Local Plan 2040: Energy Paper

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Executive Summary

UK energy strategy is fundamental to addressing the causes of climate change and Canterbury district has already been playing a major role in providing renewable energy infrastructure.

Whilst there has been considerable success in reducing the carbon intensity of UK electricity generation, there has not been comparable progress in reducing emissions from energy used to power transport and heating buildings.

Canterbury district is well placed in the regional power network and has a high potential for expansion in renewable energy generation which are pivotal to the regional Energy and Low Emissions Strategy.

In order to achieve the objectives of reducing district carbon emissions and provide the renewable power to enable the switch away from fossil fuels, the Local Plan 2040 needs to provide clear direction and policy for the provision of sufficient renewable energy generation in the district. This will require:

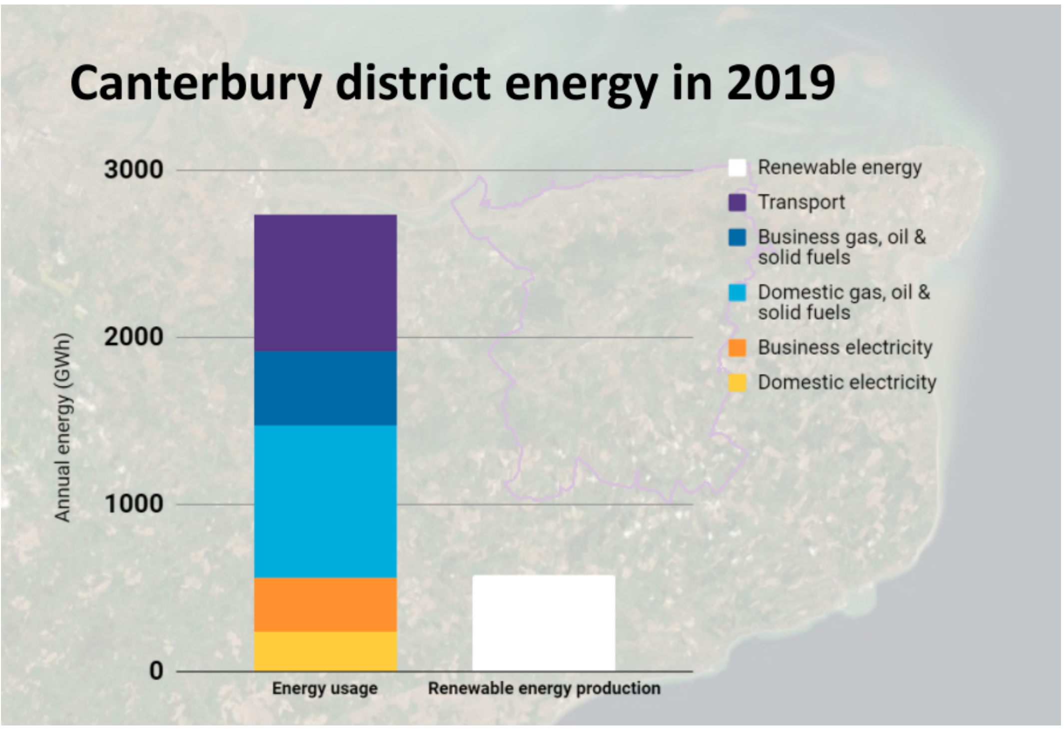
- Over 50% additional offshore wind generation by 2030
- Multiple onshore wind generation developments of a range of sizes by 2030
- Much more rapid deployment of rooftop solar electricity and heat generation
- Continued development or community and utility scale solar electricity installations

The report recommends the identification of priority areas for investment in renewable energy generation infrastructure across the district within the local plan along with more proactive policy to encourage and enable renewable energy installations within the Local Plan 2040.

Contents

1. Energy usage in the district

Figure 1: Energy usage in Canterbury district 2019 (Source: National Statistics)



In 2019, Canterbury district consumed around 2700 GWh of energy. Around 500 GWh of the energy consumption was electricity and this was approximately equivalent to the total production of renewable energy recorded as generated in the district. The remaining 2200 GWh of energy consumed was in the form of fossil fuels; gas is the largest energy component, used for heating and cooking in homes and businesses. There is a very small proportion of heating oil and solid fuels used. Petrol and diesel used for road transport is the second largest energy source.

2. Renewable energy in Canterbury district

Renewable energy within Canterbury district comprises solar photovoltaic electricity production in solar parks or farms and on building roofs, the offshore Kentish Flats wind turbines (which are not geographically within the district through the power connection arrives on shore adjacent to Herne Bay), and a small amount of landfill gas from the landfill site at Broad Oak, near Canterbury (landfill gas is classified as a renewable source of energy in national statistics, however it contributes to carbon emissions).

Figure 2: Renewable energy production in Canterbury district.

