tyne Council
Glasgow City Council	Plymouth City Council
London Borough of Islington	Rochdale Council
Knowsley Metropolitan Borough Council	Salford City Council
Lambeth Council	Sandwell Council
Liverpool City Council	Southampton City Council
Milton Keynes Council	Stevenage Borough Council
Newcastle-Under-Lyme Borough Council	Sunderland City Council
Newcastle City Council	Telford and Wrekin Council

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