

BATH & NORTH EAST SOMERSET ENVIRONMENTAL SUSTAINABILITY PARTNERSHIP

DRAFT COMMUNITY ENERGY STRATEGY 2014- 2017



SOLAR PANELS ON BATH & NORTH EAST SOMERSET COUNCIL'S ONE STOP SHOP BUILDING IN CENTRAL BATH. THE PANELS ARE OWNED BY THE COMMUNITY ENTERPRISE, BATH & WEST COMMUNITY ENERGY

EXECUTIVE SUMMARY

The Bath and North East Somerset Environmental Sustainability Partnership (ESP) is committed to tackling climate change, and increasing the use of renewable energy in order to increase the resilience of the local energy economy and maximise community benefits. The Bath & North East Somerset Core Strategy sets the target of installing 275MW of renewable energy by 2029, and this Community Energy Strategy sets a framework for meeting this target and fulfilling other policy aims such as the provision of lower cost energy, local economic benefits and community involvement.

Whilst the evidence underpinning the Core Strategy target shows that the energy resources exist within the district to meet the target, installation of renewable energy has been slow when compared to other areas in the South West, with 11MW of renewable energy installed as of spring 2013. The standard commercial model for renewable energy delivery, whilst important, has not yet brought the necessary scale of installation, and so this document proposes a strategic approach that addresses specific local characteristics.

This strategy can broadly be described as being about “community energy”; whereby residents participate in energy governance, ownership and revenue allocation. Experience has shown that this works well in Bath and North East Somerset; we believe that this is because our area has smaller scale technical opportunities, a beautiful and protected landscape and engaged communities. A community delivery model can also maximise the other public benefits of renewable energy.

We have already been employing this strategy, and have achieved national recognition for our work on community energy. This document considers how our work can be taken to the next level through a series of innovative approaches that fulfill the vision for the district to be “beautifully inventive”. The “Taking Action” section looks at how the community energy approach can be implemented through the following themes, taking into account existing action and suggesting possible future courses of action:

- 1. Generating Energy:** One of our aims is simply to install more renewable energy and meet the Core Strategy target. Work to date has included renewable energy being installed on public service estate, the development of planning policies and work to support community energy projects including the Council’s work with Bath & West Community Energy. This work can be continued to good effect, and in the future the powers of ESP members as property owners and investors could be further utilised.
- 2. Managing Energy:** The management of energy falls into two areas: reducing energy use and using energy more efficiently by matching supply with demand through “demand management”. Whilst there has been extensive work on energy efficiency, for example the ESP’s flagship “Energy@Home” scheme, demand management and the incorporation of “smart” technology represents a potential future course of action.

- 3. Providing Energy Services:** Buying and selling energy can be linked with efforts to generate and save energy in order to form a comprehensive local approach to “energy services” that encompass all or most aspects of energy in our area. Changes to the energy market could enable a local Energy Services Company to work at a smaller scale with less risk, whilst providing the opportunity for community benefits such as lower energy bills for residents and higher revenues for local renewable energy generators. This represents a significant potential future course of action and a study is being commissioned to investigate further.



BATH & WEST COMMUNITY ENERGY DIRECTORS, COUNCIL OFFICERS AND SOLAR INSTALLERS CELEBRATE THE INSTALLATION OF PV PANELS ON THE BATH ONE STOP SHOP BUILDING

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PURPOSE AND SCOPE OF THE STRATEGY

The Community Energy Strategy sets a framework for how we will approach meeting the renewable energy targets for Bath and North East Somerset whilst maximising the local benefits from renewable and low carbon energy.

The Community Energy Strategy is “owned” by the Bath and North East Somerset Environmental Sustainability Partnership (ESP¹) and will help deliver the Sustainable Energy theme of the ESP’s over-arching Environmental Sustainability & Climate Change Strategy².

This Strategy focuses on low carbon and renewable energy. The ESP recognises the importance of reducing energy consumption and there is a large body of work on energy efficiency underway through the Energy@Home scheme³. As such, this Strategy acknowledges the links between energy efficiency and renewable energy but does not detail the ESP’s overall approach to energy efficiency.

CONTEXT

National Context

The UK energy market is in a period of transition. Climate change commitments, plus global advances in technology and rising fossil fuel prices have meant that renewable energy is now big business; comprising 19.4% of the UK’s energy supply in the first quarter of 2014⁴. Changes to the energy system are set out in the table below:

	Old energy system	New energy system
Fuels	Fossil fuel or nuclear power stations that require constant input of fuel	Renewable technologies, many of which have high upfront capital cost but then require no input of fuel
Centralised or decentralised?	Centralised: power produced in a few massive power stations	Decentralised: power produced by many smaller installations distributed within the built and natural environment
Distribution	One way distribution of energy through national grids for electricity and gas which prevents “smart” and efficient demand management solutions	Smaller power plants feed energy into the system at multiple points. “Smart” grids embed IT to better balance energy demand and supply and achieve efficiency by reducing energy waste
Energy sales	Dominance of “Big 6” energy companies	Shift to smaller energy companies with different innovative business models

There are many knock-on effects of this shift in the energy system. In particular, the Government's Community Energy Strategy (2014)⁵ recognises the key role communities have played in the countries that lead on renewable energy such as Germany and Denmark. The national Community Energy Strategy outlines a program of action to facilitate community energy and estimates that up to 3GW of energy could be installed through community models by 2020. The national Community Energy Strategy also cites Bath & North East Somerset Council's work with Bath and West Community Energy as an example of how local authorities can support community energy:

“Bath & North East Somerset Council is committed to community enablement and partnership working, resulting in several successful community energy projects.”
- DECC Community Energy Strategy (2014)

Local Context

Bath and North East Somerset Council and our partners have long had a strong commitment to addressing climate change.