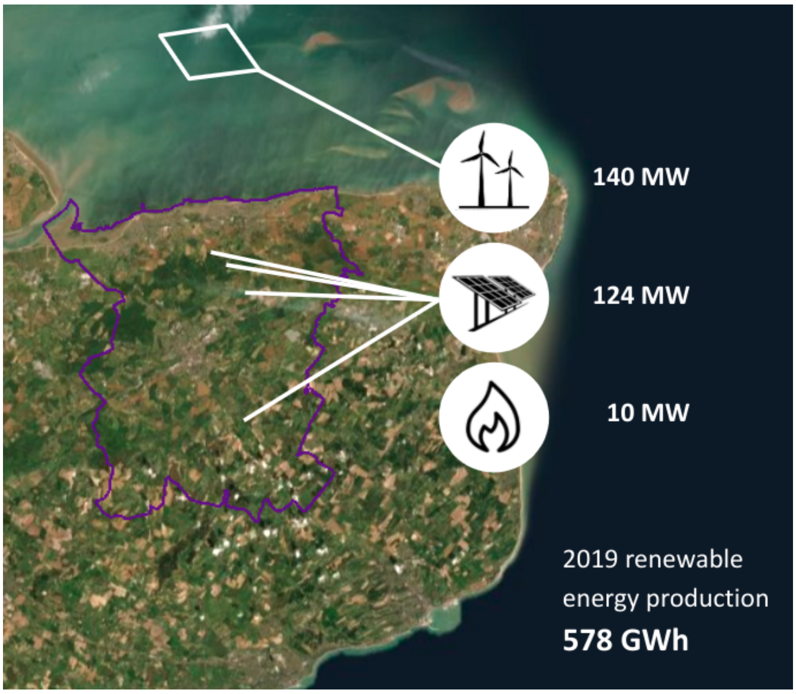
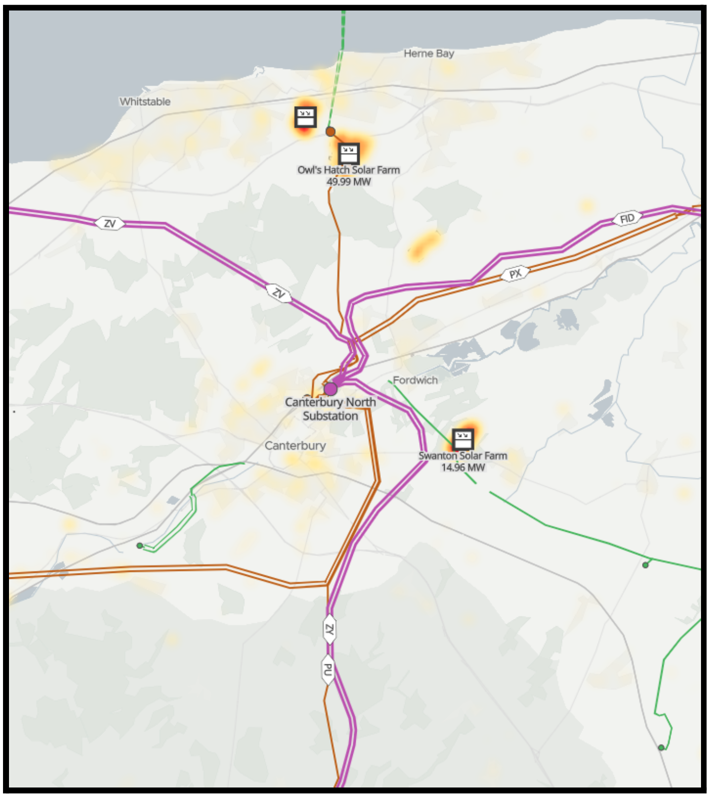


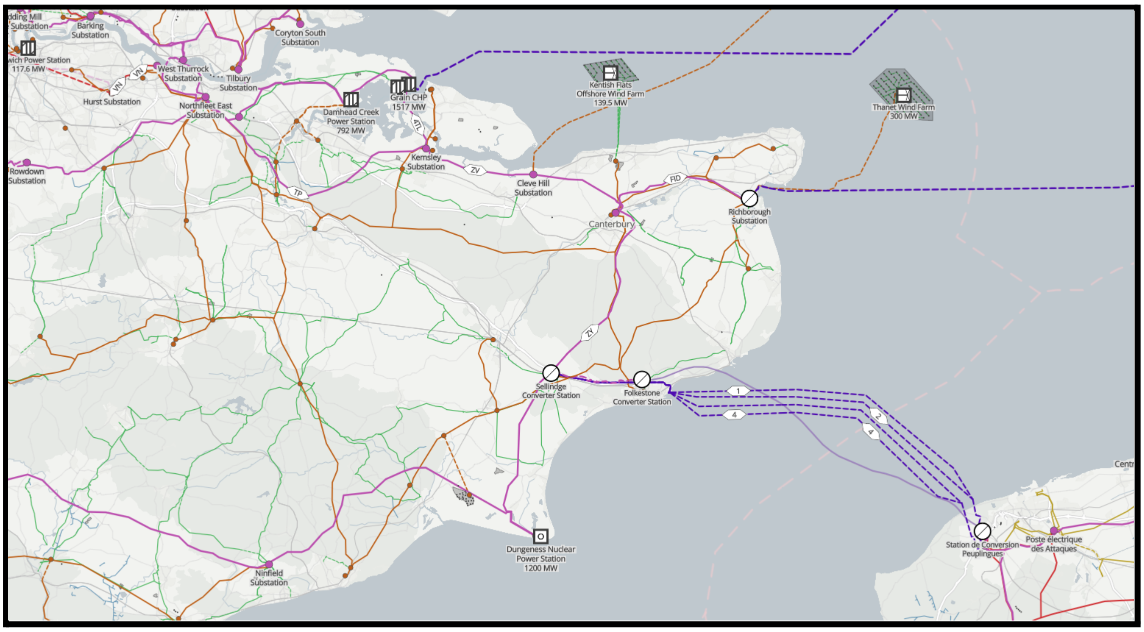
Figure 3: Map of Canterbury District power network with solar generation highlighted (Source: Open Infrastructure Map)



