

Nuclear Free Local Authorities

briefing



Date: 8th August 2011

No.86

Subject: Realising an English 'Renewables Revolution' in future energy policy

1. Background to briefing

This briefing has been developed by the NFLA Policy Advisor Pete Roche, with some additional information provided by the NFLA Secretary, Sean Morris. It is the second of a series of four reports looking at future energy policy in England, Ireland, Scotland and Wales. It promotes the NFLA's approved policy that a combination of a wide renewable energy mix, microgeneration and energy efficiency can provide the energy needs for each country without recourse to new nuclear power generation.

The Scottish energy system was considered in NFLA Policy Briefing 76 – '**Scotland's electricity needs – can they be met from renewables without recourse to nuclear?**' and this will be updated shortly. The very comprehensive Garrard Hassan report (1) for Friends of the Earth Scotland, WWF Scotland and RSPB Scotland published similar results. NFLA Policy Briefings on future Welsh and Irish energy policy are also being produced and will be published by the NFLA Secretariat shortly.

"To the Germans, "energy revolution" is spelled j-o-b-s."

Ulrich Beck, German Sociologist and member of the special expert commission appointed by Chancellor Merkel in the wake of the Fukushima disaster, 30th July 2011. (2)

2. Introduction

Statistics published by the Department of Energy and Climate Change show 700,000 more UK families fell into fuel poverty¹ in 2009, bringing the total to 5.5 million, or one in five of all households. According to Consumer Focus recent energy price increases announced in July 2011 for domestic consumers are likely to push this figure up to 6.4 million. (3)

The Government has a statutory duty under the Warm Homes and Conservation Act 2000 to eradicate fuel poverty, as far as is reasonably practical, in England by 2016.² It also had an interim target to eliminate fuel poverty among vulnerable low income households (pensioners, disabled people and families with children) by 2010, but has clearly failed to meet this, yet it says it still intends to meet the 2016 target. (4)

¹ In the UK, fuel poverty is when a household needs to spend more than 10% of its income on fuel in order to heat its home to an adequate standard, and have hot water and run lights and appliances.

² Similar targets exist for the devolved governments.

NFLA - THE LOCAL GOVERNMENT VOICE ON NUCLEAR ISSUES

At the same time under the Climate Change Act 2008, the UK is required to reduce its emissions of targeted greenhouse gases by **at least 80%** by 2050 relative to 1990 levels. The Government's Committee on Climate Change (CCC) highlighted in its fourth carbon budget report that the near-total decarbonisation of the power sector by 2030 would play a key role in enabling the UK to meet this target. (5) This transformation is also important because it will allow the electrification of a substantial part of the transport and heating sectors without increasing carbon emissions.

More than 20 coal, oil and nuclear plants are due to close over the next decade which means the electricity industry needs to invest around £200bn in new generating capacity. (6) As a result it is widely agreed that energy prices will have to increase over the next 20 years whichever energy path we follow. (7) Ofgem has predicted that, in the worst-case scenario, household energy bills could double to £2,000 a year within a decade (8) adding perhaps another million households to those in fuel poverty. (9) This means that England and the wider UK face two urgent and over-riding challenges which are sometimes seen as being in conflict with each other - to rapidly decarbonise the electricity sector using sustainable technologies, at the same time as eliminating fuel poverty.

In the NFLA's view, it is difficult to see how the Government can meet both its climate change and fuel poverty objectives without a much more ambitious energy efficiency and micro-generation programme. A climate change focus that reinforces the solutions to fuel poverty means a greater emphasis on capital investment in the energy efficiency of our housing stock. (10) As WWF-UK pointed out in recent evidence to the House of Commons Energy and Climate Change Committee:

"Not only can energy demand reduction allow great cost savings for consumers and enhance the UK's energy security, but it also fundamentally reduces the size of the decarbonisation challenge. This can be done by setting clear energy demand reduction targets and a robust policy framework for reaching these targets, which would need to involve ambitious nationwide energy efficiency and demand reduction measures in the residential, transport and business sectors." (11)

UK households are responsible for around 27% of greenhouse gas emissions. Most of the properties standing today will still be around by 2050 (25 million out of 25.8 million), so if the UK Government is to meet its carbon reductions targets, it will need to implement a set of policies which can cut emissions from the domestic sector in any case. To do this every house will need excellent insulation and some form of Low and Zero Carbon Technology – microgeneration or a connection to a community heating scheme. This means carrying out refurbishment of virtually all the UK's dwellings over the next 40 years or 625,000 dwellings every year between now and 2050. (12).

This briefing focuses on the role that Local Authorities in England can, and are, playing in trying to implement such a programme.

3. **The Government's Response**

The Energy Bill which is currently going through the UK Parliament includes provision for a "Green Deal" and associated measures which are supposed to be key to improving household energy efficiency and tackling fuel poverty. (13) But research by E3G suggests the Green Deal will struggle to achieve the Government's limited ambitions on efficiency because householders are likely to reject the scheme as a result of its high cost, (14) and a survey by the Federation of Master Builders (FMB) found builders expect the response to the Green Deal to be "*underwhelming*". (15) The Bill proposes a new Energy Company Obligation (ECO) which will target help towards low income and vulnerable consumers from 2013 onwards. But, according to Consumer Focus, much more extensive resources will be required to eradicate fuel poverty. (16) The trouble is that it is the fuel poor who tend to live in older properties with solid walls or off the gas grid which require more expensive measures, such as solid wall insulation and new heating systems. (17)

The Government is also attempting to facilitate the investment required to build the equivalent of up to 20 large new power stations by reforming the electricity market and has recently published a White Paper on its plans, but this is overwhelmingly focussed on incentivising new electricity supply rather than demand reduction. (18) WWF-UK argues that the reforms should aim to deliver decarbonisation of the power sector by 2030 in the most environmentally sustainable way (without relying on environmentally hazardous new nuclear power stations) and provide best value for consumers and most benefit to the UK economy. (19) In the NFLA's view, ambitious energy demand reduction targets and a clear framework to deliver these targets would have been one of the best ways for 'Electricity Market Reform' to achieve these objectives, but these are absent from the White Paper.