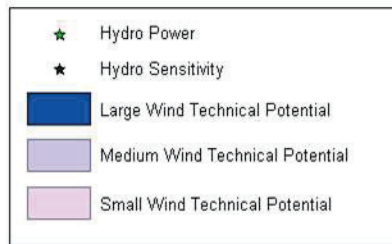
In 2009 the Bath & North East Somerset Sustainable Community Strategy set the target of reducing the district's carbon pollution 45% by 2026, in line with national targets. This target and the commitment to a sustainable and low carbon future is echoed in other key Strategies such as the Joint Health & Wellbeing Strategy⁶, the emerging Economic Strategy⁷ and the emerging Getting Around Bath Transport Strategy⁸. An innovative approach to achieving a low carbon future for the area is also in line with the Public Services Board Vision⁹ for the area (see box)

Public Services Board Vision: *“Bath and North East Somerset will be internationally renowned as a beautifully inventive and entrepreneurial 21st century place with a strong social purpose and a spirit of wellbeing, where everyone is invited to think big – a ‘connected’ area ready to create an extraordinary legacy for future generations.”*

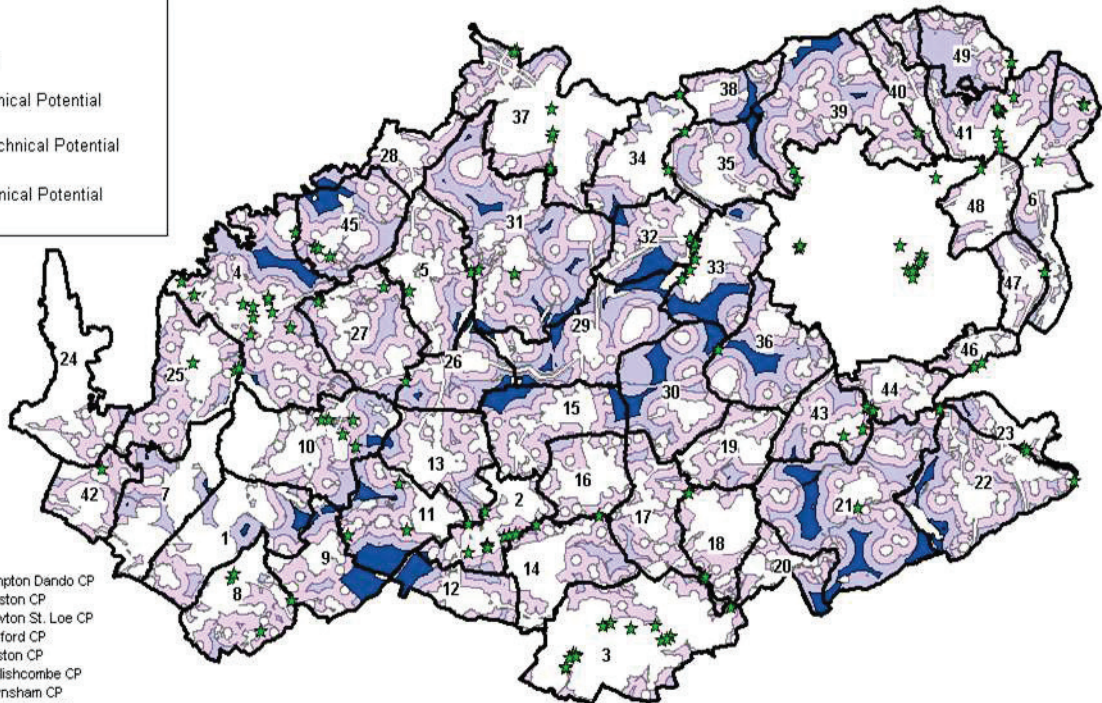
Renewable and low carbon energy is an important part of meeting this overall carbon reduction target. To drive this forward, Core Policy CP3 of the adopted Core Strategy sets a target for installed renewable energy capacity (see box).

Core Strategy Policy CP3: Renewable energy
110 MWe installed renewable electricity capacity
165 MWth of installed renewable heat capacity

Bath and North East Somerset - By Parish



- 1 West Harptree CP
- 2 High Littleton CP
- 3 Norton-Radstock CP
- 4 Chew Magna CP
- 5 Publow CP
- 6 Bathford CP
- 7 Compton Martin CP
- 8 East Harptree CP
- 9 Hinton Blewett CP
- 10 Stowey-Sutton CP
- 11 Cameley CP
- 12 Farrington Gurney CP
- 13 Clutton CP
- 14 Paulton CP
- 15 Farnborough CP
- 16 Timbury CP
- 17 Camerton CP
- 18 Peasedown St. John CP
- 19 Dunkerton CP
- 20 Shoscombe CP
- 21 Wellow CP
- 22 Hinton Charterhouse CP
- 23 Freshford CP
- 24 Nempnett Thrubwell CP
- 25 Chew Stoke CP
- 26 Chelwood CP
- 27 Stanton Drew CP
- 28 Whitchurch CP
- 29 Marksbury CP
- 30 Priston CP
- 31 Compton Dando CP
- 32 Corston CP
- 33 Newton St. Loe CP
- 34 Saltford CP
- 35 Kelston CP
- 36 Englishcombe CP
- 37 Keynsham CP
- 38 North Stoke CP
- 39 Charlcombe CP
- 40 Swainswick CP
- 41 Batheaston CP
- 42 Ubley CP
- 43 Combe Hay CP
- 44 Southstoke CP
- 45 Norton Malward CP
- 46 Monkton Combe CP
- 47 Claverton CP
- 48 Bathampton CP
- 49 St. Catherine CP