Canterbury power network comprises a major node for regional power systems. Canterbury power connectivity is part of an East Kent high voltage power ring connecting cross-Channel power cabling, the 140MW Kentish Flats and 300MW Thanet wind turbines, the Cleve Hill Substation which connects the 630MW London Array of wind turbines, and the connections to Dungeness nuclear power station. The power network is of strategic importance to the district, regional and national distribution; the system provides part of the electricity power routing for London.

The existing high-voltage cabling infrastructure traverses the district north-south and east-west, and provides significant potential for further connection of district and off-shore renewable energy generation.

Figure 4: Map of Kent power network with key power generation highlighted (Source: Open Infrastructure Map)



The electricity infrastructure in Canterbury district is therefore well-placed to respond to the challenge to increase renewable energy generation within this district to provide for district energy needs and contribute to the resilience of the national and regional energy system.

3. Projected district energy needs for net zero emissions

Three key sources of projections for the future energy requirements and generation in Canterbury district are provided by Kent County Council, National Grid and the Committee on Climate Change.

Anthesis SCATTER models

Kent County Council commissioned research and modelling from Anthesis as part of the BEIS project to provide regional and local projections for emissions reduction pathways to net zero emissions. The Anthesis work for Kent County Council provided a report, Kent & Medway Emissions Analysis and Pathways to Net Zero (December 2020), which sets out the routes to reducing energy requirements from fossil fuels and the attendant carbon emissions. The hierarchy of actions used by the Anthesis SCATTER models is based on an established supply-demand balance method in accordance with national strategies to reach net zero emissions: reducing the need for fossil-fuel energy; switching to electricity as the principal transmission of energy; decarbonising the electricity production and lastly offsetting any remaining carbon emissions.

The modelled pathways for renewable energy show the need to plan and implement very large growth in renewable energy production under all scenarios in order to meet national net zero emissions goals by 2050.

The Anthesis modelling focuses on renewable energy pathways using tried and tested zero-carbon technologies (wind turbines, solar photovoltaic and hydro-electric) to generate electricity. Hydrogen technologies may form part of the future energy systems and renewable or ‘green’ hydrogen must be generated from electricity and are therefore implicit within the projections. Nuclear, biomass and carbon-capture and storage models of low carbon energy are not included in the Anthesis projections; they are not currently deployable at scale in Canterbury district.

Figure 5: Hierarchy of interventions (Source: Kent & Medway Emissions Analysis and Pathways to Net Zero, December 2020)