The UK Government claims that “*even with major improvements in overall energy efficiency ... demand for electricity is likely to increase*”. The Government's 'Revised Overarching National Policy Statement on Energy' foresees a need for a doubling or even tripling of total installed electricity generating capacity by 2050. (20) Yet Germany, which is planning an entirely non-nuclear route, even with the same 2050 objective of an 80% reduction in greenhouse gases, expects electricity demand to be 25% below present levels by implementing an energy efficiency programme. (21) The UK Government relies on something called the 'Pathways Analysis' to reach its conclusion, but this consists of various scenarios for 2050 none of which assume penetration of basic energy-saving measures like solid wall insulation into more than 1 in 3 homes. Similarly, it is assumed that the commercial sector can only improve its energy efficiency by just 20% over the next 40 years – so far below what has been achieved historically as to be inexplicable. (22)

Germany has put in place new incentives to support the renovation of buildings and is using the auction revenue from the European Emissions Trading Scheme for renovation programmes. It has also put in place special tax reductions for the renovation of buildings. Together 3.4 billion euros will go towards a lower energy consuming, modernized building sector in Germany. (23)

Professor of Energy Policy at Exeter University, Catherine Mitchell, says what Electricity Market Reform should have included is a new type of energy system with regulated obligations which would have stimulated a refurbishment programme on the level required - on the scale of the transition from town gas to natural gas. Tendering for street-by-street or area-by-area contracts to make homes energy efficient would have been a much more cost effective way of moving towards a sustainable low carbon economy. (24)

“The opportunity should exist for companies not to generate low-carbon electricity but instead to reduce the demand for energy through efficiency measures, so-called ‘negawatts’. In electricity markets in the US, for example, 10% total demand is routinely removed at lower costs than supply. Moreover, the institutional framework for how the complex interaction of all the mechanisms will work is also missing.” (25)

4. Energy by numbers

The Government's National Policy Statement on Energy gives the following numbers:

Total Current Generating Capacity	85 Gigawatts (GW)
Large combustion plant directive – coal station closures by 2015	12GW
Nuclear closures over next 20 years	10GW
Generating Capacity required in 2025	113GW
Of which new generating capacity	59GW
Of which renewable	33GW
For industry to determine	26GW
Non-nuclear already under construction	8GW
Proposals for new reactors already proposed	16GW

Note: Figures taken from DECC's EN-1 document. (26)

If, instead of planning for a doubling or tripling of electricity demand by 2050, the UK Government was planning for a reduction of 25%, as in Germany, then it would be expected that the capacity required by 2025 would fall by around 15%, removing the need for new reactors.

5. **A sustainable energy plan for England – building a renewable energy manufacturing base.**

Several well respected reports such as the European Climate Foundation's Roadmap 2050 report (27) and the Offshore Valuation Report (28) have made it clear that it is technically feasible for the UK and the EU to receive the overwhelming majority of their electricity from renewable sources without endangering the reliability of the electricity system (and at costs not substantially higher than other ways of decarbonising the power sector), as long as the UK significantly improved its interconnection infrastructure with other European grids. In particular the Offshore Valuation Report highlights that by using 29% of the UK's practical offshore resource, the offshore renewables industry could enable the UK to install 169GW of offshore renewable capacity, thus allowing the country to become a net exporter of electricity by 2050.

The Government says the UK needs 59GW of new generating capacity by 2025. Of this, 33GW needs to be renewable capacity to meet our obligation to European Union targets. Government and industry have been planning to meet this requirement for 33GW of new renewable capacity mostly with offshore wind. (29)

If the English Regions are to make the most of this new industry it needs an industrial strategy to help build a marine energy manufacturing base. A few examples of recent developments are listed below.

6. **South-West England.**

Merlin Hyman, the chief executive of Regen SW – the renewable energy agency for south west England - has urged councils and businesses to seize the opportunity to put significant support for renewable energy at the heart of new Local Enterprise Partnerships, and warned that government policy might otherwise allow Scotland to steal a march on the English regions in green job creation. Regen SW's annual Renewable Futures conference in Bath heard that Scotland was "*rubbing its hands*" at the demise of England's regional development agencies (RDAs). More government money is being invested in developing ports and infrastructure for renewable energy in Scotland (£70 million) than in the whole of England and Wales (£60 million) – even though South West England alone has an economy the same size as Scotland's. (30)

