

Draft RENEWABLE ENERGY STRATEGY – PROPOSED FOR CONSULTATION

Background

1. Leicestershire Together, as the Local Strategic Partnership for Leicestershire, has identified a number of key priority outcomes for Leicestershire. These include:

“Our contribution to climate change is reduced and there is high resilience to climate change.” One of the means by which this outcome will be achieved is:

“An Increase in renewable energy generation and use of alternative fuel sources, including the encouragement of community owned renewable energy schemes.”

2. In addressing Climate Change issues it is clear we must both address mitigation issues – trying to reduce the amount of greenhouse gases that we emit to the atmosphere; and also adaptation issues – how we adapt the way we live to the climate change that is projected from the greenhouse gases already in the atmosphere, even if we reduce emissions in the future.
3. Leicestershire Together, in strategic terms, is addressing mitigation issues through two principal strands of work:
 - a. A Carbon Reduction Strategy – setting out how Leicestershire should set about meeting its targets in reducing the use of energy, and using it more efficiently. This strategy is under preparation.
 - b. A Renewable Energy Strategy (this document) – setting out how the energy we do use can be generated with no (or minimum levels) of carbon.
 - c. Other strands include the LTP which has a target on reducing carbon from transport in the County and the draft LLEP Economic Growth Plan 2012 – 2020 which seeks to facilitate new sector development in Environmental Technologies.
4. Adaptation issues are being addressed through the Leicestershire Climate Change Resilience Plan. This is to be considered by the Leicestershire Together Board in June 2012.
5. There are 5 component Chapters that will make up the Renewable Energy Strategy:
 - a. Chapter 1 The Overall Strategy overview setting out the ambition for renewable energy deployment appropriate for Leicestershire by 2020 and to what extent this is likely to be met by different technologies;
 - b. Chapter 2 Community – the extent to which communities should be supported in delivery of renewable energy projects;

- c. Chapter 3 Employment & Skills – considering the opportunities for employment based on renewable energy developments and the skills needed within the workforce to meet these opportunities;
- d. Chapter 4 Planning – setting out overall approaches to planning issues for renewable energy generation; and
- e. Chapter 5 Public Estates – the ambition by public sector partners to develop renewable energy generation projects¹.

Chapter 1 Overall strategy

Background to Renewable Energy

6. Climate change is one of the greatest threats to both UK and global security and prosperity. The Green House Gas effect (the ability of air to retain more heat when CO₂ levels are increased) has been understood by science since the eighteenth century. Evidence of increasing levels of CO₂ in the atmosphere (up from pre-industrial levels of 280ppm to nearly 400ppm) is unambiguous. Whilst the level of change this will induce in our climate is uncertain, there is no doubt that some change is inevitable. It is clear that the more we do to reduce our emissions the better. As part of its commitment to avoid the risk of dangerous climate change, the government has signed-up to international treaties, European Directives and enacted legislation.
7. The Climate Change Act became law in 2008, a key aim of which is to improve carbon management and help the transition towards a low carbon economy in the UK. The Act requires Government to reduce greenhouse gas emissions by at least 34% by 2020 and 80% by 2050 as compared to 1990 levels (HM Government 2011). The key approach to meeting this target is through improving the efficiency with which we use energy (Leicestershire Together will be producing a carbon reduction strategy setting out how these efficiency measures will work in Leicestershire). This is supplemented by producing less carbon intensive energy from renewable sources, and this document focuses on this latter element.
8. The EU Renewable Energy Directive imposes a legislative requirement on the UK to ensure 15% of **all** energy consumption comes from renewable sources by 2020. This target is equivalent to a seven-fold increase in UK renewable energy production from 2008 levels. The Lead Scenario in the Government's Renewable Energy Strategy aimed at achieving the overall 15% reduction is:

More than 30% of our electricity generated from renewables, up from 5.5% today. Much of this will be from wind power, on and offshore, but biomass, solar, hydro and wave and tidal will also play an important role.

¹ Please note that this work is being undertaken by consultants and will follow a different timetable to the rest of the document – views on this section are therefore not being sought at present

12% of our heat generated from renewables, up from very low levels today. This is expected to come from a range of sources including biomass, biogas, solar and heat pump sources in homes, businesses and communities across the UK.

10% of transport energy from renewables, up from the current level of 2.6% of road transport consumption. The Government will also act to support electric vehicles and pursue the case for further electrification of the rail network.

9. Such a scenario will only be possible with strong, co-ordinated efforts from a dynamic combination of central and local Government, the devolved administrations, from businesses and individuals.

Leicester and Leicestershire's energy profile

10. In 2009, Leicestershire's domestic and commercial/industrial users (excluding Leicester City) used a total of 9,093 GWh for both electricity and gas, a reduction of 1,789 GWh since 2005.

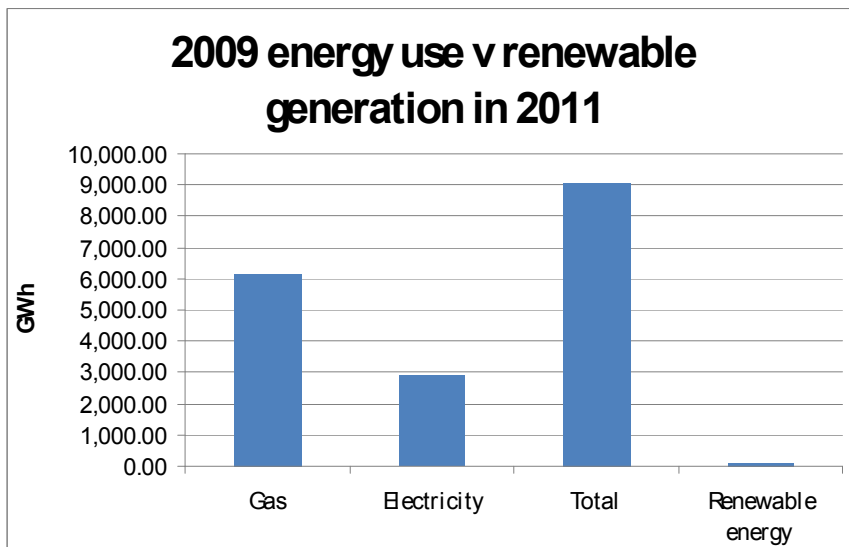


Figure 1: 2009 Gas and Electricity use in Leicestershire in GWh with 2011 renewable energy generation

