Renewable Energy for Kent

An Action Plan for Delivering Opportunities

2013-2018

August 2013

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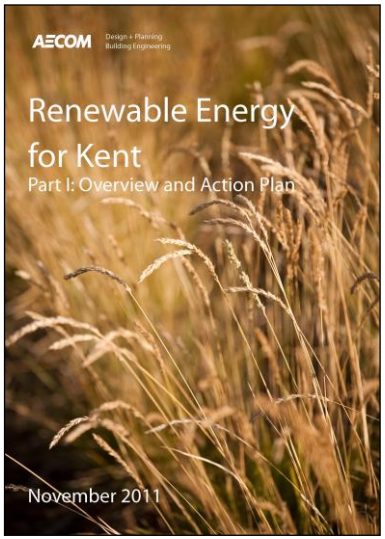
Contents

Introduction

Renewable energy is now an integral and growing part of our energy mix. Key national targets are instrumental in this uptake including the UK's target to reduce greenhouse gas emissions by 34% by the year 2020 and a binding European Union target requiring 15% of the UK's total energy demand being sourced renewably in the same timeframe. In Kent a commitment has been made to a 60% reduction in carbon emissions on 1990 levels by 2030.

Kent partners have already helped enable significant opportunities for renewable energy to be deployed across public, private and voluntary sectors in Kent. This currently produces around 640GWh of renewable energy annually (3.1% of our energy usage) with this figure increasing as new developments are installed. The growth is also good for our economy and it has been estimated that 19,600 people in Kent are currently employed in renewable and low carbon technology related industries, with this sector expanding nationally at around 5% per year.

It is important that we continue to build on these successes and take further action to realise our potential as a County. The first step is to understand our resources and develop a co-ordinated approach to the generation of renewable energy. Kent County Council (KCC) commissioned AECOM to undertake a renewable energy resource and opportunity study for Kent. The study was financed through ClimactRegions, an INTERREG IVC project and completed in April 2012. Further details and the full study report are available on the KCC website.

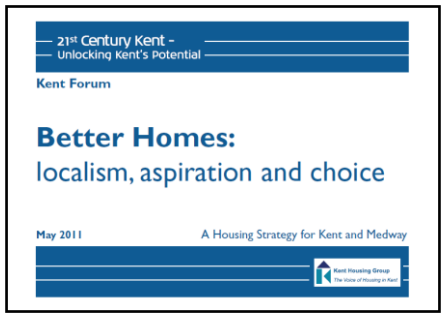


This plan takes forward actions recommended by the County Council's Renewable Energy Select Committee and the priorities set out in the Kent Environment Strategy. It further builds on the actions identified in the AECOM study and the responses to a draft version of this plan circulated to stakeholders during the autumn of 2012. It is important to note that renewable energy is just one area of carbon reduction. Savings will also need to come through a range of other measures delivered on a local and national scale, including the improvement of buildings, de-carbonisation of the national electricity grid, and lower carbon transportation. Kent's proposed approach to carbon reduction is set out in the Kent Environment Strategy.

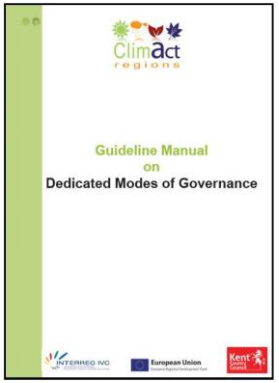
In Kent we have an excellent record for partnership working and this document continues that approach. A co-ordinated and shared approach to delivery can put Kent at the foreground of renewable energy development and drive our aspiration to be a truly low carbon County. Generating energy locally has the added benefits of helping to maintain secure and affordable supplies while keeping more money in the Kent economy and resident's pockets, and creating new business opportunities and jobs.

Governance

This Renewable Energy Action Plan fits within the current governance structures which ultimately report to the Kent Council Leaders, a high-level strategic group made up of the democratic leaders of Kent County Council, the 12 District Councils in Kent and Medway Council. Governance is informed by a number of joint strategies including the Vision for Kent, Kent Environment Strategy and the Housing Strategy for Kent and Medway.



This plan has built on AECOM's recommendations and stakeholder feedback. The study took a new approach to determining Kent's potential, utilising not only standard DECC methodology for identifying resources, but also identifying the ambition of key stakeholders for delivery. On completion, the AECOM study was made available online and a short survey developed for further stakeholder input on the proposed actions. This action plan is a culmination of the study and the stakeholder input received to date including consultation on a draft version of the plan during the autumn of 2012.