The South West Regional Development Agency (RDA) has developed a Wave Hub as the cornerstone of a strategy to develop a world class marine energy industry in South West England. Wave Hub is funded with £12.5 million from the South West RDA, £20 million from the European Regional Development Fund Convergence Programme and £9.5 million from the UK government. It basically consists of a giant 'socket' on the seabed which is connected to the national grid on shore by an underwater cable, so that wave energy devices can be 'plugged' and tested on a scale not seen anywhere before. The project has four berths available and a capacity of 20MW, equivalent to the electricity needs of more than 7,000 homes. Wave Hub's first customer is Ocean Power Technologies, deploying its Power Buoy device. On 8th July the Wave Hub was named Sustainable Project of the Year in the Business Green Leaders Awards 2011. (31)

Wave and tidal energy could provide up to 20% of the UK's electricity consumption with a practically extractable resource of 36GW. (32)

7. **East Anglia**

The Great Gabbard offshore windfarm is already being developed off the coast of Suffolk, (33) and the companies chosen to develop the East Anglia Array which is to be built 15 miles off the

Norfolk and Suffolk coast were announced by the Crown Estate in January 2010. (34) This investment, worth £24 billion, will create over 1,000 jobs with another 4,000 jobs involved in the supply chain. (35)

1st East – the waterfront regeneration company for Great Yarmouth (in Norfolk) and Lowestoft in Suffolk is promoting East Anglia's ports as the hub for the offshore wind industry in Europe. (36)

If the UK Government's electricity market reforms turn out to damage the prospects for offshore wind, by overemphasising support for nuclear, confidence could be damaged and these new industries could go elsewhere.

8. **North-East England**

Offshore wind is opening up a "new industrial chapter" for the North-East as companies start positioning themselves to provide a hub of expertise in offshore wind. Companies include: TAG Energy Solutions which produces wind turbine foundations; Hartlepool firm JDR Cables which is a world leader in producing turbine cables; the Tekmar Group, based in Newton Aycliffe, which produces cable protection devices; Clipper Windpower which is developing the world's largest turbine blade at a £25m plant near Newcastle, and Europe's leading wind turbine testing factory which is based at the New and Renewable Energy Centre, in Northumberland. (37) Port operator PD Ports is aiming to turn Hartlepool into a centre for offshore wind industries. (38)

Meanwhile, Siemens has recently announced that Hull is its preferred location for the country's first offshore wind turbine manufacturing factory. This means Hull could lead the way in the UK's industrialisation of renewable energy. (39)

9. **Other low carbon energy**

There were few mentions in the Government's Overarching National Policy Statement for Energy of contributions from other types of renewable or low carbon energy, such as onshore wind or microgeneration.

Of the 26GW of new capacity required which has been left for industry to determine, 8GW of new non-renewable capacity is already under construction, so that leaves a further 18GW of new capacity for which the type of generating plant is still to be determined. (40) The Government says it wants new nuclear power to contribute as much as possible to meeting this need for new non-renewable capacity. (41) But the Appraisal of Sustainability (AoS) for the National Policy Statement on Nuclear Power (42) only looks at a scenario in which new reactors are replaced by gas-fired generating stations. It doesn't evaluate, for example, an alternative strategy based on a high level of Government support for decentralised energy and combined heat and power.

The UK's current centralised system of electricity generation is highly inefficient with two thirds of the energy generated wasted before it even reaches the consumer. It relies on a small number of huge power stations which generate electricity miles away from the point of consumption, and which throw away two thirds of the energy in the form of hot water. This is hugely inefficient. A more decentralised system could use proven technologies, such as Combined Heat and Power (CHP), to produce energy far more efficiently by capturing the heat usually lost in electricity generation, and piping it to nearby industry or houses via a district heating scheme. CHP schemes can achieve an efficiency of around 85% for the combined production of electricity and heat.

A study by Pöyry Energy Consulting, for example, looked at the potential for industrial Combined Heat and Power and found that across the UK it could generate as much electricity as 10 nuclear power stations (16GW of new electricity generating capacity) and halve gas

imports using a combination of new and extended CHP plants. (43) Six of the nine industrial sites looked at by Poyry are in England.¹

In Germany district heating produced by renewable or low-carbon energy sources will eventually play a significant role. In the interim period new highly efficient and flexible gas power plants will probably be built as back-up power. (44)

In England CHP District Heating Schemes include projects run in partnership with Southampton City Council (which is supplemented by Geothermal Energy) (45); Birmingham City Council (46); Sheffield City Council (47) and Leicester City Council (48).

10. Local Economic Development

There is a huge potential for local economic development through the use of sustainable energy. Energy efficiency installation, advice, local small-scale generation and renewables are all labour intensive businesses rooted in the areas they serve. (49)

Although the Government says it would like to see decentralised and community energy systems such as micro-generation making a contribution to targets, it says it does not believe decentralised and community energy systems are likely to lead to significant replacement of large scale infrastructure. (50) Others disagree. A groundswell of actions by individual communities led by local authorities can inspire others to follow suit and achieve much higher penetration levels for small-scale renewables and micro-generation than currently envisaged.

The Chief Executive of National Grid, Steve Holliday, says that 15% of the country's electricity production could come from so called "embedded generation" in homes and offices by 2020 as micro-generation becomes increasingly viable after the £9 billion rollout of "smart meters" for every home in Britain. (51) Currently the Government is expecting only 2% of electricity to be supplied by small-scale renewable by 2020, (52) and it has excluded solar energy from its Renewable Energy Roadmap. (53) Yet research by the Energy Saving Trust shows that micro-generation could provide around 30-40% by 2050, (54) so we ought to be expecting a much larger contribution in 2020. In Europe the European Photovoltaic Industry Association expects solar energy to be providing 12% of all electricity by 2020. (55) The difference between this 12% and the Government's 2% would be enough to obviate the need to build new reactors.