Current Renewable Energy Generation

11. For the purposes of this document, technologies counted as renewable are the same used by Government in its Carbon Reduction Strategy – with the exception of those excluded by geography (Marine, Tidal and Offshore wind) and Nuclear, as there is no current prospect of such a development in Leicestershire. Technologies included are onshore wind, hydro power, biomass, biogas (including anaerobic digestion) solar photovoltaics and solar water heating, heat pumps, sewage gas and landfill gas. In some

instances combined heat and power (CHP) has been considered as an option.

12. There are two main financial incentive schemes for generating renewable electricity; the Feed-in Tariff (FiTs) (small scale); and, Renewable Energy Obligation (larger scale). Installations registered and certified under these schemes receive payments for the energy that they generate. The registers for these schemes give a strong indication of the amount of renewable energy being generated in the County. In addition to the above incentive schemes, the Renewable Heat Incentive (RHI) recently commenced however no figures are available on this yet.
13. Data from small scale installations registered for FiTs show that at the 3rd November 2011, there were a total of 1158 domestic installations, 22 commercial installations and 7 community installations in Leicestershire. Of these the majority (1148, or 96.7%) were domestic solar panels. Leicestershire installations under the FiTs scheme have a total capacity of 3.7 MWe power and generated 3.8 GWh of energy.
14. Data from the Renewables Obligation register for the financial year 2009/10 is summarised below, with wind data estimated for the present year at the time of writing.

Table 1 Large scale renewable energy generation in Leics

Technology	MWh
Landfill Gas	64,074
Sewage Gas	21,910
On-shore wind	12,651
Anaerobic Digestion	6,106
Total:	104,741

15. Table 1 above shows that the majority of renewable energy generation in Leicestershire arises from landfill gas and a significant proportion from sewage gas. As there is national policy and a trend towards reducing dependence on landfill as a means of waste disposal, it is likely that generation from landfill gas will not be maintained at these levels. The challenge for Leicestershire will be to increase capacity through means other than landfill. Plan 1 shows the spatial distribution of schemes over 1 MWe in Leicestershire. Wind energy proposals are generally located towards the east. Landfill gas and sewage gas installations are dictated by the position of landfill sites and sewage treatment works, the latter of which is related to the main population centres. Two of the three anaerobic digesters are located on large-scale farms where there is a supply of feedstock and a market for the soil conditioner.
16. On the basis of the information available it is possible to conclude that Leicestershire homes and businesses consume 13,763 GWh of gas and electricity (1.25% of the UK amount). Around 108GWh (0.78%) of Leicester and Leicestershire's equivalent consumption is from renewable

energy. Information from consented schemes suggests that a further 144GWh of capacity has planning permission, but may not yet have been implemented. If all these schemes are added to existing generation, it results in a maximum capacity of 1.8% within Leicester and Leicestershire.

Potential Capacity

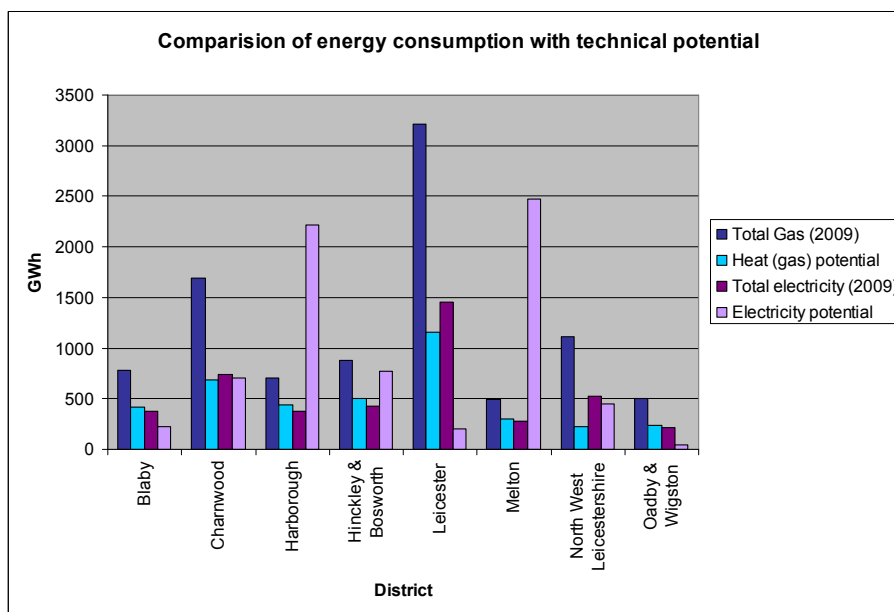
17. In March 2011, Land Use Consultants published a study commissioned by the East Midlands Councils called *Low Carbon Opportunities and Heat Mapping for Local Planning Authority Areas across the East Midlands: Final Report* (Land Use Consultants, 2011). The study sets out an evidence base of the technical potential for renewable and low carbon energy technologies within the East Midlands. The technical potential for Leicestershire Authorities by 2020 is shown below in table 2, together with a comparison with the 2009 consumption statistics for gas and electricity (figure 2)