In addition, the development of governance around the renewable energy action plan has been informed by ClimactRegions, and in particular, the manual of best practice produced as part of the project. The manual describes good governance and builds on case studies from across the partner regions. The Kent manual is available on the ClimactRegions website at www.climactregions.eu

The plan has a five year time horizon from 2013-18. Lead partners have agreed to take on the respective work packages and will work with other stakeholders on delivery. Monitoring and overarching management of the plan will rest with KCC.

Approach

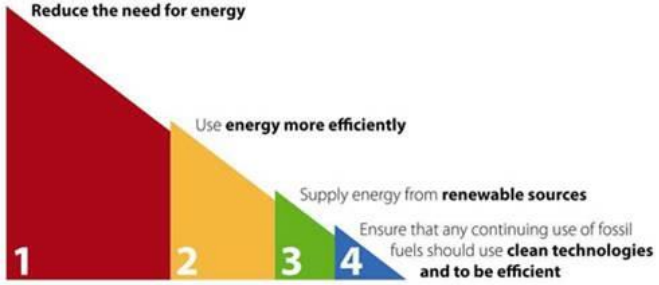
The plan is divided into a series of work packages each with no more than five actions and to be delivered in the short (1 year), medium (2-3 years) or longer-term (3+ years). The work packages are as follows:

WP1: Skills and Training
WP2: Public Sector Leading by Example
WP3: Planning and Development
WP4: Business and Innovation
WP5: Community Energy
WP6: Focus on Wind Energy
WP7: Focus on Bioenergy

These packages do not address all technologies or opportunities in the County, but focus on those with the greatest potential and where we can provide the greatest influence or support. For example, a high proportion of our current renewable energy generation is from waste to energy plants and there are already plans and strategies in place to maximise these opportunities (*see below*). Actions are therefore not repeated in this plan. Another highlighted area of potential from members and stakeholders has been around marine technology (*excluding offshore wind*). This is an emerging technology not yet mature but offering longer term opportunities and so has been incorporated into the Business and Innovation work package.

Energy Hierarchy

The Kent Environment Strategy highlights how we can look to reduce the need for energy and use what we do need more efficiently e.g. through insulating buildings and using energy efficient equipment. This plan addresses the 3rd level of the energy hierarchy when opportunities for energy efficiency and reduction have already been assessed.



Allington Energy from Waste (EfW)

Photo Source: Kent County Council

Energy from Waste

The majority (59%) of renewable energy generation in Kent to date is down to energy from waste installations, 56% of which is from a single plant at Allington in Maidstone. Plants of this nature are classified as renewable under the DECC methodology as a proportion of the waste streams they handle is green and considered a renewable source. It is important to note that Kent stakeholders have raised concerns about these assumptions.

Several authorities across the South East, known as the SE7, are taking a collective approach to managing waste to maximise cost savings. The project will require the authorities to revise their business model and take a more proactive approach towards being a supplier of commodities and fuel for energy production. Kent will continue to work with its SE 7 partners to maximise the potential for energy from waste and this work will be closely aligned to the Renewable Energy Action Plan.

Work Package 1: Skills and Training

Lead: Swale Borough Council

Introduction: Kent has the potential to be a national leader in the transition to a low carbon economy[1]. We know that Kent and Medway perform very strongly in terms of the primary low carbon and environmental goods and services sector (LCEGS). It is vital that we make the most of our potential for economic growth and a key way we can do this is by helping to build the levels of skills, training and education needed amongst our workforce. Kent and Medway already has several universities and colleges offering state of the art training facilities. However, further action is needed to increase capacity and ensure that Kent is well placed to provide sector investors with access to a skilled workforce.