While the costs of new nuclear reactors are rising, those of solar photovoltaics are falling rapidly. (56) One report says costs are falling so fast that by 2013 solar panels will be half of what they cost in 2009. (57) The technology is advancing too. Soon it could be possible to print solar panels onto paper (58) or even paint them onto walls. (59) This technology could be appearing on computer keyboards to power computers when on stand-by by Christmas this year. Ernst & Young's recent report on the Outlook for the UK solar PV industry points to costs for solar electricity falling so that by 2020 the technology will be economic in the UK without any subsidy. (60)

It will happen well before that in Germany as a direct consequence of the far-sighted decisions the German Government took a number of years ago. Germany plans to generate 50% of its day-time electricity from solar by 2020 – with installed capacity of 52 GW. Despite the fact that solar PV has the potential to meet more than 30% of the UK's day-time electricity by 2040, our target for 2020 is just 2.7 GW – not much more than the 2 GW that Germany installed in one month in June 2010. (61)

It's still not too late for England and the wider UK. There is a growing realisation that solar energy could be the next big thing after the internet. (62) Lots of local authorities and social housing providers are beginning to make the connections between energy-efficiency and micro-generation, tackling fuel poverty and reducing carbon emissions. With feed-in tariffs of up to 43.3p/kWh (plus 3.1p/kWh for each unit of electricity exported to the grid), it is hardly

¹ Seal Sands; Wilton; Ellesmere Port; Immingham; Coryton and Fawley
A200 (NB86) – NFLA Briefing No 86 England & renewables

surprising that each week brings news of new projects and plans by local authorities in England to generate their own electricity. (63)

11. **Some examples of English Local Authorities leading the local energy revolution**

Here are just a few examples of the growing local energy revolution led by English Councils:

- a) Manchester City Council has teamed up with Northwards Housing and contractors Wates Living Space to install solar panels for elderly residents in north Manchester on the side of their housing block. Tenants moving into the 91 flats in the newly refurbished block will use renewable power generated by the panels for their lighting and electrical use in the block's communal areas. The block will be connected to an existing district heating scheme which already serves the neighbouring tower blocks. The solar panels, which are visible on the outside of the block, will contribute towards Manchester reaching its target of a 41% reduction in carbon emissions by 2020, as set out in the city's climate change action plan, entitled 'Manchester: A Certain Future'. (64)
- b) Birmingham City Council has announced that the City has exceeded its target for cuts in carbon emissions for the year 2010/11. The figures submitted by 33 organisations from across the public, private and voluntary sectors, and verified by the Energy Savings Trust, show that Birmingham is firmly on schedule to meet its commitment to achieve a 60% reduction in emissions by 2026, when compared to 1990 benchmark levels. (65) Examples of projects that have helped contribute to Birmingham's success include: installation of energy efficient lighting by Cadbury UK, the National Exhibition Centre Group, Birmingham Children's Hospital, and the offices and park and ride sites of Centro, the public transport operator. Birmingham's Highways Service has commenced a large Street Lighting scheme which includes switching from sodium to LED lamps. Bournville Village Trust has installed solar thermal panels at 67 of their properties, and the Children's Hospital has installed a Combined Heat and Power Plant. (66)
- c) Birmingham City Council also has plans to install solar panels on up to 10,000 council-owned homes – jointly funded by the Council energy suppliers and commercial banks. This follows two successful pilot schemes conducted in the City. Under the scheme consumers will pay a levy on their energy bills to repay the loans but should still be paying lower bills after the retrofit. A second phase will involve using the proceeds from the first 10,000 retrofits for a refinancing of the scheme that will deliver funding of £2bn, enough to refurbish 200,000 homes. (67)
- d) Leeds City Council have teamed up with contractors to facilitate 10,000 major energy efficiency measures and referred 3,000 clients for free assistance. This has reduced carbon emissions by 1 tonne per dwelling supported. A whole raft of similar measures can be found in its detailed 'Climate Change Action Plan'. (68)
- e) Oxford City Council has installed cavity wall and loft insulation to nearly all of its 8,000 Council properties, and will complete all of them shortly. It has also installed a 22kWp solar Photovoltaic roof tile installation at one of its sheltered housing blocks estimated to generate 17,000kWh of electricity per year. Oxford City Council has just become the first UK local authority to be awarded the new BSI Kitemark for Energy Reduction Verification (ERV). This independent verification scheme builds on an organisation's good energy and carbon management practices and independently verifies the output of that good practice. (69)
- f) Rotherham Metropolitan Borough Council is developing the 'Dearne Valley Eco-Vision' as a pioneer project in the Sheffield City Region. This is an exciting and ambitious multi-partner project which aims to enable the economic, social and environmental development of a low carbon community in the Dearne Valley. It will firstly provide foundation education, then develop community infra-structure and finally improve the natural environment of the Dearne Valley and marshal its natural assets for economic and environmental benefit. (70)
- g) Torbay Council is hoping to generate money by harvesting solar energy. The plan is to install solar panels on public buildings throughout the town to help generate more than £4 million over

the next 25 years. The project would see the authority invest up to £1.8 million to install photovoltaic and solar panels on all public buildings and schools. (71)