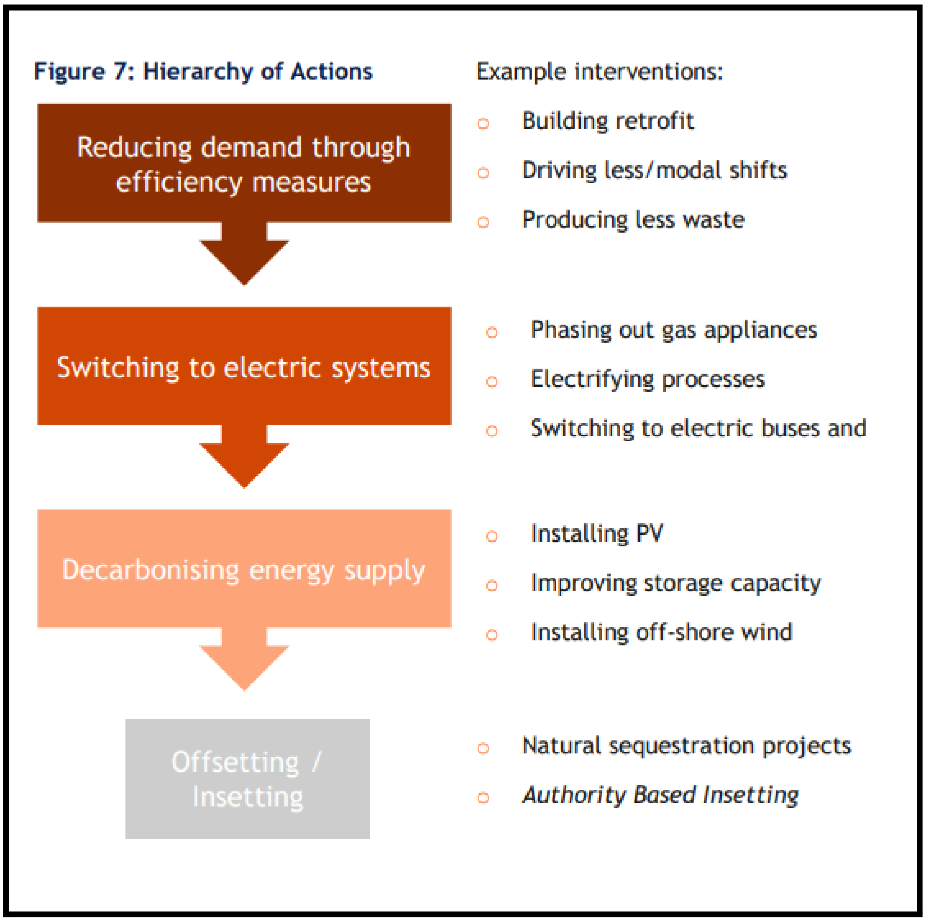
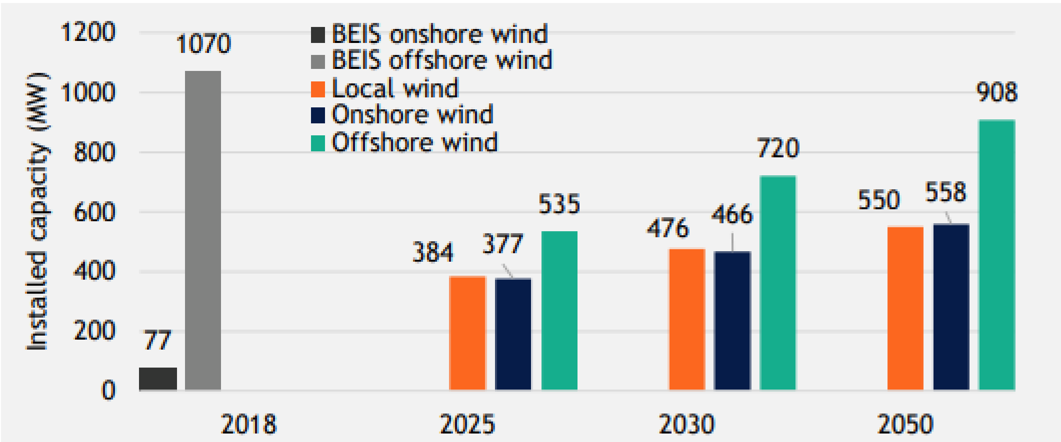


Figure 6: Modelled requirements for Kent and Medway new wind generation capacity to 2050 (Source: Kent & Medway Emissions Analysis and Pathways to Net Zero, December 2020)



The Anthesis projections require a large and rapid increase in electricity from wind power. Canterbury district has a high wind energy potential and with year-round generation, the largest share of the renewable energy mix is projected to be from wind power. Although wind energy potential has been identified as high potential for Canterbury district in previous local plans, the policies and goals in this area have not been sufficient to mobilise this sector within the district.

The new Local Plan will need to support onshore wind generation in order to meet carbon emissions reduction goals.

The potential for solar photovoltaic generation in Canterbury district is also high. The increasing annual sunshine provides a large energy yield that can be harnessed through a broad combination of rooftop solar on both domestic and commercial buildings, canopies on car parks, some open spaces and in agriculture that can provide co-benefits of shade and rainwater collection and some large-scale solar operations. The majority of current district solar generation originates from the four existing district solar parks.

Figure 7: Kent and Medway projected requirement for new solar generation to 2050 (Source: Kent & Medway Emissions Analysis and Pathways to Net Zero, December 2020)