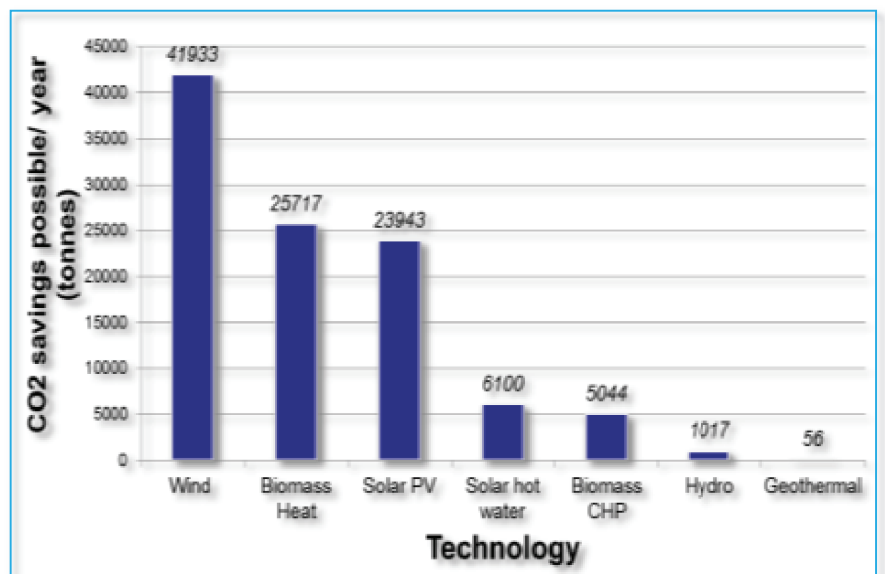


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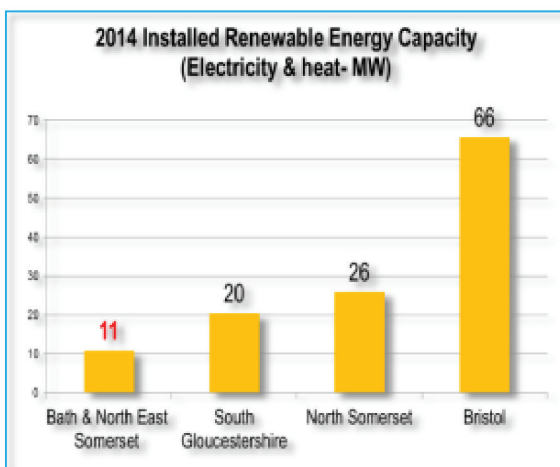
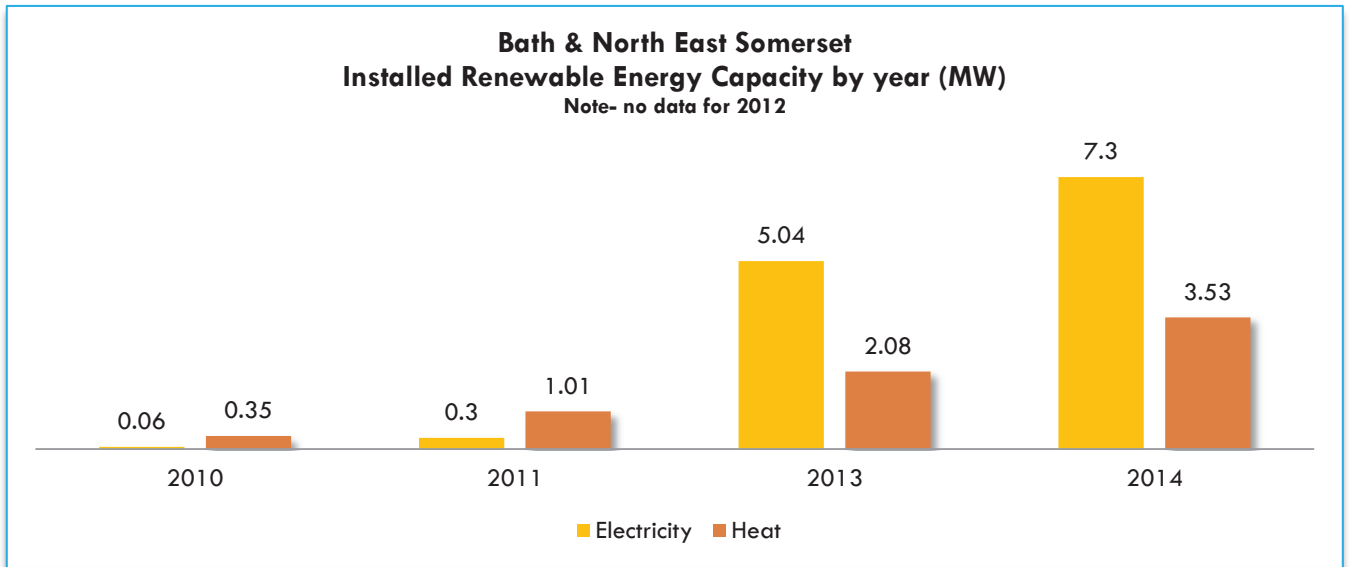
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BATH AND NORTH EAST SOMERSET WIND AND HYDRO POWER POTENTIAL, BY PARISH

The Core Strategy target is based on a 2010 study of the district's renewable energy potential. The map above shows wind and hydro resources. It shows that the sites with adequate wind for large turbines are quite small, meaning that large wind farms are unlikely to be technically feasible in our district. Regardless of this, wind has the highest potential of any renewable technology, as shown in the bar chart.