Table 2: Technical renewable energy resource potential for Leicester and Leicestershire by 2020 in GWh

	BDC	CBC	HDC	HBBC	LCC	MBC	NWLDC	OWBC	Leics & Leicester
Electricity	226	711	2,213	767	206	2,472	445	41	7,081
Heat	419	682	441	502	1,154	296	226	232	3,952
Total	645	1393	2,654	1,269	1,360	2,768	671	273	11,033

Source: Land Use Consultants (2011)

Figure 2: Comparison of energy consumption to technical potential



Source: Land Use Consultants (2011) and DECC (2011).

Technical Capacity

18. The Land Use Consultants et al² study estimated the wind power capacity in Leicestershire at 3.9 GWe with a yearly generation capacity of 6100 GWh. They stated that this 'technical potential' (the total amount of potential that is theoretically available) of wind was the greatest renewable resource for most authorities. As shown in Figure 3, evidence shows that the only other noticeable technology with high technical potential is heat pumps, with lower levels indicated for most other technologies.

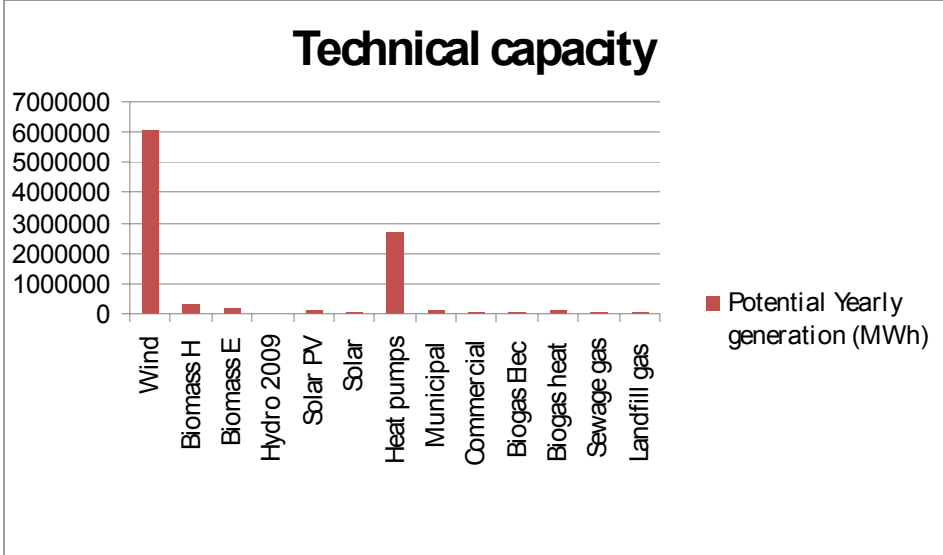


Figure 3: Relative technical potential of renewable/low carbon technologies in Leicestershire

19. The study shows that Leicestershire has a theoretical technical capacity to generate about 80% of its current energy requirements (excluding transport from the calculation) from renewable sources. It is highly unlikely that this full capacity would be realised because of market, financial, regulatory, land and environmental constraints. However, the study does provide useful information on possible energy solutions, and provides an evidence base for policy makers to develop when preparing local policies. It can be accessed at: <http://www.emcouncils.gov.uk/write/Emids-low-carbon-energy-opportunities-Final-Report-07-2011-update.pdf>.

Discussion of Key Issues

20. The study concludes that commercial scale wind offers the greatest technical resource potential for all the local authorities with the exception of Oadby and Wigston. The greatest wind energy potential is found in the east of the County, within Harborough and Melton. There is considerable potential for small scale wind linked to community, government and tourism related buildings, particularly within rural authorities. Heat pumps, solar PV and solar thermal also have significant potential, particularly in

² Land Use Consultants, Centre for Sustainable Energy and SQW - Low Carbon Energy Opportunities and Heat Mapping for Local Planning Areas Across the East Midlands: Final Report (2011)

the more urban areas. As authorities with significant urban areas, Charnwood has potential for the use of energy from waste. Charnwood also has the second highest potential for the generation of energy from sewage gas within the East Midlands. Whilst there are a number of sites which have potential for hydropower within the county, the technical generation capacity of these schemes is limited.

21. The evidence of engagement by the Leicestershire public and businesses with renewable technologies is generally positive and the reaction to incentives to invest in particular technologies such as solar thermal, photovoltaic, heat pumps and Biofuels has been strong. However, as with other areas of the UK, the reaction to onshore wind generation has been very mixed. Whilst there are now some wind turbines in operation in Leicestershire, and others in the pipeline, all have gained planning permission on appeal. The overall failure rate is high. Given the lead-in time on such developments, it is likely therefore, that in the period to 2020 we cannot expect this position to change significantly and conclude that the only prudent planning course to take on the strategy is that Business as Usual will continue for onshore wind.

22. This does not mean however, that Leicestershire Together and Community leaders should be inactive on this subject. There is good evidence to show that communities do become more positive towards turbines after they are installed (as the reality rarely matches the perception of the scale of possible impacts). This is particularly the case where communities have a stake in the scheme, and is particularly marked where the community is the owner (or part owner) of the development. Whilst there is not a tradition of community ownership of such assets in this country (compare the 50% of community ownership of wind turbines in Germany with less than 1% in this country) where they do exist, they are positively regarded. There are therefore a number of issues for Leicestershire Together to address:

- a) To what extent it should seek to raise awareness in the general community regarding climate change and the imperative to change the way we currently regard energy generation and consumption;
- b) To what extent it should seek to drive change with decision makers to be more concerned about how developments work in environmental terms, rather than how they look; and
- c) To what extent the Leicestershire Together Board should support and encourage the development of community based wind developments.