Action		Due (S/M/L)	Resources
ST1:	Develop and deliver a skills strategy for low carbon and environmental goods and services addressing both 14-24 year olds and higher education opportunities.	**Short**	· KCC · Hadlow College · Greenov Project in Ashford
ST2:	Support and promote the development of renewable energy skills locally through the consortium of engineering colleges including SusCon, Swale Skills Centre and East Kent College.	**Medium**	· KCC, Kent Districts, SusCon, Swale Skills Centre, East Kent College, Kent Downs AONB
ST3:	Raise awareness of the availability of Kent based courses and organisations offering training in renewable energy skills including courses linked to the transfer of skills.	**Short**	· KCC, Kent Districts, SusCon, Swale Skills Centre, East Kent College, Kent Downs AONB
ST4:	Develop a programme of placements and apprenticeships allied to the growth of renewable energy technologies and services, linking businesses and communities with students in Kent, and building on current projects.	**Medium**	· Swale Skills Centre partnership with DONG · Kent and Medway Green Deal Partnership · Kent Placement Portfolio · Romney Marsh Partnership (Dungeness) · Kent Downs AONB
ST5:	Develop an expertise network for renewables that can provide guidance and support for project development and assessment, and access to training for elected members and planning officers.	**Short**	· KCC, Kent Districts, KCCN, Kent Downs AONB

[1] *Regeneris Consulting Ltd (2012): Low Carbon Kent – Developing an evidence base for opportunities in the Low Carbon Economy*

Work Package 2: Public Sector Leading by Example

Lead: KCC Enterprise and Environment

Introduction: The public sector is already delivering renewable energy opportunities through its own estate. Micro-generation installations can now be seen across a range of public buildings and schools in the County. This work package looks to increase deployment and share best practice to improve knowledge. The expectation that new public buildings will be zero carbon from 2018 will drive the introduction of new standards for energy performance in the public sector estate.

Action		Due (S/M/L)	Resources
PS1:	Develop standards for all new public sector buildings that include the assessment of opportunities for renewable energy deployment where feasible and viable.	**Short**	• KCC, KCCN
PS2:	Assess the potential for renewable energy installations across public sector and school properties and seek to implement the findings where a sound financial business case exists.	**Medium**	• KCC, KCCN
PS3:	Research finance and delivery models for the installation of renewable technologies by the public sector, business and communities.	**Medium**	• KCC
PS4:	Communicate and share information about the availability of renewable resources in the County and the application of best practice from installations in the public sector estate.	**Short**	• KCCN • AECOM study

Work Package 3: Planning and Development

Lead: Tonbridge and Malling Borough Council

Introduction: The National Panning Policy Framework (NPPF) recognises that planning plays a key role in supporting the delivery of renewable and low carbon energy and associated infrastructure. Local planning authorities have been asked to consider the contribution their communities can make to energy generation from renewable sources as part of sustainable development. The requirement for renewables will also form an important consideration in meeting the Governments ambition that new buildings will be zero carbon from 2016[2] beginning with homes.

The actions set out in the plan can assist local planning authorities in dealing with the requirements of the NPPF and the introduction of 'allowable solutions' linked to zero carbon development. They can help with the development of local strategies and policies for renewable and low carbon energy and can further help to increase understanding of the options for on and off site solutions. Local leadership will be important in driving the opportunity for community scale solutions.

Action		Due (S/M/L)	Resources
PD1:	Develop a common understanding and guiding principles for Kent to help shape the preparation of renewable energy policies in local plans and inform delivery.	**Short**	▪ Tonbridge and Malling BC, KPOG, KCC, Kent Downs AONB ▪ Kent Design
PD2:	Share experience of dealing with renewable and low carbon energy to build a greater understanding of the range of solutions and the associated planning issues and delivery costs.	**Short**	▪ Tonbridge and Malling BC, KPOG, KCC, Kent Downs AONB ▪ Kent Design
PD3:	Provide guidance and support to assist developers in bringing forward proposals for community scale energy projects in major development areas of Kent e.g. district heating.	**Medium**	▪ Tonbridge and Malling BC, KPOG, KCC, Kent Downs AONB ▪ Kent Design
PD4:	Develop a central database of completed renewable energy projects and case studies (local and UK) to provide opportunities for shared learning across members and planning officers.	**Medium**	▪ KPOG, KCC, AECOM study ▪ Kent Design

[2] The Government target is for new homes to be zero carbon from 2016, public buildings from 2018 and commercial buildings from 2019.

Work Package 4: Business and Innovation

Lead: Business Support Kent

Introduction: Increasing renewable energy deployment and researching new technologies, materials and energy storage can provide significant business opportunities for the Kent economy. Providing a supportive environment for development including access to support networks, innovation centres and funding can help businesses with potential to grow and invest with confidence in Kent.