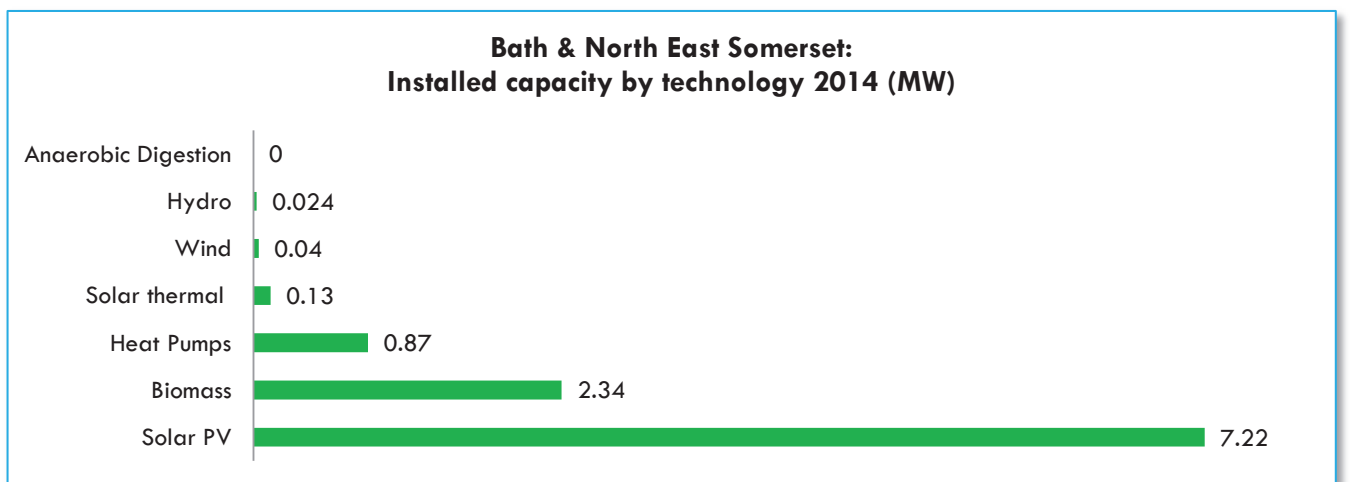
Progress so far



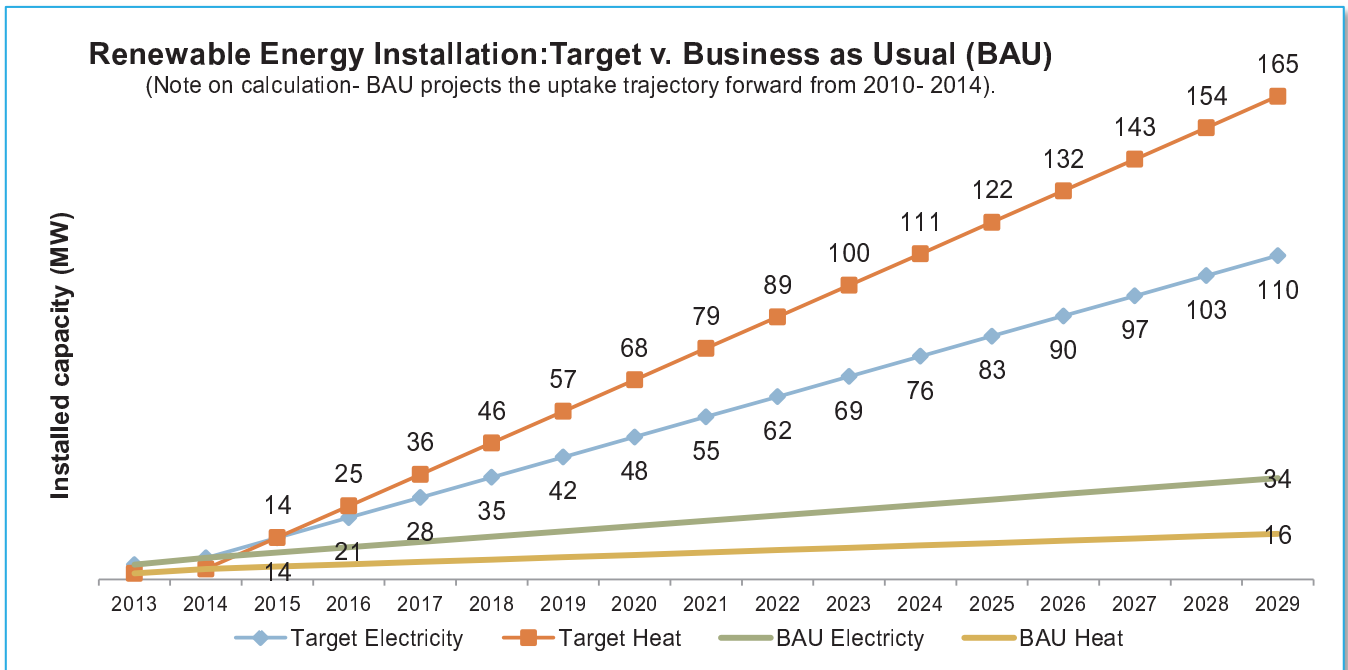
Whilst chart above shows that the uptake of renewable energy is increasing, the second chart shows that our district still lags behind other areas within the West of England.

The third chart shows that the amount of renewable energy installed in Bath and North East Somerset has been solar PV, whilst the district's substantial wind resource has yet to be utilised.

Note: all figures for these charts and the chart on p8 taken from the Regen SW Progress Report¹⁰



A step change in the speed of renewable energy installation will be needed in order to meet our target (see chart below). Whilst it is unlikely that installation will be linear as shown in the chart, an average of around 11MW of renewable heat and 7MW of renewable electricity will need to be installed each year between 2014 and 2029 to meet the target.



Whilst the scale of installation required has not yet been realised, the groundwork is being laid for more rapid progress on sustainable energy. The council and partners have been recognised for their innovative approaches to sustainable energy, most notably through the Council’s receipt of the “Most Proactive Public Sector Body” award at the South West Green Energy Awards 2013.aims of the Strategy

AIMS OF THE STRATEGY

The approach in this Strategy aims to achieve the following:

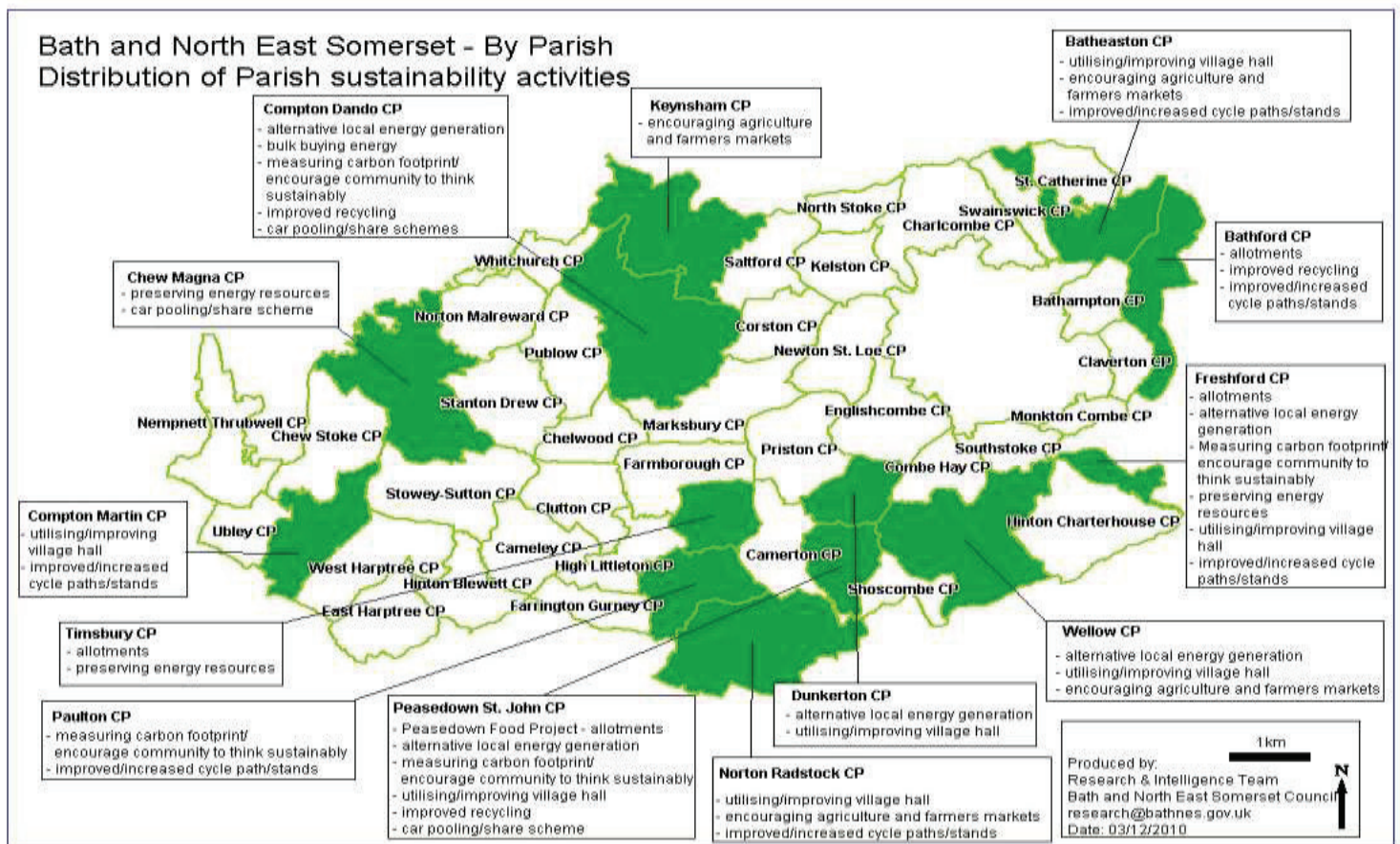
- 1. More low carbon, sustainable energy** to meet the area’s carbon reduction targets and address climate change.
- 2. Gain local control over energy costs** for our residents and businesses
- 3. Local economic benefits** to make sure that money and jobs stay in the area
- 4. Maximum community involvement** so that local people have ownership, governance of, and direct benefits from renewable energy in their locality

STRATEGIC APPROACH: COMMUNITY ENERGY

*‘Community Energy’...is defined as projects or initiatives focused on the four strands of reducing energy use, managing energy better, generating energy or purchasing energy. This included communities of place and communities of interest. These projects or initiatives share an **emphasis on community ownership, leadership or control where the community benefits...stay in the local community...** This includes shared ownership or joint ventures where benefits are shared by the community” - DECC Community Energy Strategy 2014*

Work to date on energy has shown that community involvement is not just a “nice to have” in our district. It is essential, for the reasons below:

- 1. A beautiful, protected environment:** Two thirds of our district is Green Belt and large areas are within the Cotswold and Mendip Areas of Outstanding Natural Beauty. One of the reasons that Bath has been inscribed as a World Heritage City is because of *“the green setting of the City in a hollow in the hills¹¹”*. When change is proposed to these much-loved environments, communities will need to be involved in the decisions and benefit directly.
- 2. Engaged communities:** Our district is home to many residents and groups who are concerned about sustainability. This indicates an appetite for community energy, borne out by a series of community share issues by BWCE which have raised £2.7m for projects in the district. The map below (2010) shows rural Parish Plans which feature sustainability aspirations:



3. **Smaller scale technical opportunities:** As noted, the local renewable energy resource lends itself to smaller scale technical opportunities that may be less appealing to commercial developers but of a suitable scale for community projects.
4. **Meeting other policy objectives through renewable energy:** Renewable energy does not necessarily bring local benefits. The standard UK model for commercial development of renewable energy is for benefit to accrue to individual landowners or investors outside the area. Market intervention is needed to promote delivery that spreads and retains the benefits in the local area.

Sustainable energy installed through a standard commercial model will be important for meeting the targets, however for the reasons above, the ESP's efforts will focus on supporting community energy. This is in line with the ESP's Environmental Sustainability & Climate Change Strategy, which sets "Community Enablement" as a strategic approach, alongside "Leading by Example" and "Partnership Working"- all of which will be required to achieve our aims.