Planning levels for renewable Energy Generation

23. Table 3 sets out possible generation levels for energy by 2020 based on a set of simple assumptions at three different levels of activity (Ambitious, Middle Ground and Business as usual). Figure 1 graphically illustrates:

- a. the very small share of energy consumption that is currently generated from renewable sources in Leicestershire; and
- b. even if we were able to achieve ambitious levels of renewable energy generation for all technologies we would still be short of the 30% figure for Electricity Energy Generation from renewable sources. This is not altogether surprising as Leicestershire can't claim any share in offshore wind, marine or tidal energy and has no prospects of nuclear power generation.

	Ambitious target (GWh)	Middle ground target (GWh)	Business as usual (GWh)
Wind power	947	474	229
Biomass	153	10	5
Hydro	4	2	0
Solar PV	74	50	26
Solar thermal	31	20	10
Heat pumps	214	100	61
Interactive Waste Solutions	304	182	123
Totals (GWh)	1,727	838	454
Highlighted figures lead to the target figure set out in Para 24 of 1,010 GWh			

Table 3: Breakdown of technology targets and totals for three overarching targets

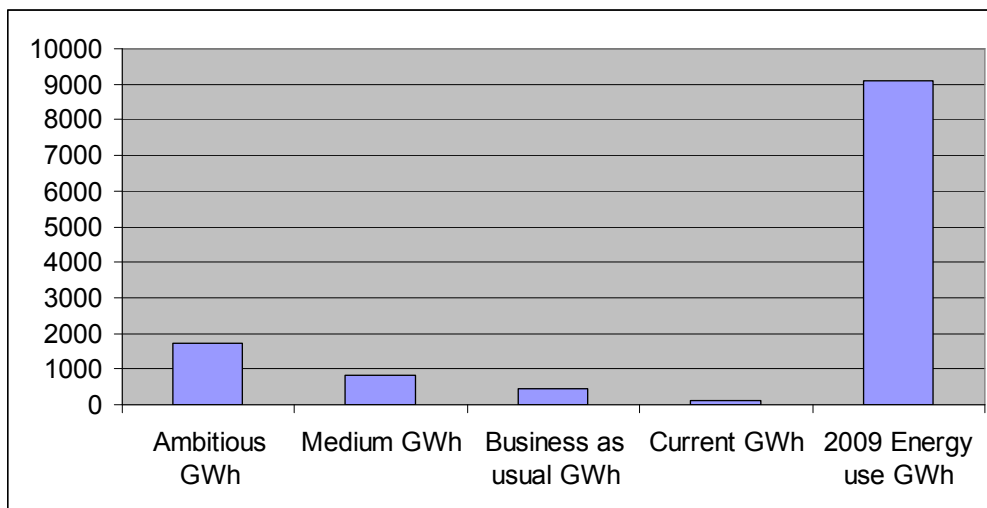


Figure 4 : Comparison of current renewable energy generation and targets against 2009 energy use

Contributing to change

24. Our conclusion on what is practical in Leicestershire by 2020 is that we can be ambitious on all technologies except wind, which is likely to be delivered on a Business as Usual basis. This would mean a 2020 total of 1,010GWh or 11% (of the 2009 level) of energy use as highlighted in Table 3. While efficiency measures will, hopefully, reduce levels of energy demand, and hence improve the proportion generated from renewable sources by 2020; it is not realistic to expect total demand to have reduced by the two-thirds necessary to make 1,010GWh equivalent to the 30% Government target for electricity generation and 12% of heat. (For example the reduction in overall demand in Leicestershire between 2005 and 2010 was 11% for electricity and 19% for gas.)
25. The implications for achieving this target are that by 2020 something in the order of 22,000 homes would need to have a small scale solar PV array, 10,000 homes would need to have a heat pump installation and 10,000 homes would need to have a solar thermal installation. This would mean that some 15% of all properties would have some form of local renewable energy generation fitted by 2020. These numbers assume that there is limited installation of these technologies on the commercial and public estates.
26. The contribution that is proposed from large scale wind, even on a Business as Usual basis will require a threefold increase in capacity compared to the current installed and approved turbines.
27. In order to deliver the ambitious agenda on all technologies, except wind, a range of actions will be needed to support the necessary levels of activity

Chapter 2. Communities, Residents and Renewable Energy

Background

28. The opportunities for communities and individual households to play a role in developing renewable energy capacity, in particular micro-generation, have changed significantly in the last few years as the result of national government policy. The introduction of Feed-in-Tariffs (FiTs) and the Renewable Heat Incentive (RHI) have made a marked impression on take up of solar PV and are likely to increase take up of solar thermal, biofuel systems, and air and ground source heat pumps. These initiatives built on previous support through direct grants such as the Low Carbon Building Programme. Even with the recent changes in the payment levels under FiTs there is every reason to expect that national policy will continue to provide support for communities and households to invest or benefit from support for micro-generation. In time further support may be made possible through the Green Investment Bank.
29. As of November 2011 1,148 installations of solar PV were receiving FiTs payments in Leicestershire, estimated to produce 3.8 GWh of electrical

power. There is little or no information available about the level of installation of other micro-generation systems such as Solar Thermal and air and ground source heat pumps. However, once the RHI is fully in place it is anticipated that more information will be available.