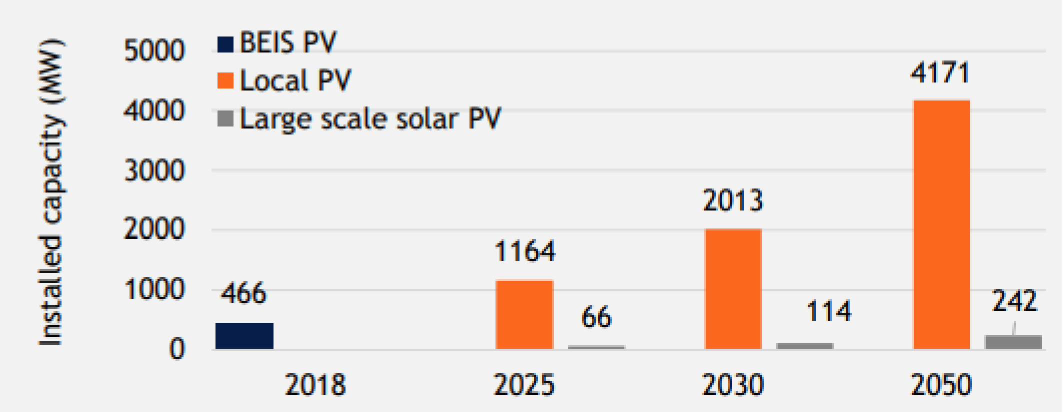


Figure 35: Modelled increase in PV capacity within Kent & Medway.

Table 1: Anthesis projected increases in renewable energy generation capacity for Canterbury district (Source: Kent & Medway Emissions Analysis and Pathways to Net Zero, December 2020, pro-rata by population (mid year 2019 statical summary))

Increase in MW installed renewable energy generation capacity from 2020 baseline	By 2025	By 2030	By 2050
Onshore wind - mix of small and large installations	68	83	99
Offshore wind	48	64	81
Solar PV - mix of domestic rooftop, commercial rooftop, canopies and large scale solar parks	109	189	393
Local hydro-electric power	4	5	5
Large scale hydro-electric power[1]	3	4	4
Total installed generation (MW)	231	345	581
Projected annual generation (GWh)	**430**	**595**	**862**

* Based on load factors 0.3114 for wind generation, 0.1 for solar PV, 0.35 for hydro generation

[1] Although the Anthesis model projects some large scale hydro-electric power at a regional level, this is more likely to be achieved on the larger county river systems e.g. the river Medway and its tributaries.

The ambitious projected annual generation of renewable energy in Canterbury district would achieve a renewable generation capacity of approximately 50% of 2019 district energy usage (2700GWh/y) by 2050 (578GWh/y in 2019 + projected new generation 862 GWh/y by 2050). Therefore In order to achieve district net zero emissions from energy by 2050 using renewable energy alone, a reduction in the total energy consumption of around 50% would also be required alongside the growth in renewable energy.

National Grid Future Energy Scenarios 2050

National Grid research has projected energy scenarios to net zero by 2050 and developed key policy recommendations for UK energy usage and generation (Future Energy Scenarios 2050, National Grid, July 2020).

National Grid concludes that 'Reaching net zero carbon emissions by 2050 is achievable. However, it requires immediate action across all key technologies and policy areas, and full engagement across society and end consumers.'

In order to meet the carbon reduction goals, 'at least 40GW of new capacity is connected to the electricity system in the next 10 years' including 'at least 3GW of wind and 1.4GW of solar need to be built every year from now until 2050'. This is required under all scenarios that succeed, regardless of other key energy system decisions such as the amount of nuclear and carbon capture and storage that are deployed.

Committee on Climate Change recommendations

The Committee on Climate Change performs the role of adviser to the UK Government on strategy and policy to address climate change. The policy recommendations for energy are summarised in the report to UK Government on the sixth carbon budget (December 2020):

> UK electricity production is zero carbon by 2035. Offshore wind becomes the backbone of the whole UK energy system, growing from the Prime Minister's promised 40GW in 2030 to 100GW or more by 2050. New uses for this clean electricity are found in transport, heating and industry, pushing up electricity demand by a half over the next 15 years, and doubling or even trebling demand by 2050. Low-carbon hydrogen scales-up to be almost as large, in 2050, as electricity production is today. Hydrogen is used as a shipping and transport fuel and in industry, and potentially in some buildings, as a replacement for natural gas for heating.

The detailed Committee on Climate Change analysis of Net Zero UK energy systems is presented in the Net Zero Technical Report (May 2019) sets out the national need for a doubling of renewable energy generation from 2019 to 2030 through enabling a large pipeline of onshore and offshore wind, and solar PV projects.

The Committee on Climate Change also recommends the rapid research and development of hydrogen systems and nuclear energy alongside the necessary maximisation of renewable energy. Of the options that are in development, green hydrogen, which is produced using renewable electricity and electrolysis - is the most suitable for Canterbury district. Green hydrogen is not an energy source in itself, but a means of transferring energy to power vehicles and to heat and power buildings; it requires renewable energy generation capacity to produce the hydrogen.

4. Canterbury district onshore wind potential

Canterbury district has a high potential for electricity generation from wind energy; onshore wind could provide at least 400GWh of renewable electricity for the district.