- h) The biggest roof-mounted, solar power scheme in the country is being installed as part of Peterborough City Council's wider scheme which will see panels installed on the roofs of both the Town Hall and the Regional Pool. The full proposed scheme of 1.5 megawatts will cost about £5.7 million to set up and has been funded by council borrowing, which will be paid back over 25 years. Energy generated from the panels will be sold to power local homes and businesses, and this is expected to result in about £300,000 profit a year after the set-up cost has been repaid. This will allow the council to reduce its own energy costs and provides the opportunity to set up a limited company to trade energy to domestic and business users. (72)
- i) Hampshire County Council is considering installing Solar Photovoltaic panels on up to 31,000m² of the County Council's roof space (non-school buildings). This is the equivalent to four UK Premiership football pitches. (73)
- j) Eastbourne Borough Council will install solar panels across the town. The council has allocated up to £13 million in capital funding for the installation of solar panels on between 700 to 1,500 council owned houses and non-domestic buildings, generating free electricity for those tenants living in them. The council will provide the investment to fund solar installations and retains all of the feed-in tariff income that follows. (74)
- k) Dozens of public buildings in Brighton and Hove will have solar panels on the roof under plans approved by the Council. The £2.6 million scheme aims to repay the borrowing costs by earning money from the national grid feed-in tariff. In a good year, sunny weather could reap revenues of up to £160,000 for the council. Even a bad year could leave the council £40,000 better off. A school, a swimming pool and a car park are among the sites on a first list of 40 properties to be solarised. Council houses and blocks of flats could also be used if the scheme is extended. (76)
- l) Shropshire County Council plans to invest £5.2 million installing 400 solar panels on council buildings in Shropshire in an effort to raise £700,000 a year. (77)
- m) Staffordshire County Council is planning to power itself with green energy, including greater use of solar panels, solar thermal energy, micro-hydro, and biomass-based power generation and heating. The Council has established Staffordshire Wood Fuels to supply wood chippings from sustainable forestry for use as a biomass energy source. (78)
- n) Over the next 25 years, Calderdale Council could save £3.5 million by generating solar power. To start the ball rolling, the cabinet has agreed to look at installing photovoltaic panels on as many as 100 public buildings. (79)
- o) Stoke-on-Trent City Council is having almost 200 solar panels installed on the roof of the city's civic offices. The installation, which is costing £134,500, is being funded through the council's existing climate change budget. The panels have an anticipated lifespan of 25 years, and could pay for themselves in around 14 years at current electricity prices. (80)
- p) Hull City Council is one of 14 English Councils who have developed 'Warm Zone' partnerships. In the last three years, 35,000 homes have been visited and many of these have benefited from free or discounted central heating systems, cavity wall and loft insulation, low energy light bulbs and fridge freezers. (81)

12. Conclusions

- The UK Government has twin objectives of reducing greenhouse gas emissions by 80% by 2050 and eliminating fuel poverty by 2016. But its proposed electricity market reforms focus almost exclusively on facilitating the construction of new low carbon electricity supply, which is likely to worsen fuel poverty, rather than demand management schemes which place a greater emphasis on capital investment in the energy efficiency of our housing

stock. Such measures would tackle fuel poverty and reduce greenhouse gas emissions at the same time.

- The UK Government says there is a need for 59GW of new generating capacity by 2025, of which 33GW needs to be renewable. This leaves industry to decide what type of generating capacity should supply the remaining 26GW, but the Government says as much as possible of this should be nuclear.
- If instead of planning for a doubling or tripling of electricity demand by 2050 the Government was planning for a reduction of 25%, as is the case in Germany, this could remove the need for new nuclear reactors.
- English Regions will need an industrial strategy to make sure they make the most out of the boom in the offshore wind industry.
- Wave and tidal energy could provide up to 20% of the UK's electricity consumption with a practically extractable resource of 36GW, with over 2GW by 2020.
- Industrial Combined Heat and Power has the potential to generate as much electricity as 10 nuclear power stations (16GW of new electricity generating capacity) and halve gas imports using a combination of new and extended CHP plants.
- According to National Grid, 15% of the UK's electricity production could come from micro-generation" in homes and offices by 2020.
- The European Photovoltaic Industry Association expects solar energy to be providing 12% of Europe's electricity by 2020. The difference between this 12% and the 2% the Government expects to be provided by all micro-generation would be enough to obviate the need to build new nuclear reactors.
- The UK's target for solar PV in 2020 is only a little more than was installed in Germany during the month of June 2010.
- Some English local authorities are leading the way in energy efficiency and micro-generation programmes. From fuel poverty busting solar panel installations on council housing to energy efficient street lighting schemes, to wood fuel biomass boiler installations in schools, councils are demonstrating how sustainable energy schemes can be used to tackle climate change and fuel poverty at the same time as raising much needed revenue.

13. **Actions by the NFLA Secretariat**

- This briefing will be sent to all NFLA members in England (and to non-member English authorities to consider membership) to understand the ways they can be involved in leading a local energy revolution. The next NFLA English Forum seminar will highlight some of the above examples in more detail.
- This briefing will be sent to the UK Government to encourage it to consider refocusing its energy strategy.
- English local authorities will be encouraged to continue to work with local partners and the private sector to develop innovative industrial policies to encourage job-creation in the renewable sector, energy efficiency schemes and local micro-generation projects.
- English local authorities will be encouraged to contact the UK Government to encourage the financing of such schemes through City Regions and Local Enterprise Zones and Partnerships.