30. Currently local support for micro-generation installation is relatively limited. Leicestershire County Council offer grants towards micro-generation in community buildings through the SHIRE Community Climate Change Grants³ but there are few other locally funded grant schemes that we are aware of. There is a range of other support for communities and individuals wishing to invest in micro-generation including the Communities Cutting Carbon initiative led by the Rural Community Council, information and advice from the Energy Saving Trust. In addition to direct grant support and marketing and promotion by the voluntary sector, there has been a growth in commercial activity (see section on Skills and Employment). This includes offers such as rent-a-roof schemes, considerable marketing by private companies and sympathetic arrangements for private loans to fund investment.
31. Communities themselves have been active in developing and promoting renewable energy. For example in North Kilworth a Community Interest Company has been established and is supporting solar PV installations in the village. This has include the installation of Solar PVs on the local school, something that a few other schools have also done and which many other schools are interested in developing if an appropriate investment vehicle becomes available. Some schools and other community buildings have installed biomass boilers and this is another technology that will be eligible for payments under the RHI and where the opportunity for additional installations is strong. There are also examples of local communities promoting installation of micro-generation and supporting multiple installations and bulk buying activity.

Discussion of key issues

32. Overall, however, while there is interest and investment in micro-generation at a domestic and community scale the level of investment falls significantly below that which is required to make a contribution to delivering the overall target for renewable energy production as set out in the opening chapter of this strategy. It has been estimated that by 2020 there would need to be a total of 22,000 installations of Solar in the County.
33. In addition to the direct contribution communities and individuals can make in developing renewable energy, the degree to which residents are supportive of large scale renewable energy projects will have a significant impact on the amount that can be installed. In general, there has been significant opposition to proposals to develop wind turbines, waste to energy plants and other large energy production systems. It is unclear

³ Two solar PV projects have been supported to date through this fund.

whether or not the fears of local residents prior to development have been realised once completed. However, what is clear is that there is a polarised debate on the issues and a considerable degree of contradictory information presented on both side of the argument.

Contributing to change

34. Four areas have been identified where local action to support communities and individuals can assist in contributing to delivering the overall renewable energy target for Leicestershire. Each of these is briefly described below with an indication of the types of activities that are likely to be developed.

Supporting Investment micro-generation

35. A barrier to local investment in micro-generation by individuals and communities is the availability of suitable finance. While there are a number of schemes available to support installations such as “rent-a-roof” type schemes, take up is low in part because of uncertainties about the risks.

36. To address this, the focus will be on developing a scheme with commercial partners to provide up front finance to enable the following groups to install and benefit from micro-generation:

- Schools;
- Home owners on low incomes;
- Community buildings;
- Social Housing.

Access to information on micro-generation

37. Providing residents and community organisations with information about the benefits and opportunities for micro-generation which is independent and reliable could make increase installation of micro-generation. The types of specific actions that could be developed in support of this area of work include:

38. Developing a Leicestershire website on domestic and community renewables; including the opportunity for networking between individuals and organisations;

39. Delivering road shows on renewable energy opportunities across the County

Supporting Community owned and led micro-generation projects

40. Experience from elsewhere, and in Leicestershire suggests that taking action across a community rather than with a single individual can create opportunities for change. However, support is required to enable

communities to develop plans and finance to deliver. A key component of this in other areas has been the development of “Energy Shares” for the community to support local action. The key action will be to provide hands on support to Communities wishing to develop a renewable solution beyond a single property. There are now examples of community organisations accessing national funding to support such developments such as an energy co-operative (Transition Leicester – Green Fox Energy).

Promoting debate and understanding about large scale renewable energy systems

41. Recognising that the pressures to support large scale renewable energy installation in the County are likely to grow, this aspect of the strategy will be focussed on developing a methodology that could enable debate and understanding about the impacts of renewable energy installations in our communities or utilising an existing tool such as LoCal Toolkit.

Chapter 3 Employment and Skills

Background

42. The scale of Employment and Skills challenges and opportunities can be realised from the following forecast figures:
 - a. There are huge opportunities for the UK moving towards a low carbon, resource efficient economy. In 2008/09 the global market for low carbon goods and services was worth £3.2 trillion – a £150 billion increase from 2007/08 estimates. This is forecast to grow by approximately 4% per year over the next 5 years.
 - b. The UK’s market share rose to £112 billion in 2008/09 – an annual increase of 4.3% on revised figures for 2007/08. The UK low carbon and environmental goods and services sector is the 6th largest market in the world. There are approximately 910,000 people currently employed in this UK sector and this is projected to increase to over a million by the middle of the decade. In the East Midlands the size of the sector was around £7.1 billion, which was 6.6% of the UK total in 2007/08 and there were 3,400 companies in the region employing around 61,000 people
 - c. For the future, 210,000 need to be employed to cover retirements by 2016 (but also note 16% fewer 16-19 year olds by 2018), 200,000 new jobs are expected from growth linked to the Feed in Tariff and Renewable Heat Incentive. DECC estimates that up to 65,000 trained and qualified construction workers will be needed to meet consumer demand for the Green Deal and that the programme is expected to attract private capital investment of up to £15bn in the domestic sector in the next decade and could support 250,000 jobs.
 - d. These figures can be converted for the Leicester & Leicestershire workforce to be equivalent to some x% of the workforce or y posts

with a margin of some z% depending how actively we embrace the opportunities.