Action		Due (S/M/L)	Resources
BU1:	Provide support for renewable energy start-ups, including business advice and mentoring, networking opportunities and promotion	**Short**	• BSK High Growth Kent
BU2:	Develop knowledge networks, fostering links between private, academic and public sectors, and developing research and innovation.	**Medium**	• Karim
BU3:	Support and promote local innovation hubs building on activity already in place e.g. offshore wind energy and focussing on growth areas across Kent.	**Medium**	• Kent CORE Prospectus • Kent Offshore Wind Supply Chain Study
BU4:	Keep under review developments in marine renewables and promote the opportunities for business growth in Kent ensuring no detrimental impact on protected areas.	**Medium**	• Karim • FUSION • KCC Marine Technology study
BU5:	Facilitate access to competitive loans for new or diversifying businesses with clear potential in renewable and low carbon energy.	**Short**	• Expansion East Kent (RGF) • TIGER (RGF) • Marsh Million

Work Package 5: Community Energy

Lead: KCC Enterprise and Environment / Business Strategy and Support

Introduction: Across Kent there are significant opportunities for communities to develop their own local energy solutions and generate on-going income for their areas. The application of technologies at a local level could be freestanding or integrated with community buildings. For example there maybe opportunities for a community wind turbine or solar photovoltaic array, while in off-gas areas it may be appropriate to consider biomass solutions. This work package supports communities to realise renewable energy opportunities in their locality (see also WE4 in relation to support for community wind projects).

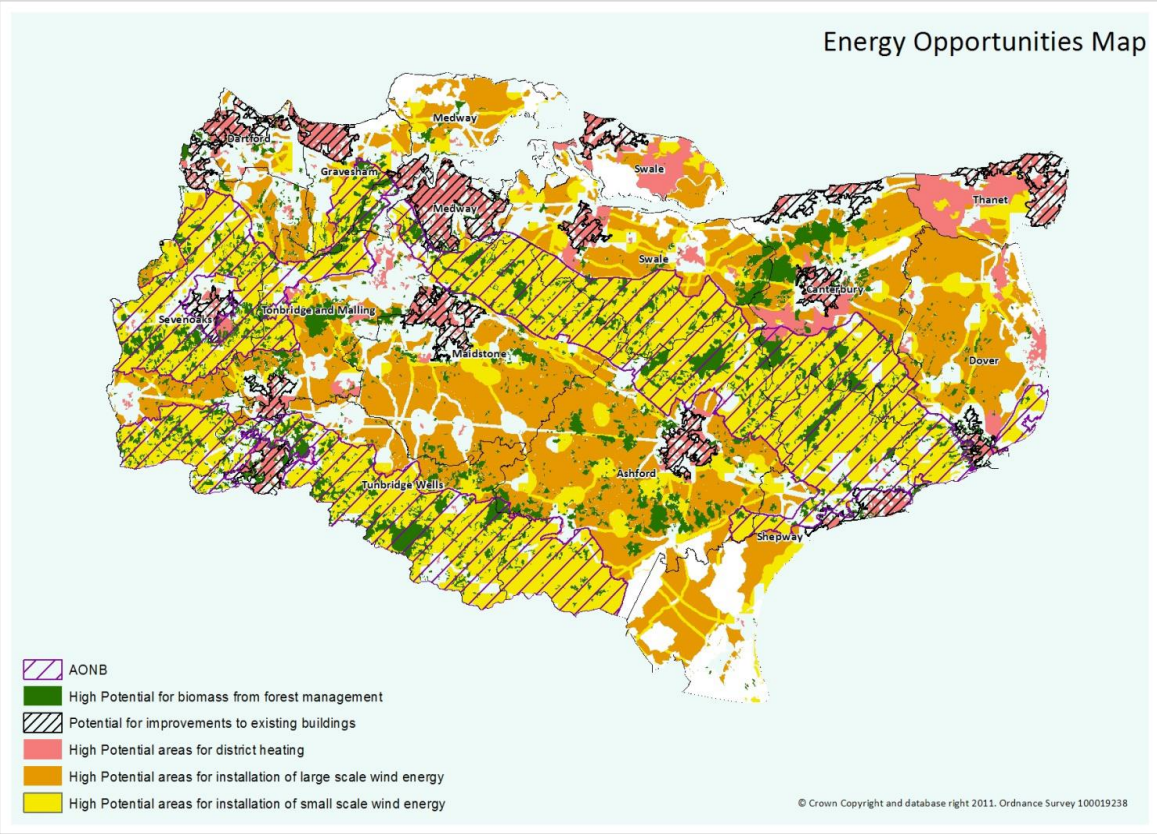
Action		Due (S/M/L)	Resources
CE1:	Raise awareness of the availability of renewable energy resources in the County and the opportunities for communities to benefits from developing local generation projects.	**Short**	· AECOM study · District studies · Neighbourhood plans
CE2:	Disseminate renewable energy delivery models and case studies including real experiences for communities.	**Medium**	· PlanLoCal · Sustainable Sheppey
CE3:	Develop a community champion's scheme and provide training on renewable energy including mentoring opportunities.	**Medium**	· Groundwork · Kent Parish Councils · Transition Town Groups
CE4:	Provide guidance and support for communities to assist with project development including feasibility, public consultation, planning, financing, construction, operation and management of renewable energy installations.	**Medium**	· Green Deal · Carbon Leapfrog · Energy 4 All · Community Generation Fund · Rural Community Energy Fund