- For free weekly news updates about the "local energy revolution" around the UK the NFLA also encourages Councils to consult the website www.microgenscotland.org.uk/news.php

14. References

- (1) Garrard Hassan Consultants Ltd – The Power of Scotland Secured. Prepared for FOE Scotland, WWF Scotland and RSPB Scotland. An excellent summary of this report has been developed by Friends of the Earth Scotland, June 2011 <http://www.foe-scotland.org.uk/power-explained>
- (2) Dissent Magazine 30th July 2011 <http://www.dissentmagazine.org/online.php?id=510>
- (3) Guardian 14th July 2011 <http://www.guardian.co.uk/money/2011/jul/14/households-fuel-poverty-energy-prices?INTCMP=SRCH>
- (4) Consumer Focus Briefing on the Energy Bill and Fuel Poverty, May 2011 <http://www.consumerfocus.org.uk/files/2011/06/The-Energy-Bill-and-Fuel-Poverty.pdf>
- (5) Fourth Carbon Budget Report (2023–2027), the Committee on Climate Change, December 2010, <http://www.theccc.org.uk/reports/fourth-carbon-budget>. See executive summary in particular.
- (6) Sunday Times 1st May 2011 http://www.thesundaytimes.co.uk/sto/business/energy_and_environment/article615632.ece
- (7) Business Green 17th December 2010 <http://www.businessgreen.com/bg/james-blog/1933425/energy-bills-rise-gbp500-low-carbon-plans>
- (8) Sunday Times 1st May 2011 http://www.thesundaytimes.co.uk/sto/business/energy_and_environment/article615632.ece
- (9) Daily Mail 18th December 2010 <http://www.dailymail.co.uk/money/article-1339771/Fuel-poverty-hit-5-5m-homes-Coalitions-green-energy-bill.html>
- (10) Boardman, B. *Fixing Fuel Poverty: Challenges and Solutions*, Earthscan 2010.
- (11) Memorandum submitted by WWF-UK. House of Commons Energy and Climate Change Committee, *Electricity Market Reform*, Volume 1, 16th May 2011 Ev 162 <http://www.publications.parliament.uk/pa/cm201012/cmselect/cmenergy/742/742.pdf>
- (12) Boardman, B. Home Truths: A Low Carbon Strategy to Reduce UK Housing Emissions by 80% by 2050, FoE (EWNI) and Co-operative Bank, November 2007. http://www.foe.co.uk/resource/reports/home_truths.pdf
- (13) Fuel Poverty: Government Response to the Committee's 5th Report, Energy and Climate Change Committee, 19th October 2010 <http://www.publications.parliament.uk/pa/cm201011/cmselect/cmenergy/541/541.pdf>
- (14) Holmes, I. *Financing the Green Deal*, E3G May 2011 http://www.e3g.org/images/uploads/E3G_Financing_the_Green_Deal_May_2011.pdf
- (15) *Public response to Green Deal will be underwhelming*, Low Carbon Economy, 6th May 2011 http://www.lowcarboneyconomy.com/profile/the_low_carbon_economy ltd/ low_carbon_blog/public_response_to_green_deal_will_be_underwhelming/14169
- (16) Consumer Focus Briefing on the Energy Bill and Fuel Poverty, May 2011 <http://www.consumerfocus.org.uk/files/2011/06/The-Energy-Bill-and-Fuel-Poverty.pdf>
- (17) Jowit, J. *Green deal is not a good deal for all homeowners*, Guardian 24th November 2010 <http://www.guardian.co.uk/environment/cif-green/2010/nov/24/green-deal-is-not-a-good-deal?INTCMP=SRCH> and Hulme, J and Summers, C. *An investigation of the effect of rising block tariffs on fuel poverty*, BRE October 2009 http://downloads.theccc.org.uk/Rising%20block%20tariffs%20and%20fuel%20poverty_051009FINAL.pdf
- (18) Electricity Market Reform White Paper, DECC 12th July 2011 http://www.decc.gov.uk/en/content/cms/legislation/white_papers/emr_wp_2011/emr_wp_2011.aspx
- (19) Memorandum submitted by WWF-UK. House of Commons Energy and Climate Change Committee, *Electricity Market Reform*, Volume 1, 16th May 2011 Ev 162 <http://www.publications.parliament.uk/pa/cm201012/cmselect/cmenergy/742/742.pdf>
- (20) (Finalised) Overarching National Policy Statement for Energy, DECC July 2011. para 3.3.14 <http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/consents-planning/nps2011/1938-overarching-nps-for-energy-en1.pdf>
- (21) Warren, A. Letter to the Guardian 29th March 2011 <http://www.guardian.co.uk/theguardian/2011/mar/29/the-cost-of-nuclear-power>
- (22) The Warren Report, February 2011. [http://www.ukace.org/publications/ACE%20Warren%20Report%20\(2011-02\)%20-%20Thirty%20years%20on%20and%20still%20waiting%20for%20an%20answer.pdf](http://www.ukace.org/publications/ACE%20Warren%20Report%20(2011-02)%20-%20Thirty%20years%20on%20and%20still%20waiting%20for%20an%20answer.pdf)
- (23) Guardian 29th July 2011 <http://www.guardian.co.uk/environment/2011/jul/29/nuclearpower-energy>
- (24) Mitchell, C. *UK must shake off the dominance of energy giants*, Guardian 13th December 2010 <http://www.guardian.co.uk/environment/cif-green/2010/dec/13/uk-energy-efficiency-green-deal>
- (25) Mitchell, C. *Nuclear power is the reason for the news energy regulations*, Guardian 11th March 2011 <http://www.guardian.co.uk/environment/2011/mar/11/nuclear-power-reason-energy-regulations>