- e. The STEM (Science, Technology, Engineering, and Mathematics) pipeline is an issue and school leavers are inadequately prepared for work in those sectors. There is a high level of illiteracy on environmental issues generally. The UK is 23rd on the league table of nations in relation to environmental knowledge for the proportion of the population qualified at Level 3. If the country is to maintain its position and drive further ahead we must ensure that we have the skills base to achieve this. A skilled workforce is essential if we are to meet our carbon targets and realise the significant economic opportunities of the transition to a low carbon and resource efficient world.
- f. For businesses to succeed in this green economy they will need people with the technical, managerial and leadership skills to develop and exploit both existing and new markets. A green economy involves maximising economic growth within carbon and environmental constraints; transforming the economy, by decoupling growth from carbon emissions, resource use and wider environmental impacts; and supporting the growth of the UK low carbon and environmental goods and services sector for domestic and export markets. i.e. this skills need is not only for people specifically employed in the energy sector, but a demand across the workforce for a more energy literate workforce.

Issues for the Future

43. Skills: The key themes raised during the consultation on the Employment and Skills Discussion paper – Meeting the Low Carbon Skills Challenge (DECC) were:

- a. The need for a more flexible and responsive skills delivery system which better reflects current and future business needs. However, it is also noted that new low carbon businesses can be poor at articulating their skills needs, and that we will need to find better ways to inform and stimulate demand if we are to have the skilled workforce we need in the numbers required;
- b. The need for more flexible qualifications which support work-based learning. It is clear that many see continuous career development as key to a more flexible and productive workforce, particularly where new combinations of skills are needed. Businesses and employees must understand that skills development is a continuous process, requiring co-investment;
- c. The need for more support and promotion of STEM skills to improve the STEM skills pipeline, and so that the UK workforce has a greater basic understanding of sciences and mathematics on which to build.
- d. Insufficient recognition across the supply chain of the need for low carbon or resource efficiency skills, meaning that there was likely to be a case for government intervention.

44. **Employment:** Key Issues for maximising **employment** benefits from Renewable Energy generation opportunities were set out in the UK Low Carbon Industrial Strategy as:

- a. Building market demand;
- b. Supporting innovation;
- c. How to make the most of our science and research base;
- d. Supporting pre-commercial research and development to combat low levels of investment in Research and Development;
- e. Financing the timeframe involved in translation of R&D into a commercial product;
- f. Business advice for young companies to provide broader skills needed to grow products and companies;
- g. Support through procurement policy; and
- h. Intellectual property system improvement.

Contributing to Change

45. The following areas have been identified as potential priority areas where local action is required to help deliver the overall aim of maximising the employment levels based on renewable energy opportunities.

Employment support

- a) Support programme for Green Energy start ups to be run by the LLEP with a funding bid supported by the partnership;
- b) Aim to ensure Careers advisers are briefed about the Renewable Energy careers opportunities. To help deliver this Colleges to run Principles of Environmental Technologies course – targeted at adults with STEM skills and funded by the Schools Funding Agency;
- c) Green Deal promotion - Local Authorities and Energy companies to work in partnership to raise awareness of the opportunities to householders and businesses;
- d) Seek resources to continue the Energy Connections business to business collaboration network, in a local form;
- e) Ensure Leicestershire businesses are aware of the opportunities of access to finance from the Green Investment Bank through information provided by LLEP and Chamber of Commerce;
- f) Opportunities to support local business through Public procurement (forward commitment procurement) to be considered by the County Council, and to consider whether this mechanism could act as a pathfinder for establishment of an Energy Services Company;
- g) Commission the rollout of Business clubs using the NWLDC 'Green Footprints' model

Skills Development

- a) Continue to provide STEM support on the existing basis
- b) NVQ 3 programmes incorporating renewable energy efficiency training to be expanded by 200% by 2014. Delivered through Further Education Colleges such as Stephenson College, Leicester College with Leicestershire Together to commission.
- c) More flexible qualifications to be supported Resource efficiency training to be provided at FE Colleges to deliver level 2 programme 1 day course targeted at local SMEs with a target of reaching 10% of workforce by 2015.

Chapter 4 PLANNING FOR RENEWABLE ENERGY DEVELOPMENTS

Background

46. Leicestershire planning authorities have put together an evidence base to help support the preparation of planning policies and aid decision making on proposals for renewable energy.⁴ It aims to bring together information about renewable energy and planning issues surrounding its provision, in Leicester and Leicestershire in one place. Its main purpose is to provide a Leicestershire perspective on meeting the national objective of increasing the amount of available renewable energy provision. It sets out:
- current and proposed renewable energy provision;
 - the potential for future renewable energy capacity;
 - an appraisal of energy generating technologies;
 - a brief guide to connection and financial considerations; and,
 - a guide to the planning issues surrounding renewable energy developments.
47. This document has been prepared by officers of the District, Borough, City and County Council. The document has been endorsed by the Housing Planning and Infrastructure Group (HPIG) and is seeking the endorsement of the Leicestershire Environment Board. It is recommended that each local planning authority will endorse the document for use in policy preparation and decision making.

Policy Context

48. The government has developed specific policies on renewable energy such as the Renewable Energy Strategy (2009) and Carbon Plan (2011). These policies explain that climate change policy objectives underpin much of government economic, fiscal and planning policies. Planning policy in particular has at its root sustainable development, and is critical to the provision of renewable energy facilities to ensure sufficient renewable energy capacity is available to meet the needs of the UK. The government has recently issued the *National Planning Policy Framework*, which aims to articulate national planning policy in one concise document. It supersedes most of the previous 40 Planning Policy Statements (PPS), Planning Policy Guidance Notes (PPGs), Mineral Policy Statements (MPSs) and Mineral Planning Guidance Notes (MPGs).
49. In Leicester and Leicestershire, Leicester City Council, Oadby and Wigston Borough Council, Harborough District Council and Hinckley and Bosworth Borough Council all have adopted Local Development Framework Core Strategies (that supersede some Local Plan policies). All of the adopted Core Strategies contain policies which address climate

⁴ This chapter has been written using material from a joint study and evidence base that is available on the Leicestershire Together website at (tbc)

change adaptation and mitigation. They all set out requirements in terms of the Code for Sustainable Homes. Leicester City, Harborough and Oadby and Wigston's Core Strategies include policies with specific reference to large scale renewable energy schemes, with the latter authority including specific targets within their plan. Other Districts in Leicestershire are working towards adopting Core Strategy documents for their administrative areas over the next 2 years.

