

Renewable Energy FACTSHEET

The UK is rapidly transitioning to a clean energy system and is already half way to meeting its greenhouse gas emissions reduction target of 80% by 2050. In 2016 UK coal production and consumption fell to levels not seen since the start of the industrial revolution. The investment needed to complete this transition does not compare with the very real risk – and costs – of not taking action.

One of the most effective ways for the creative sector to drive the transition to a low-carbon economy is to use renewable energy.



RENEWABLE ENERGY

Drives job creation, delivers energy security,
reduces **climate change**

- ✓ New renewable energy projects create 10 times more green jobs than similar-sized fossil fuel investments
- ✓ Domestic renewable energy sourced in the UK reduces reliance on importing energy from overseas
- ✓ Renewable energy produces no or low greenhouse gas emissions

**To drive the transition to a renewably-powered creative sector
choose an energy supplier which:**

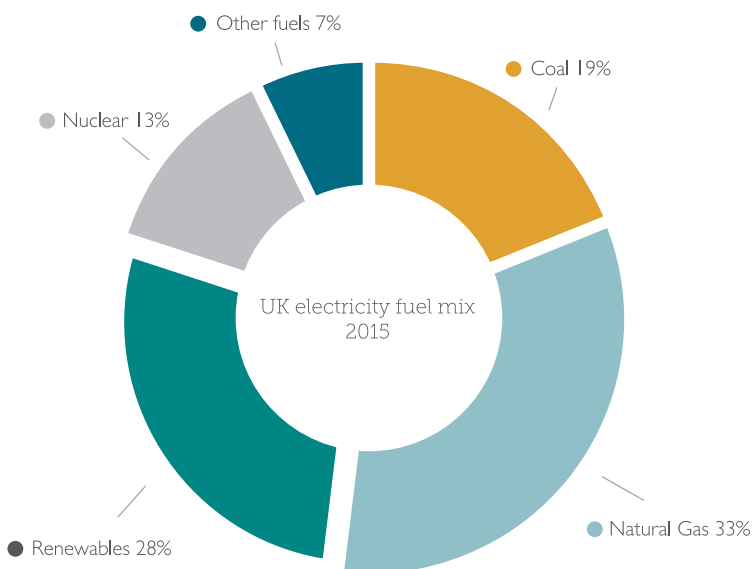
- Sources 100% of its electricity from renewable energy
- Supports large and small scale energy generation
- Is fully transparent on its renewable energy sourcing
- Is not importing renewable fuels
- Is not competing with food production

Questions to ask your energy supplier...

- What is the electricity fuel mix?
- Does the green tariff specify the renewable energy sources used?
- Is all electricity used by customers on a green tariff matched by renewable energy?
- Have they met their Renewables Obligation?
- Do they have Renewable Energy Guarantees of Origin (REGO) certificates?
- Is the renewable energy sourced in the UK?
- Do they purchase electricity from independent generators?
- Does the tariff offer additional environmental and social benefits?
- What reporting do they provide customers?
- Are they Carbon Trust certified as a 100% renewable electricity supplier?

Renewable Energy Suppliers	% Renewable	% Hydro	% Wind	% Solar	% Anaerobic Digestion	% Biomass	% Thermal
Bulb	100	85	0	0	15	0	0
Ecotricity	100	20	80	0	0	0	0
Good Energy	100	4	53	24	19	0	0
Green Star Energy	100	Yes	Yes	n/a	n/a	n/a	n/a
Octopus Energy	97	n/a	n/a	Yes	Yes	n/a	n/a
Opus Energy	96	Yes	Yes	Yes	n/a	Yes	n/a
SmartestEnergy	93	34.8	32.3	3.9	7	2.8	7.3
Solarplicity	100	29	27	13	31	0	0

The figures in this table are taken from the supplier's latest fuel mix disclosures (updated August 2017)



Energy Supplier Obligations

- Electricity suppliers are obligated to source an amount of renewable energy per megawatt generated.
- They are also obligated to disclose their fuel mix annually, allowing you to choose a provider based on your preference of energy source.