- (26) (Finalised) Overarching National Policy Statement for Energy, DECC July 2011. Para 3.3.22 <http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/consents-planning/nps2011/1938-overarching-nps-for-energy-en1.pdf>
- (27) Roadmap 2050: A Practical Guide to a Prosperous, Low-Carbon Europe, European Climate Foundation, April 2010, <http://www.roadmap2050.eu/downloads> . See Executive Summary to Volume 1.
- (28) The Offshore Valuation Report: A valuation of the UK's offshore renewable energy resource, 2010, http://www.offshorevaluation.org/downloads/offshore_valuation_exec.pdf
- (29) Actions for 33GW: Actions to facilitate the Delivery of Government's Offshore Wind Ambition of 33GW, BWEA, October 2008. http://www.bwea.com/pdf/publications/33GW_08.pdf
- (30) *South West risks losing out to Scotland in renewable revolution*, Regen SW 25th November 2010 <http://www.regensw.co.uk/news/2010/11/25/south-west-risks-losing-out-to-scotland-in-renewables-revolution-industry-warns>
- (31) Wave Hub Press Release 8th July 2011 http://www.wavehub.co.uk/news/press_releases/national_sustainability_award.aspx
- (32) Wave and Tidal Energy in the UK: State of the industry report, Renewable UK, March 2011 http://www.bwea.com/pdf/marine/Wave_Tidal_energy_UK.pdf
- (33) SSE website November 2010 <http://www.scottish-southern.co.uk/SSEInternet/index.aspx?rightColHeader=30&id=1583> 6
- (34) Crown Estate announces Round 3 offshore wind development partners, Crown Estate Press Release 8th January 2010 <http://www.thecrownestate.co.uk/newscontent/92-r3-developers.htm>
- (35) Suffolk Works website accessed January 2011 http://www.suffolkworks.co.uk/localarea.asp?slevel=0z382z388&parent_id=388
- (36) Location, location, location: East Anglia's ports at the hub of wind energy in Europe, 1st East 21st July 2010 http://www.1steast.co.uk/files/files/216-1st_East_Regional_Ports_brochure.pdf
- (37) Northern Echo 11th July 2011 http://www.thenorthernecho.co.uk/business/9130928.Wind_power_leading_to_new_industrial_chapter/
- (38) Northern Echo 1st August 2011 http://www.thenorthernecho.co.uk/business/9168920.Port_operator_plans_wind_turbine_hub_at_Hartlepool/
- (39) Hull Daily Mail 21st July 2011 <http://www.thisishullandeastriding.co.uk/story-12978543-detail/story.html>
- (40) (Finalised) Overarching National Policy Statement for Energy, DECC July 2011. Para 3.3.22 <http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/consents-planning/nps2011/1938-overarching-nps-for-energy-en1.pdf>
- (41) The Government Response to the Consultation on the draft National Policy Statements for Energy Infrastructure, DECC, October 2010. Para 7.44 <https://www.energynpsconsultation.decc.gov.uk/docs/GovernmentResponseToConsultation-October2010.pdf>
- (42) Appraisal of Sustainability of the revised draft Nuclear National Policy Statement: Main Report, DECC, October 2010 <https://www.energynpsconsultation.decc.gov.uk/docs/Appraisal%20of%20Sustainability%20for%20EN-6%20%28Nuclear%20NPS%29%20-%20Main%20Report%20-%20October%202010.pdf>
- (43) Poyry, Securing Power Summary, Greenpeace, June 2008 http://www.greenpeace.org.uk/files/pdfs/climate/industrialCHP_summary.pdf
- (44) Guardian 29th July 2011 <http://www.guardian.co.uk/environment/2011/jul/29/nuclearpower-energy>
- (45) Southampton District Energy Scheme, 2011. http://www.southampton.gov.uk/Images/District%20Energy%20Scheme%202011_tcm46-299457.pdf
- (46) Birmingham City Council CHP Programme, <http://www.birmingham.gov.uk/cs/Satellite?c=Page&childpagename=SystemAdmin%2FCFPageLayout&cid=1223092624459&packedargs=website%3D4&pagename=BCC%2FCommon%2FWrapper%2FCFWrapper&rendermode=|>
- (47) See <http://www.idea.gov.uk/idk/core/page.do?pagelId=24989909>
- (48) University of Leicester Press Release 29th June 2011 <http://www2.le.ac.uk/offices/press/press-releases/2011/june/district-energy-plans-take-huge-step-forward-in-leicester>
- (49) Leading the Way: How Local Authorities can meet the challenge of climate change, LGA and EST, 2005 <http://www.lga.gov.uk/lga/aio/22002>
- (50) EN1 para 3.3.29 <http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/consents-planning/nps2011/1938-overarching-nps-for-energy-en1.pdf>
- (51) The Times 4th December 2009. <http://www.thetimes.co.uk/tto/technology/article2192131.ece>
- (52) UK Low Carbon Transition Plan, DECC, July 2009. http://www.decc.gov.uk/assets/decc/white%20papers/uk%20low%20carbon%20transition%20plan%20wp09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf

- (53) Click Green 18th July 2011 <http://www.clickgreen.org.uk/opinion/opinion/122349-green-energy-pioneer-says-solar-pv-is-key-technology.html>
- (54) Potential for Microgeneration: Study and Analysis, EST, eConnect, Element Energy, November 2005. <http://www.berr.gov.uk/files/file27558.pdf>
- (55) Business Green 22nd July 2009 <http://www.businessgreen.com/bg/news/1803588/frustrated-solarcentury-sun-shining-european-markets>
- (56) Argus Media 19th November 2010 <http://www.argusmedia.com/pages/NewsBody.aspx?id=730286&menu=yes>
- (57) Guardian 20th June 2011 <http://www.guardian.co.uk/environment/2011/jun/20/solar-panel-price-drop>
- (58) New Scientist 12th July 2011 <http://www.newscientist.com/blogs/onepercent/2011/07/green-machine-printing-solar-c.html?DCMP=OTC-rss&nsref=online-news>
- (59) Business Green 13th July 2011 http://www.businessgreen.com/bg/news/2093469/sainsbury-s-ikea-eye-dye-sensitised-solar-cells?WT.rss_f=&WT.rss_a=Sainsbury%E2%80%99s%2C+Ikea+and+others+eye+up+dye-sensitised+cells
- (60) Ernst & Young, UK Solar PV Outlook. June 2011 <http://www.oursolarfuture.org.uk/wp-content/uploads/The-UK-50kW-to-5-MW-solar-PV-market-190611-Final.pdf>
- (61) See <http://www.jonathonporritt.com/blog/why-george-monbiot-completely-wrong-nuclear-power>
- (62) See <http://sjvceonews.blogspot.com/2011/06/could-renewable-energy-be-next-big.html> and <http://www.seao2.com/solarsphere/ceo.htm>
- (63) Feed-in Tariff Scheme, Energy Saving Trust website accessed 19th July 2011 <http://www.energysavingtrust.org.uk/Generate-your-own-energy/Sell-your-own-energy/Feed-in-Tariff-scheme#tarifflevels>
- (64) Manchester City Council Press Release 26th July 2011 http://www.manchester.gov.uk/site/scripts/news_article.php?newsID=5590
- (65) Birmingham City Council Press Release 11th July 2011 <http://birminghamnewsroom.com/2011/07/carbon-reduction-targets-are-met/>
- (66) Low Carbon Economy 12th July 2011 http://www.lowcarboneyconomy.com/profile/the_low_carbon_economy ltd/ low_carbon_blog/birmingham_exceeds_co2_reduction_target/14812
- (67) Guardian 3rd October 2010 <http://www.guardian.co.uk/environment/2010/oct/03/birmingham-solar-panel-council-proposal> See also Birmingham City Council Press Release 21st January 2010 <http://birminghamnewsroom.com/2010/01/birmingham-to-introduce-green-housing-revolution/>
- (68) Leeds City Council Climate Change Action Plan, 2011 http://www.leeds.gov.uk/Environment_and_planning/Sustainability/Climate_change_strategy.aspx
- (69) Oxford City Council, Climate Change and Oxford – what the Council is doing, July 2011 http://www.oxford.gov.uk/PageRender/decER/Climate_change_in_Oxford_occw.htm
- (70) Rotherham Metropolitan Borough Council, Dearne Valley Eco-Vision, 2011 http://www.rotherham.gov.uk/info/100006/environment_and_planning/1871/dearne_valley_eco-vision
- (71) Herald Express 14th July 2011 <http://www.thisisdevon.co.uk/story-12927959-detail/story.html>
- (72) Peterborough Today 17th July 2011 http://www.peterboroughtoday.co.uk/community/community_news_2_17154/work_starts_on_country_s_biggest_solar_panel_scheme_1_2874434
- (73) Hampshire County Council Press Release 22nd June 2011 <http://www3.hants.gov.uk/mediareleases.htm?newsid=477700>
- (74) Eastbourne Herald 25th July 2011 http://www.eastbourneherald.co.uk/news/local-news/green_light_for_solar_power_plan_1_2890505
- (75) Peterborough Evening Telegraph 17th July 2011 http://www.peterboroughtoday.co.uk/community/community-news/work_starts_on_country_s_biggest_solar_panel_scheme_1_2874434
- (76) Brighton and Hove News 13th June 2011 <http://www.brightonandhovenews.org/2011/06/brighton-and-hove-councillors-to-spend-2-6m-on-solar-power-scheme/>
- (77) BBC 9th May 2011 <http://www.bbc.co.uk/news/uk-england-shropshire-13339425>
- (78) Burton Mail 26th April 2011 <http://www.burtonmail.co.uk/News/Council-plans-to-power-itself-with-green-energy-25042011.htm>
- (79) Halifax Courier 17th March 2011 http://www.halifaxcourier.co.uk/news/local/sunlight_cuts_energy_costs_1_3187463
- (80) The Business Desk 16th March 2011 http://www.thebusinessdesk.com/westmidlands/news/141184-kier-helps-stoke-go-green-with-new-solar-energy-scheme.html?utm_source=RSS&utm_medium=news%2Bfeed&utm_term=Kier+helps+Stoke+go+green+with+new+solar+energy+scheme
- (81) Warm Zones Ltd, May 2011 <http://www.warmzones.co.uk/hull.html>