50. Leicester and Leicestershire have jointly adopted Minerals and Waste Development Framework (WDF) Core Strategy and Development Control Policy documents. The WDF contains a specific policy (WCS 6) setting criteria that an application for any Energy from Waste Facility (including Anaerobic Digestion and Incineration) would need to meet in order that it may be considered favourably. This includes maximisation of energy recovery, satisfactory management of residues and possible recovery, and acceptable environmental impacts.

The Planning Control and Building Control Regime

Development Management

51. Most renewable energy proposals will require planning permission from the local planning authority. Some domestic scale facilities will have permitted development rights. The requirements are set out under planning regulations. If the proposal is located on a property owned by the County Council or involves some element of waste management (e.g. anaerobic digestion) then the application could fall to be determined by the County Council.
52. There are many potential national and local planning policies and considerations that could be relevant to a development proposal. The policies contained within the 'development plan' are the starting point for considering a planning application. Generally, planning policy seeks to promote sustainable development and the contribution that renewable energy makes to mitigating and adapting to climate change, is an important national objective that is reflected through the planning system. This has to be balanced with the environmental, economic and social impact that such proposals may have.

Building Control

53. Government has introduced a timetable for reducing regulated carbon emissions (e.g. space, light and hot water, but excluding appliances) from domestic and non-domestic buildings, set out in the document 'Building a Greener Future', which details the progressive tightening of Part L (Conservation of Fuel and Power) of The Building Regulations. They require new homes and non-domestic buildings to be 'zero carbon' by 2016 and 2019 respectively.

54. The *Code for Sustainable Homes* (CSH) is a national standard made up of 6 code levels for building residential dwellings in a sustainable way. These code levels are used as the basis for setting building standards in Core Strategy housing policies. There is a link between Part L of The Building Regulations and minimum energy conservation standards required for the Code for Sustainable Homes (shown below in Table 5.1). The scope of the Code is however much broader, covering 9 categories, only two of which (energy efficiency and water efficiency) are mandatory through Building Regulations (DCLG, 2006b). In total the CSH covers Energy/CO², Water, Materials, Surface Water Runoff, Waste, Pollution, Health and Well-being, Management and Ecology. It is available at: http://www.planningportal.gov.uk/uploads/code_for_sust_homes.pdf.

Table 5: Part L Building Regulations and Code for Sustainable Homes comparison

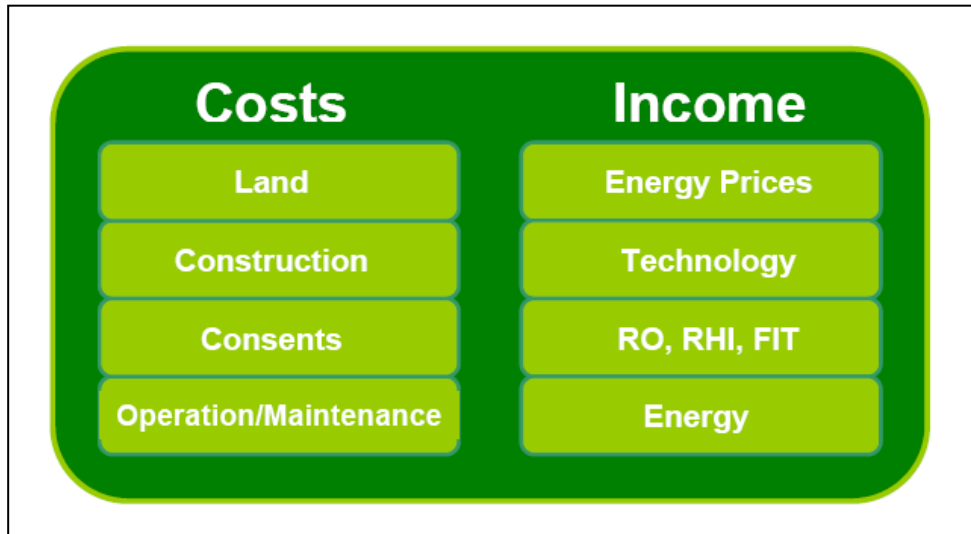
Date	2010	2013	2016
Energy/carbon improvement as compared to Part L (Building Regulations 2006)	25%	44%	Zero-Carbon
Equivalent energy/carbon standard in the Code	Code level 3	Code level 4	Code Level 5

Source: DCLG (2006a).

55. The preferred assessment method for non-residential buildings uses BREEAM ratings (Building Research Establishment Environmental Assessment Method). Categories covered include energy, management, health and well-being, transport, water, materials, waste, land use, pollution and ecology. Buildings can be rated: pass, good, very good, excellent and outstanding. Details are available at: <http://www.breeam.org/page.jsp?id=66>. Similar to the CSH, renewable or low carbon energy sources are one means by which a building can achieve the desired rating.