THE 2014 AGM OF BATH & WEST COMMUNITY ENERGY AT BWCE'S HARTHAM PARK SOLAR ARRAY IN WILTSHIRE

TAKING ACTION

Changes to the energy system in the UK have created new ways for districts like Bath and North East Somerset to get involved in the energy system. For the purposes of this Strategy, the energy system is broken into the themes below:

Theme 1: Generating Energy: *Increase the production of low carbon energy*

Theme 2: Managing Energy: *Reduce use and take a “smart” approach to managing demand*

Theme 3: Providing Energy Services: *Develop a local energy services model*

Existing actions being taken and possible future actions in these themes are outlined below. In all cases, success will involve continuing the existing actions whilst potentially adding more innovative actions in the future. The potential future actions listed below are suggestions to be discussed with partners as future action plans are developed. Progress on exploring these potential future actions will be reported back to the ESP Board.

THEME 1: GENERATING ENERGY

One of the aims of the strategy is simply to install more renewable energy and meet the Core Strategy target.

Existing Action

- Renewable energy installations on ESP partners’ estate:** Much progress has been made. The table below shows some of the accomplishments of public service partners:

Avon Fire & Rescue	<ul style="list-style-type: none"> • 30 kW Solar PV installed on existing stations • Target of 20% renewable energy generation on all new builds • Review of entire estate underway with a view to further Solar PV
B&NES Council	<ul style="list-style-type: none"> • 243kW PV on Keynsham Civic Centre, helping the building to achieve its target of a Display Energy Certificate rating “A” • Solar PV installed on 6 school roofs through a roof-rental lease with BWCE • 37.5kW PV installed on One Stop Shop building in Bath, working with BWCE
Bath Spa University	<ul style="list-style-type: none"> • 500 kW biomass system for Commons building - to be expanded to serve other academic and residential buildings via a district heating scheme • 500 kW biomass system for new "Gardens" residential development - also to be expanded to serve other academic buildings via a district heating scheme • Investigating solar PV to approx 350 kW over 2 sites
University of Bath	<ul style="list-style-type: none"> • 2 solar PV systems installed for a total of 74kWp currently installed plus several new systems planned on new and existing buildings • 6 solar thermal systems comprising around 22,000kWh heat each year • Various renewable studies completed/under investigation either through new builds or at campus level.

2. Developing new frameworks to support community energy:

The Cooperation Agreement between the Council and Bath and West Community Energy (BWCE) sets out a way for the two organisations to work together, invoking the Well Being powers in the Local Government Act 2000 and the wide-ranging General Power of Competence in the Localism Act 2011¹². The Cooperation Agreement is an innovation in relationship management and has been used as a template for other working arrangements.

3. Enabling Community Enterprise: The Council has taken a range of action to facilitate the development of BWCE, such as the provision of a pump-priming grant, sites on Council estate for projects and investment through the Council's Green Investment and Jobs Fund.

4. Community enablement: To support community energy groups at an earlier stage of development, the Council convenes a Community Energy Network and the online B&NES Environmental Sustainability Network¹³ which facilitates collaboration and resource sharing. The council also provides individual support to groups with training, signposting, resource sharing and grant funding when available.



BWCE is unique in our area, as a not-for-profit enterprise set up by local people. BWCE keeps economic benefits from renewable energy in the area through a local share-ownership model and the reinvestment of surplus revenues into the BWCE Community Fund, an independent Charity for local low carbon projects.

As of April 2014, BWCE has raised £3.5m and installed 1.7MW of solar PV through its own projects and those of its partners. BWCE is in negotiation with developers about a further 10MW of solar PV as well as developing other solar, hydro and wind projects.

BWCE also mentors other community energy groups. For example, with BWCE's support, Low Carbon Gordano in North Somerset recently raised £2.2m in a local share offer for their solar project.

BWCE's recognition has grown and they have won a number of awards, including Community Energy Organisation of the Year at the UK's first community energy conference in September 2014 (see photo). For more information, see www.bwce.coop



THE B&NES ENVIRONMENTAL SUSTAINABILITY NETWORK: THE ESP'S SOCIAL NETWORK WITH OVER 400 MEMBERS AND MANY INTEREST GROUPS

5. Using planning powers to support renewable and community energy: Council planning policies to support renewable energy have been developed based on extensive studies¹⁴. These policies, summarised in the table below, have resulted in some notable achievements, for example the installation of district heating at the Bath Riverside development:

Planning Policy	Contents, impacts and evidence base
Core Strategy ¹⁵ : Core Policy CP3 Renewable Energy	In addition to setting targets, this policy states that: Proposals for low carbon and renewable energy infrastructure, including large-scale freestanding installations, will be assessed under the national policies and against the following: <ul style="list-style-type: none"> • potential social and economic benefits including local job creation opportunities • contribution to significant community benefits • the need for secure and reliable energy generation capacity • environmental impact
Core Strategy: Core Policy CP4 District Heating	<ul style="list-style-type: none"> • Within “district heating priority areas” (Bath Central, Enterprise Area and Keynsham) developments are expected to incorporate district heating infrastructure and connect to existing systems where available • Within 12 “district heating opportunity areas”, developments are encouraged to incorporate district heating infrastructure • Thermal Masterplanning should be undertaken e.g. anchor loads, density, heat demand profiles etc and the heat hierarchy should be followed
Bath Western Riverside Supplementary Planning Document ¹⁶ (SPD)	<ul style="list-style-type: none"> • 10% reduction in carbon emissions is required through use of renewable energy – as established by an Energy Use Assessment • Requirements for Code 4 and BREEAM • At least one zero carbon building • Buildings to be future proofed to allow for conversion to full renewable or zero carbon energy as technology develops
Sustainable Construction and Retrofitting SPD ¹⁷	A guide for residents on installing energy efficiency and renewable energy technologies on the main building types in the area. Includes Listed Building guidance and case studies of renewable energy on listed buildings.
Renewable Energy in the Green Belt: Informal Guidance ¹⁸	National policy states that most renewable energy development in the Green Belt is inappropriate development. Developers must demonstrate Very Special Circumstances in order to get planning consent. This guidance sets out how this test might be met, including detail on social, economic and community benefits.