The AECOM renewable energy assessment for Kent 2012 states:

> 'The local authorities in Kent with significant apparent potential for commercial scale wind are Ashford, Canterbury, Maidstone, Dover, Shepway and Swale. These authorities – based on the regional resource assessment – could accommodate between 100 and 300 2.5MW turbines. Each of these turbines – using an 18% capacity factor in line with the South East Study assumptions - can produce 3942MWh per year. Assuming a typical electrical consumption for a dwelling of 5000kWh a single 2.5MW turbine could power 788 homes. Ashford has 40,000 homes so would require 51 2.5MW turbines to meet its total domestic electricity demand.'

Current CCC onshore wind power policy

What is the current policy and why isn't it enabling wind power in the district?

The current policy on onshore wind turbines:

> 'Action to reduce the Canterbury District's impact on climate change will include:[...]undertaking an assessment of the District to ascertain, and where appropriate, allocate suitable sites for wind energy development and wind turbines in either a Development Plan Document or a review of the Local Plan.'

However, onshore wind generation progress in the UK was severely hampered from 2016 to 2020 due to 'public veto' legislation. This has now been overturned (2020) and the development of onshore wind power generation is actively encouraged by UK Government.

Policy DBE2 Renewable Energy
'It should be noted that wind energy development will be assessed in accordance with the Written Ministerial Statement (HCWS42) and the briefing paper Planning for Onshore Wind (House of Commons, June 2015) until sites can be allocated and relevant policies developed in either a review of the Local Plan or a specific Development Plan Document.'

5. Canterbury district solar potential

Solar energy can be harnessed in different ways:

- Solar thermal where the solar radiation is used to heat water - most commonly domestic hot water and swimming pools
- Solar photovoltaic where solar radiation generates electricity.

Solar photovoltaic installations are most commonly in these configurations:

- Domestic roof installations in the range 2-12 kWp - single phase
- Commercial mid-size installation, roof, canopy or ground mounted - 12kWp - 100kWp - three phase
- Utility scale ground mounted solar installations - 1-100 MW - connected to major power lines through a substation

Domestic solar

In 2020, the installed domestic solar PV generation capacity in Canterbury District is 3-5% of the total potential.

Domestic solar PV generation is a tried and tested reliable source of renewable energy at domestic level. Solar thermal generation to heat hot water implementation rates are very low as the technology is more complicated to install and requires a hot water tank; hot water tanks have been removed from many properties in the switch to instant combi gas boilers.

Rooftop solar photovoltaic and thermal generation can be highly cost-effective in Canterbury district due to the high annual sunshine; for residents that use energy during the daytime (because they work at home, for example), the payback period can be as low as 4 years according to the Energy Saving Trust.

Kent and Medway Energy and Low Emissions Strategy (2020) prioritises the increase in domestic residential and commercial rooftop solar installations.

In order to help increase the rate of domestic solar installations at a rate to enable the district to meet net zero emissions targets, policy should make the installation as easy and cost-effective as possible.

Mid-size solar

Mid-size solar installations are typically in the range of 50kW and require 3-phase electricity supply. They are usually connected to an existing electricity supply and provide energy for commercial use such as an office building, factory or farm. Larger commercial buildings and spaces such as car parks are ideal for mid-size solar installations, especially where the generation is matched to commercial demand and the benefits of private wire and/or battery storage can be used.

Kent and Medway Energy and Low Emissions Strategy (2020) prioritises the increase in commercial rooftop solar installations.

In order to help increase the rate of domestic solar installations at a rate to enable the district to meet net zero emissions targets, policy should make the installation as easy and cost-effective as possible

Utility scale solar

Utility scale solar generation is connected directly to the grid and in the range 1-100s MW. Solar generation installations in the range of up to 50MW for individual sites do not require National Grid or UK Government specific approval and the majority of utility scale operations are in this range. After offshore wind generation, utility scale solar generation is the most significant contributor to the renewable energy proportion of UK energy supply.

Kent and Medway Energy and Low Emissions Strategy (2020) prioritises the increase in utility scale solar particularly where it is community-developed and integrated as part of smart local energy solutions or part of decentralisation of energy for developments.

Current policy DBE2 Renewable Energy

In determining applications for the development of renewable or micro-generation equipment (apart from wind energy development), the City Council will expect applicants to:
a. Avoid any significant adverse impacts (visual, noise and amenity impacts);
b. Have given weight to the environmental, social and economic benefits;
c. Have minimised the visual impacts by providing the optimum layout and design of the development including screening;
d. Ensure that the development will not have a significant adverse effect on the amenity of local residents;
e. Ensure that the installation would not have an adverse cumulative impact on the environment;
f. Show there is no adverse impact on heritage assets (Policy HE1);
g. Demonstrate that there is no significant impact on the landscape setting, habitats, biodiversity, wildlife or designations such as the AONB, AHLV, Ramsar, SACs or SPAs as outlined in Chapter 10;
h. Ensure protection of the best and most versatile agricultural land unless it is demonstrated that it is necessary and no alternative poor quality land is available.