Economic Viability

56. A key issue in the deployment of renewable energy installations is the economic benefits. The economic viability of a renewable energy facility is reliant on the expenditure in setting-up a project and the income likely to be generated. Financial benefits of a project will usually accrue from a reduction of fossil fuel energy sales and income from government subsidies. These will be specific to each technology and project. Below is a summary of the financial considerations which need to be addressed by a prospective developer.



57. Government financial incentives for electricity can be divided into the Renewable Obligation (RO) for commercial projects and Feed-in Tariffs (FiTs) for smaller scale installations. The RO is available to electricity generating installations of 50kW and over, with FiTs for smaller-scale (<5MW) electricity generation (i.e. installations between 50kW and 5MW could choose between the FiTs and RO scheme) (DECC, 2011d). The rates for each of these schemes are dependant upon the technology and are subject to periodic review. For ROCs each MWh of electricity is projected to be awarded 0.124 ROCs in the year 2012/13 (DECC, 2011e). The RHI applies to small-scale projects which generate heat (up to 1MWth). The correct rates for the RHI and FiTs are more complex and figures as of 1st January 2012 can be found from the DECC website.
58. As well as incentivising production of renewable energy there is a scheme called the Carbon Reduction Commitment (CRC), which places a carbon reduction responsibility through a payment of £12 per tonne of carbon, on any organisation using over 6,000 MWh electricity per year. Details are available from the Department for Energy & Climate Change website at: http://www.decc.gov.uk/en/content/cms/emissions/crc_efficiency/crc_efficiency.asp.
59. The relatively high capital cost of technology means that payback times are still a constraint for mass deployment in many cases including PV, Solar Thermal, Hydro electricity and on-shore wind turbines. A study by the Department for Energy and Climate Change (2011a) examined the capital and operating costs for certain technologies. Each installation will have its own payback period. These costs exclude transmission and Distribution Network Operator connection costs (e.g. the costs of the company in charge of maintaining the network), which are indicated in the study, but should be established with the DNO.
60. Details of technologies and potential constraints including some indicative ideas of costs and income are addressed in the evidence base.

Energy Service Companies

61. Energy service companies (ESCOs) are companies specifically set up and contracted to provide heat and power to consumers – the services provided by energy, rather than selling fuel or electricity. Local authorities can set up or help to establish ESCOs in their area. As well as supplying energy, ESCOs can offer a package of energy efficiency measures thus helping to reduce carbon emissions. ESCOs can also be contracted to design, build and operate community heating systems.
62. Various models exist such as the establishment of a wholly owned company (such as Woking Borough Council's Thameswey Ltd), or an independent company (such as Aberdeen Heat and Power Company). The Energy Saving Trust has produced a fact sheet for any authorities or community groups looking to establish an ESCO, available at: <http://www.energysavingtrust.org.uk/business/Global-Data/Publications/Guide-to-NI-186-Community-energy-and-ESCOs>.

CONCLUSIONS ON PLANNING: STRATEGIC CHOICES

63. If progress is to be made towards securing an appropriate level and mix of energy capacity, then choices need to be made about how and where such facilities should be delivered. The biggest potential contribution is likely to come from wind and waste, followed by the installation of heat pumps and solar panels.
64. An important aspect in ensuring the provision of sufficient renewable energy installations and developments is through effective renewable energy planning policies. Those policies will need to be brought forward through development plans in Leicestershire based on the information and evidence in this and other documents. Local Planning Authorities in Leicestershire are at various stages in development plan preparation. Newly adopted plans already contain broad renewable energy policies which provide the foundation for more detailed policies through development control policies documents and Supplementary Planning Documents, with a view to achieving the target set out in Para 24.
65. The evidence in this chapter provides:
- baseline knowledge and understanding for land use policies;
 - current level of renewable energy generation, which will better inform decisions on planning applications;
 - the likely quantum of renewable energy required to contribute to national objectives;
 - a context to ensure that the need for renewable energy development is properly understood and promoted in places that are acceptable to communities and the environment; and
 - a basis for a monitoring framework to monitor consented and implemented capacity on a countywide basis;

66. Local Authorities could also seek to secure funding for renewable energy developments through the Community Infrastructure Levy. This could be useful to help provide financial resources for renewable energy solutions, where this is not viable or possible on a development site. It is also possible to secure the implementation of development pursuant to specific schemes through a section 106 legal agreement.

Cross Cutting Issues

Embracing the opportunities to maximise the generation of renewable energy would have a number of benefits in tackling cross cutting issues. These include:

- Economy/Growth. Opportunity to grow jobs locally by supporting the development of environmental technologies
- Localism/Community. There is a big opportunity to embrace community led solutions and ownership in the delivery of schemes
- Health/Social. Programmes of local delivery and local generation, particularly when there is an element of community involvement, can, when coupled with energy efficiency measures, help deliver affordable warmth and remove families from fuel poverty with significant benefits for health and wellbeing.
- Knowledge. Science, Technology, Engineering and Mathematics skills are a strength for Leicestershire's Universities and Colleges and development of the sector locally would provide benefits for renewable technologies in Leicestershire.
- Choice. Development of renewable technologies would, to some degree, reduce the dominance of a few large power suppliers which could include those which are based locally, on a community basis or on ethical principles.
- Equality. There is an opportunity, particularly for social landlords, to undertake Renewable Energy schemes, with grant support, which would provide tenants with cheaper energy.
- Climate Change. Maximising renewable energy generation (when energy efficiency measures have also been applied) allows us to support a good quality of life and well being whilst still tackling the reduction of carbon emissions.

Given these potential cross cutting benefits, there are strong arguments for maximising our generation of renewable energy and we would be pleased to hear from consultees on views on the suggested main proposals for achieving this desirable goal.