Focus on Technologies

The actions so far have looked across renewable energy focussing on skills, leadership, planning, business opportunities and support for communities. A key outcome from AECOM study is a greater understanding of the renewable resources with the biggest potential for development in Kent and which if harnessed can contribute most to meeting our demand for energy sustainably. The two most significant resources identified by AECOM are wind and biomass and the next two work packages focus on actions to realise the potential from these technologies.

There are other technologies which must also be addressed through the activities in the plan. For example, large scale solar farms have recently proved popular with developers. Micro generation opportunities are incorporated throughout the previous work packages and new technologies will be reviewed on a regular basis through the business and innovation work package and monitoring progress on the delivery of the action plan.

For further information on the availability of renewable energy resources in Kent, please visit the KCC website for the full findings of the AECOM study.



Work Package 6: Focus on Wind Energy

Lead: KCC Business Strategy and Support

Introduction: Kent's competitive advantage as a location supporting the growth of the offshore wind industry is now well established. Economic opportunities for Kent are significant, particularly in relation to building a sector supply chain and as an important centre for operations and maintenance. The Government has recognised this and designated Kent one of six Centres for Offshore Renewable Engineering (CORE) in England. The Kent CORE is strategically well located to play a key role in supporting the continued growth of offshore wind farms in both UK waters and abroad.

The potential for commercial and community scale onshore wind energy can further utilise skills and encourage investment. It can also provide a source of income for communities while keeping energy bills affordable and supplies secure. The AECOM study identified onshore wind as Kent's strongest resource with the greatest potential to contribute to local and national targets for renewable energy supply. However, the impact of wind turbines on landscapes and local amenity has made this form of development controversial. Local assessments can assist by helping to prove development capacity whilst ensuring the unique character of Kent is maintained and the impact on protected areas fully addressed.

Action		Due (S/M/L)	Resources
WE1:	Develop Kent's supply chain capabilities for the offshore wind sector through research, events, networking and the Kent Wind Energy online business directory.	**Short**	· FUSION Supply chain mapping, gap analysis and database work · kentwindenergy.co.uk · GROW:Offshore Wind · BIS, UKTI
WE2:	Promote and increase investment in the Kent CORE to realise its development potential.	**Short**	· Locate in Kent · Kent CORE Prospectus · CORE England group
WE3:	Develop an assessment tool for Kent to assist local analysis of wind energy opportunities, identify the most suitable locations, and ensure the impact on landscapes and protected areas are properly considered.	**Medium**	· KCC, AONB
WE4:	Provide guidance and support for communities to assist with project development including feasibility, public consultation, planning, financing, construction, operation and management of wind turbines.	**Long**	· Energy 4 All · Community Generation Fund · Rural Community Energy Fund

Work Package 7: Focus on Bioenergy

Lead: Kent Downs AONB Unit

Introduction: Biomass comes in a number of forms and can be used in a variety of ways to generate energy, from small scale domestic boilers to co-firing in large power stations. In Kent, it is estimated that around 60,000 tonnes of sustainable wood fuel resource could be delivered per annum, equivalent to 42,000 oven dried tonnes at 30% moisture content. This could be sufficient to heat up to 30,000 Kent homes. In addition to wood fuel, further opportunities exist for biomass resource from agricultural arisings, energy crops, waste wood and green waste streams. All of these will require further investigation in line with the framework laid out in the UK Bioenergy Strategy.