POTENTIAL HEAT NETWORK ROUTES IN THE BATH ENTERPRISE DISTRICT HEAT PRIORITY AREA TAKEN FROM THE 2010 AECOM DISTRICT HEATING STUDY THAT FORMED THE EVIDENCE BASE FOR POLICY CP4

IMAGE CREDIT: BURO HAPPOLD

- 6. Investment in renewable energy and community projects:** The £1 million Green Investment and Jobs Fund has been set up to provide a policy loan for local renewable energy projects to further a range of Council policy objectives, whilst generating a source of income for the Council and contributing to the creation of 'green' jobs. The first policy loan of £500k will be invested in the Wilmington Farm Solar Array, a BWCE community energy project. The loan should deliver a 6.5% annual return on investment. The loan will also support the community share offer for Wilmington Farm by helping to overcome the current market barrier of banks being unwilling to lend to community energy projects of this scale.
- 7. Influencing large stakeholders:** The Council and partners can help to unblock issues that affect renewable energy. For example, the Council is in discussion with BWCE and Bristol Airport about radar mitigation for wind turbines to reduce the risk to aviation in the Airport's airspace. The Council is also prepared to help in discussions with the District Network Operator, Western Power Distribution, to find less costly solutions in places where the grid doesn't have the capacity to carry more renewable electricity.

Potential Future Action

- 1. Use of property powers:** In addition to continuing to identify sites within their own estate to install renewables and community energy, ESP partners may undertake some of the activities below. Consideration could be given to how these activities could be used to influence the uptake of renewable energy and community energy projects:
- **Leasing of land**
 - **Leasing of property**
 - **Commissioning of new build**
 - **Co-funding development**
 - **Disposing of land**



THE 243KWP SOLAR ARRAY BEIGN INSTALLED IN 2014 ON THE COUNCIL'S KEYNSHAM CIVIC CENTRE. THE ARRAY WILL BRING A FINANCIAL BENEFIT OF AROUND £50,000 AND SAVES 125 TONNES OF CO2 PER YEAR

2. **Continued Investment in community renewable energy:** Building on the experience of the Green Investment and Jobs Fund policy loan, the Council and ESP partners could look for ways to encourage other organisations, businesses and communities to investigate investment opportunities in local community energy projects.



SOLAR ARRAY ON OLDFIELD JUNIOR SCHOOL, ONE OF SIX SCHOOL ARRAYS INSTALLED BY BWCE IN BATH AND NORTH EAST SOMERSET. THE SCHOOLS GETS FREE ELECTRICITY AND THE PANELS ARE USED AS AN EDUCATIONAL RESOURCE
IMAGE CREDIT BATH CHRONICLE

THEME 2: MANAGING ENERGY

The management of energy falls into two areas: reducing energy use and using energy more efficiently by matching supply with demand through “demand management”.

Existing Action

Reducing energy demand through energy efficiency: As noted previously, a great deal of work is underway through the B&NES Energy@Home scheme to improve domestic energy efficiency. In the future, the intention is for this work to extend to non-domestic properties. ESP partners have also undertaken a large amount of energy efficiency work on their own properties.

Potential Future Action

Investigate opportunities for “smart” demand reduction to enable greater energy efficiency and reduce costs.

Opportunities include:

- Demand management on our own properties
- Smart grids on regeneration sites
- Electric vehicles as part of a smart grid



AN ELECTRIC POOL CAR IN USE BY A COUNCIL EMPLOYEE

What is a “Smart Grid”?

Our current electricity grid was built in the 1890s. We are now stretching its patchwork nature to its capacity. A “smart” grid could better handle the variability of renewable energy and the increasing complexity of electricity in the 21st Century.

What Makes a Grid “Smart?”

The Smart Grid will enable two-way communication between the utility and its customers. The benefits of Smart Grid include:

- Increased integration of large-scale renewable energy systems meaning that renewable energy is not wasted in periods of low demand
- More efficient transmission of electricity
- Quicker restoration of electricity after power disturbances
- Reduced operations and management costs for utilities, and ultimately lower power costs for consumers
- Reduced peak demand, which will also help lower electricity rates
- Better integration of customer-owner power generation systems, including renewable energy systems

Demand management

“Demand management” refers to using technology to match power supply and demand. This includes smart meters which relay information about energy use between the grid and the user. DECC is planning a full national rollout of smart metering by 2020. Smart appliances and industrial processes communicate with smart meters, giving the option to shut off when power is expensive (e.g. when the wind isn’t blowing). Energy storage is part of this; e.g. electric vehicles can act as batteries, storing and releasing energy, or surplus renewable electricity can be converted to hydrogen.

THEME 3: PROVIDING ENERGY SERVICES

Buying and selling energy can be linked with efforts to generate and save energy in order to form a comprehensive local approach to “energy services” that encompass all or most aspects of energy in our area.

In Bath and North East Somerset, energy expenditure is around £157m a year. This money mostly leaves the area with profits accruing to the Big 6 energy companies. If these revenues could be captured locally, they could potentially create an economic multiplier effect, income for participants and/or delivery of policy objectives e.g. lower cost, lower carbon energy.

Some large local authorities, for example, Birmingham and Bristol City Councils are opting to set up “Energy Service Companies” (ESCOs). In the past, we have rejected the idea of forming a local ESCo because it was difficult to see how it could support community energy and the only models in the UK involved high levels of investment and risk. However the changes to the energy market may now enable an ESCo to work at a smaller scale with less risk. These changes provide the potential for community benefits such as lower energy bills for residents and higher revenues for local renewable energy generators. In short, the development of a local ESCo may provide the ESP with the ability to step up our work on energy, win greater local control and increase the community benefits arising from the energy system.