6. Energy Innovation Zone

Energy Innovation Zones (EIZs) are designed to stimulate clean energy projects and to help with increasing productivity, technology development and progress to net zero emissions. They work to demonstrate new technologies and help to turn them into fully commercial propositions. This is particularly important for assisting with mobilising solutions to difficult to change parts of the energy system which include power for heavy vehicles and plant. An Energy Innovation Zone would set out area(s) of the district which are most suitable for co-locating new energy infrastructure including mid-size and utility scale solar and wind energy generation, green hydrogen and associated infrastructure such as refuelling, pipe networks and test facilities, battery storage and heat networks. The purpose of the zone(s) would be to prioritise and accelerate energy innovation work in the area and safeguard the benefits of co-location to maximise the opportunities and potential for prime energy areas to contribute to net zero emissions.

7. Renewable energy and ecological co-benefits and impacts

The co-benefits associated with the implementation of renewable energy projects are wide in scope and reach and consequently not always easy or simple to quantify. The primary benefit of reducing reliance on fossil fuels is the most straightforward to evaluate: carbon emissions associated with constructing the infrastructure and the reduction in carbon emissions through the replacement of fossil-fuel derived power with renewable energy form the basis of the life cycle analysis. However the extensive literature evaluating the benefits of renewable energy compared to fossil fuel alternatives demonstrates benefits that reach far beyond the carbon emissions alone.

IPCC life-cycle global warming potential of energy sources (2014):

Energy source	**Average global warming potential (median) gCO_{2eq}/kWh**
Onshore wind power	11
Nuclear	12
Offshore wind power	12
Solar PV (utility scale)	48
Solar PV (rooftop scale)	41
Hydro power	24
Gas power station	490

The evaluation of wider co-benefits of improved air quality, reduced impact from the extraction and distribution of fossil fuels, energy security and employment can also be included in large scale renewable energy projects.

There can also be significant benefits to natural systems from solar parks and onshore wind installations[2] which include:

- Increased biodiversity of plant, insect and animal species
- Reduced chemical run-off and soil erosion
- Improved water management and flood control
- Reduced land carbon and methane emissions

According to BSG Ecology, which is working on a large scale assessment of the long-term ecological impacts and benefits of renewable energy land use, for utility-scale solar parks and wind generation sites, 70-95% of the ground remains unoccupied, offering the chance to enhance biodiversity through good management. The 20-year lifespan of installations with limited disturbance benefits biodiversity opportunities. Some key practices that are encouraged include: boundary features such as hedgerows, dry stone walls, field margins, planting pollen and nectar strips, security fencing with climbers such as honeysuckle and gaps at the base for wildlife, encouraging or sowing wildflower meadow, controlled sheep grazing between panels, nest boxes, hibernacula (hibernation zones) and wood piles.

The application of biodiversity net gain principles will be mandatory for new developments and therefore ensure that these co-benefits are designed into renewable energy installations.

Utility scale solar installation impacts

Rooftop solar installations within the built environment are widely regarded as having no negative impact on the ecosystem. For large solar installations at utility scale (solar parks), alongside the positive environmental co-benefits of low carbon energy, there are potential negative impacts which must also be carefully considered as part of any projects. Although the impacts on wildlife and biodiversity can be very positive through good design and management, there is a potential for negative impacts that can include reflectivity being confused as water by birds. Best design practice needs to be employed to ensure that the general and site specific issues are successfully addressed.

There are also human perception impacts based on the relationship with and character of the landscape effects from large scale solar installations. These impacts need to be carefully considered as part of projects. However it is essential to compare the impacts of delaying renewable energy projects on the wider environment and where energy production is required instead from alternative, less sustainable sources.

The evidence shows that utility scale solar generation is a viable and reliable source of energy with many co-benefits and must play a major part in the district's energy systems.

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[2] Realising co-benefits for natural capital and ecosystem services from solar parks: A co-developed, evidence-based approach, *Renewable and Sustainable Energy Reviews, Volume 125*, June 2020

Onshore wind energy environmental impacts

The ecosystem positive impacts of onshore wind power are high: wind turbines allow ground level land use for agriculture, natural habitats and solar generation. There are two key potential negative impacts that require consideration in the siting and design of onshore wind generation: noise and impacts on birds.

Noise impacts must be assessed and minimised through the site selection and turbine design. Typically a guidance minimum separation distance of 800m from turbines to the nearest dwelling is considered (House of Commons Library, Planning for onshore wind, 2016) although less is appropriate if there is community support.

Detailed studies of the effects of wind generation on birds in the UK and Netherlands has shown the issue to be much smaller than earlier estimates and concerns (Klim Vindmøllepark - Monitering af fuglekollisioner år 1 og år 3 (2016/2017 og 2018/2019), Carbon Trust, 2018).

The evidence shows that onshore wind is a viable and reliable source of energy for the district with many co-benefits and must play a major part in the district's energy systems.