Action		Due (S/M/L)	Resources
BE1:	Make use of research and practical experience to increase market demand for Kent's sustainable woodland resource and waste wood streams including arboriculture arisings, and support the development of local supply chains.	**Short**	• MULTIFOR/ADAPTOR • Kent Downs AONB Unit • NFU
BE2:	Map areas of opportunity for the cultivation of energy crops, use of agricultural arisings and green wastes capable of supporting a sustainable and co-ordinated supply of on-going biomass.	**Medium**	• AECOM study, FUSION project
BE3:	Build and refine the understanding of issues affecting the delivery of bioenergy including accessibility, storage, skills, air quality, landscape protection and enhancement, water resilience, habitat creation etc. to inform on-going programme development and communication.	**Short**	• KCC, FUSION Project
BE4:	Engage with different sectors such as commercial, retail, education, public and community about the opportunities and benefits from switching to renewable fuels such as biomass.	**Medium**	• MULTIFOR/ADAPTOR
BE5:	Identify where significant opportunities arise for anaerobic digestion in the County and share learning and best practice to assist the development of projects.	**Medium**	• Hadlow College AD study • Case studies

Glossary of terms and abbreviations

Anaerobic Digestion – A processes by which microorganisms break down biodegradable material in the absence of oxygen to produce fuels

Allowable Solutions – A way of compensating for the CO2 emissions reductions that are difficult to achieve through normal design and construction

AONB – Area of Outstanding Natural Beauty

BSK – Business Support Kent

CORE – Centre for Offshore Renewable Engineering

DECC – Department of Energy and Climate Change

DONG – Danish Oil and Natural Gas

FUSION – A programme supporting businesses seeking to start, change and grow while taking into consideration the environmental and social impact of their business

Greenov Project – A European funded initiative looking at green renovation in the refurbishment of buildings and the construction of new ones

GWh – A unit of electrical energy

Karim – Knowledge Acceleration and Responsible Innovation Meta-network, aimed at facilitating knowledge transfer across North West Europe

KCC – Kent County Council

KCCN – Kent Climate Change Network

KPOG – Kent Planning Officers Group

LCEGS – Low Carbon Environmental Goods and Services Sector

MULTIFOR – A European funded initiative focused on the multifunctional role of forests

NPPF – National Planning Policy Framework

RGF – Regional Growth Fund

SE7 – A consortia of seven South East councils comprising Brighton and Hove City Council, East Sussex County Council, Hampshire County Council, Kent County Council, Medway Council, Surrey County Council and West Sussex County Council

TIGER – Thames Gateway Innovation Growth and Enterprise Fund

Stakeholders

During development of the AECOM study and Action Plan, stakeholder input has been a key part of the process through workshops and on-going feedback as the study has progressed. Representatives from the public, private and voluntary sector were represented including:

Ashford Borough Council
Business Support Kent
Canterbury City Council
Daedalus Environmental
Deal Environmental Group
Deal Town Council
Dover District Council
Elham Environment Group
Enevis
Environment Agency
Estuary Energy
Finance South East
Forestry Commission
Gravesham Borough Council
Hadlow College
Institute of Sustainability
Kent Architecture Centre
Kent County Council
Kent Downs AONB
Kent Economic Board
Kent Fire and Rescue Service
Kent Science Park
LASER (Kent County Council)
Locate in Kent
Maidstone Borough Council
Paul Sharpe Associates
Pentland Homes
Sevenoaks District Council
Swale Borough Council
Swale Skills Centre
Thanet District Council
The Bay Trust
Torry Hill Farm
Transition Town Sevenoaks
Transition Town Tunbridge Wells
Tonbridge and Malling Borough Council
Tunbridge Wells Borough Council
University of Kent
Vattenfall Wind Power

References and useful documents

AECOM: Renewable Energy for Kent Part 1 – Overview and Action Plan (2012)
AECOM : Renewable Energy for Kent Part 2 – Underpinning the Vision (2012)
Kent Forum: Vision for Kent 2012-2022
Kent County Council: Bold Steps for Kent (2010)
Kent Forum: Kent Environment Strategy (2011)
Regeneris Consulting Ltd.: Low Carbon Kent – Developing an evidence base for opportunities in the Low Carbon Economy (2012)
HM Government: The Carbon Plan – Delivering our Low Carbon Future
DECC: UK Renewable Energy Roadmap Update 2012
DECC: UK Bioenergy Strategy 2012

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