Studies to explore potential future action

- 1. Energy Services Company (ESCO) study:** The Council will undertake a study to investigate a local energy services approach and the community benefits such an approach could bring. This study will look at a variety of business models that build on existing work and local opportunities.
- 2. Decentralised energy network studies:** Energy networks have already been built at the Bath Riverside development, Bath Spa University and the Royal United Hospital. In addition, the new Keynsham Civic Centre is future-proofed to connect to a heat network and the new Keynsham Leisure Centre could provide a key heat demand for the Keynsham energy network. As previously noted, the Core Strategy will also drive the installation of energy networks through Policy CP4.

What are Energy Networks?

Energy networks supply an area with heat and sometimes electricity or cooling from a central plant through local network of pipes/wires. This replaces the need for plant in individual buildings, e.g. boilers or AC units.

Energy networks can reduce CO₂ either through use of low carbon technologies such as biomass boilers, or through more efficient use of fossil fuels, e.g. gas-fired combined heat and power engines (CHP) which generate electricity and use the heat from generation as district heating, unlike centralized power stations which usually waste the heat. At best, gas power stations are 50% efficient with 50% of the remaining energy lost as heat. By using the heat, CHP systems can be up to 90% efficient.



Further studies will investigate area-wide energy networks on the Bath Riverside Enterprise Area and Keynsham town centre building on previous studies that have indicated potential in these areas. Energy networks may provide an opportunity for local control of energy production, purchase, distribution and sale. Energy networks could also potentially be combined with “smart” demand management systems to enable efficient use of local energy. The energy networks study will be closely linked with the ESCo study since energy networks could be an important delivery mechanism for a district-wide ESCo.



THE ENERGY CENTRE AT CREST'S BATH RIVERSIDE DEVELOPMENT, WHICH CONTAINS THE GAS CHP AND BIOMASS ENGINES WHICH SUPPLY HEAT TO THE DEVELOPMENT THROUGH A NETWORK OF PIPES. THE HEAT NETWORK IS OWNED AND OPERATED BY EON. IMAGE CREDIT: TRANSITION BATH

REFERENCES

- ¹ B&NES Environmental Sustainability Partnership: <http://www.bathnes.gov.uk/services/neighbourhoods-and-community-safety/working-partnership/environmental-sustainability-partne> (accessed 28.10.14)
- ² Environmental Sustainability Partnership: Environmental Sustainability & Climate Change Strategy 2012-2015: http://www.bathnes.gov.uk/sites/default/files/esp_-_strategy_2012-2015.pdf (accessed 27.10.14)
- ³ B&NES Energy@Home scheme: <http://www.bathnes.gov.uk/services/environment/sustainability/energy-home> (accessed 28.10.14)
- ⁴ Department of Energy & Climate Change (2014) "UK Energy Statistics 26 June 2014" https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/323315/PN_June_14.pdf (accessed 28.10.14)
- ⁵ Department of Energy & Climate Change (2014) "Community Energy Strategy" https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/275163/20140126Community_Energy_Strategy.pdf (accessed 27.10.14)
- ⁶ Bath & North East Somerset Health & Wellbeing Board "Joint Health & Wellbeing Strategy" (2013) <http://www.bathnes.gov.uk/services/neighbourhoods-and-community-safety/working-partnership/health-and-wellbeing-board> (accessed 8.11.14)
- ⁷ Bath & North East Somerset Economic Strategy Review (2014) <http://www.bathnes.gov.uk/services/business/economic-business-development> (accessed 8.11.14)
- ⁸ Bath & North East Somerset Council "Getting Around Bath Transport Strategy" <http://www.bathnes.gov.uk/consultations/getting-around-bath-draft-transport-strategy> (accessed 8.11.14)
- ⁹ Bath & North East Somerset Public Services Board <http://www.bathnes.gov.uk/services/neighbourhoods-and-community-safety/working-partnership/bath-and-north-east-somerset-public> (accessed 8.11.14)
- ¹⁰ Regen SW Progress Reports: <http://www.regensw.co.uk/our-work/creating-a-positive-environment/1145-2/progress-report/> (accessed 11.11.14)
- ¹¹ Bath and North East Somerset Council "The City of Bath World Heritage Site Management Plan (2010)" http://www.bathnes.gov.uk/sites/default/files/whs_endorsed_plan_feb_2011.pdf (accessed 27.10.14)
- ¹² House of Commons Library "Local authorities: the General Power of Competence" (2014) <http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=3&cad=rja&ved=0CDkQFjAC&url=http%3A%2F%2Fwww.parliament.uk%2Fbriefing-papers%2Fsn05687.pdf&ei=CAPpUp31Flmw7QbS2oD4Dw&usq=AFQjCNEzib4cHqvRoCpyHp-gs19pmLIA0Q&bvm=bv.60157871,d.ZGU> (accessed 11.11.14)
- ¹³ B&NES Environmental Sustainability Network <http://www.sustainabilitynetwork.co.uk/> (accessed 27.10.14)
- ¹⁴ Planning Policy Energy Studies: <http://www.bathnes.gov.uk/services/planning-and-building-control/planning-policy/evidence-base/sustainability> (accessed 11.11.14)
- ¹⁵ Bath & North East Somerset Council Core Strategy (2014): <http://www.bathnes.gov.uk/services/planning-and-building-control/planning-policy/core-strategy-examination> (accessed 11.11.14)
- ¹⁶ Bath & North East Somerset: Bath Western Riverside Supplementary Planning Document (2006) <http://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Planning-Policy/SPDs/BWRSPD-Part1StrategicFramework.pdf> (accessed 11.11.14)
- ¹⁷ Bath & North East Somerset Council: Sustainable Construction and Retrofitting SPD (2013) <http://www.bathnes.gov.uk/services/planning-and-building-control/planning-policy/supplementary-planning-documents-spds/sustain#three> (accessed 11.11.14)
- ¹⁸ Bath & North East Somerset Council: Informal Guidance Note: Renewable energy in the Green Belt in Bath & North East Somerset (2013) http://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Planning-Policy/Sustainable-and-Retrofitting/regb_advice_note_april_2013.pdf (accessed 11.11.14)