8. Local Plan 2040 Policy Options

National planning policy provides guidance on how the increase in renewable energy should be facilitated within local plans. The National Planning Policy Framework relevant guidance on renewable energy projects is as follows:

> 151. To help increase the use and supply of renewable and low carbon energy and heat, plans should:
>
> a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);
> b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
> c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.
>
> 152. Local planning authorities should support community-led initiatives for renewable and low carbon energy, including developments outside areas identified in local plans or other strategic policies that are being taken forward through neighbourhood planning.
>
> 153. In determining planning applications, local planning authorities should expect new development to:

a) comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
b) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

154. When determining planning applications for renewable and low carbon development, local planning authorities should:

a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and
b) approve the application if its impacts are (or can be made) acceptable

Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.'

The National Planning Policy Framework is guidance and allows for the discretion of the local planning authority to form suitable policy to meet local, regional and national objectives.

Based on the evidence, potential policy options are therefore as follows:

Issue	**Policy option**	**Progress to net zero carbon emissions**	**Other advantages**	**Disadvantages**
	Do nothing (continue with current policies)	Unlikely to be met based on current implementation rates		The district is likely to fall behind in renewable energy generation
Rate of domestic solar installation needs maximising	Positively identify areas where solar PV is permitted development e.g. everywhere except Conservation Areas	This would assist with meeting energy system decarbonisation targets and save costs for solar installations.	Would be a strong signifier of collective work to reduce emissions. Would help remobilise the solar PV market for local installers.	The restrictions on rooftop solar in conservation areas is hampering renewable energy progress and limiting access to low carbon energy to many district residents and businesses

Issue	Policy option	Progress to net zero carbon emissions	Other advantages	Disadvantages
Rate of domestic solar installation needs maximising	Expand permitted development rights to include solar PV in all district areas (including Conservation Areas) and building types	This would do the maximum to assist with meeting energy system decarbonisation targets for existing buildings.	Would be a very strong signifier of collective work to reduce emissions. Would help remobilise the solar PV market for local installers.	Some people have strong opinions on aesthetic considerations.
Rate of utility scale renewable generation needs maximising	Identify suitable district land areas for utility scale scale PV and onshore wind	This would have a major impact in assisting the district to reach net zero emissions targets.	Would help landowners and developers to identify and propose projects.	May limit potential projects that could fit well even in Areas of Outstanding Natural Beauty.
New and emerging technology including green hydrogen and battery storage is missing from current policies	Identify suitable areas for energy innovation zones - where renewable energy infrastructure projects will be prioritised.	Would follow other Energy Innovation Zone examples in the UK e.g. Midlands and help mobilise green hydrogen and battery storage alongside renewable energy.	This would help attract investment to the designated areas.	
Lack of incentives to prioritise renewable energy proposals	Set targets for renewable energy generation with discounted processing fees for projects delivering within the target window	There are currently no targets for renewable generation at a sub-national level; setting targets and providing planning incentives would help projects proceed.		This proposal would require additional local planning authority administration, monitoring and transparency.

Appendix 1 - Example wind energy development policy

Wind Energy Developments (Strategic Policy)
Applications for wind energy developments involving one or more wind turbines will be encouraged and permitted where:

A) medium to large-scale proposals are directed toward areas with the highest relative landscape capacity within the Area of Search for Wind Energy Developments as shown on the Policies Map;

B) small to medium scale wind power schemes are directed toward employment locations which are sited away from the district areas of outstanding natural beauty;

C) proposals satisfy the requirements of other relevant Local Plan policies;

D) development would not lead to unacceptable coalescence of areas dominated by wind energy development;

E) development achieves a net gain in biodiversity and has no unacceptable adverse impacts, including cumulative impacts, on the historic, built, natural environment and ecology;

F) any proposed turbine would be located at a sufficient distance from any residential property to demonstrate that it would not cause unacceptable effects on amenity, living conditions, or be overbearing;

G) any proposed turbine would be sited away from a susceptible dwelling house, community facility or workplace, so as not to cause shadow flicker;

H) any adverse impacts on radar systems, TV reception, communications links, or telecommunications systems are capable of being acceptably mitigated;

I) any proposed turbine would be setback from any highway boundary, railway line, waterway, public footpath or bridleway by a sufficient distance to be safe; and

J) following community engagement, it can be demonstrated that the planning impacts identified by affected local communities have been fully addressed and therefore the proposal has their backing

Appendix 2 - Reference information

The Energy Savings Trust provides a tool for home owners to investigate installing solar electricity generation on their property:

https://www.pvfitcalculator.energysavingtrust.org.uk/
Publicising this and the solar group purchasing schemes may be helpful in informing residents on the potential for solar PV fo their homes.

UK Government Planning practice guidance for renewable and low carbon energy (2013) needs updating but is still relevant

Planning guidance for the development of large scale ground mounted solar PV systems from BREEAM

Examples of energy innovation zones in the UK