FACT

A quarter of UK electricity is generated from renewable energy



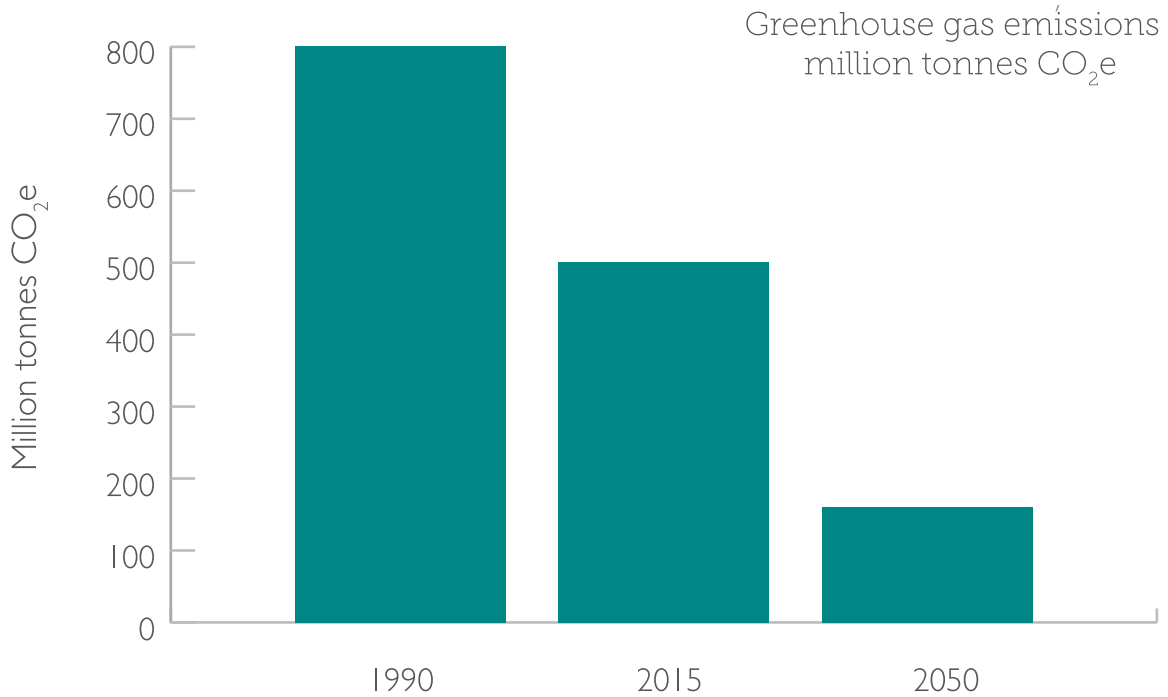
Green Tariffs

- UK energy suppliers are legally obligated to source a portion of their electricity from renewable energy sources under the Renewables Obligation. Customers should be cautious of suppliers who sell such green electricity as a premium 'green energy' tariff and do not source additional renewable electricity supplies.
- In addition to selling the green electricity to the consumer, suppliers may sell Renewable Obligations Certificates to another energy supplier who has failed to meet their quota, rather than 'retiring' the certificate from the marketplace.

Ensure when buying a **green tariff** that your energy supplier is **matching your usage** and retiring the associated **Renewables Obligation Certificates (ROCs)**

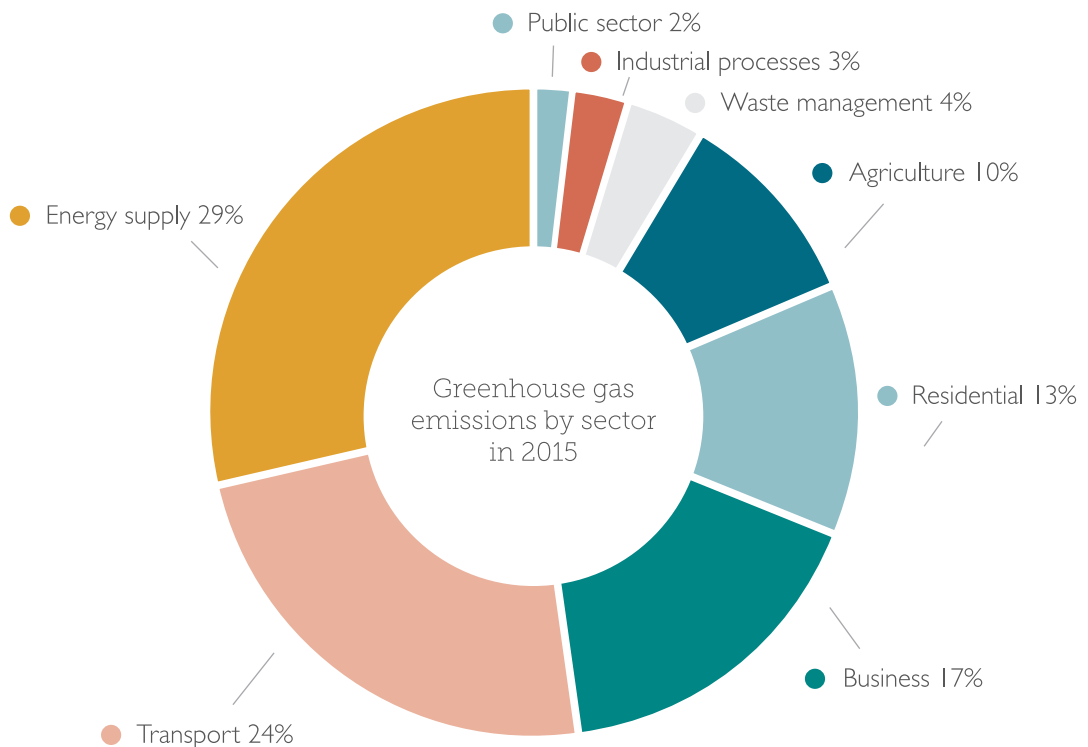
UK Greenhouse Gas Emissions

The UK is about half-way towards its climate change target to reduce greenhouse gas emissions by 80% by 2050. It is uncertain if the UK will meet its target to source 15% of all energy (electricity, heating and transport) from renewable energy sources by 2020.



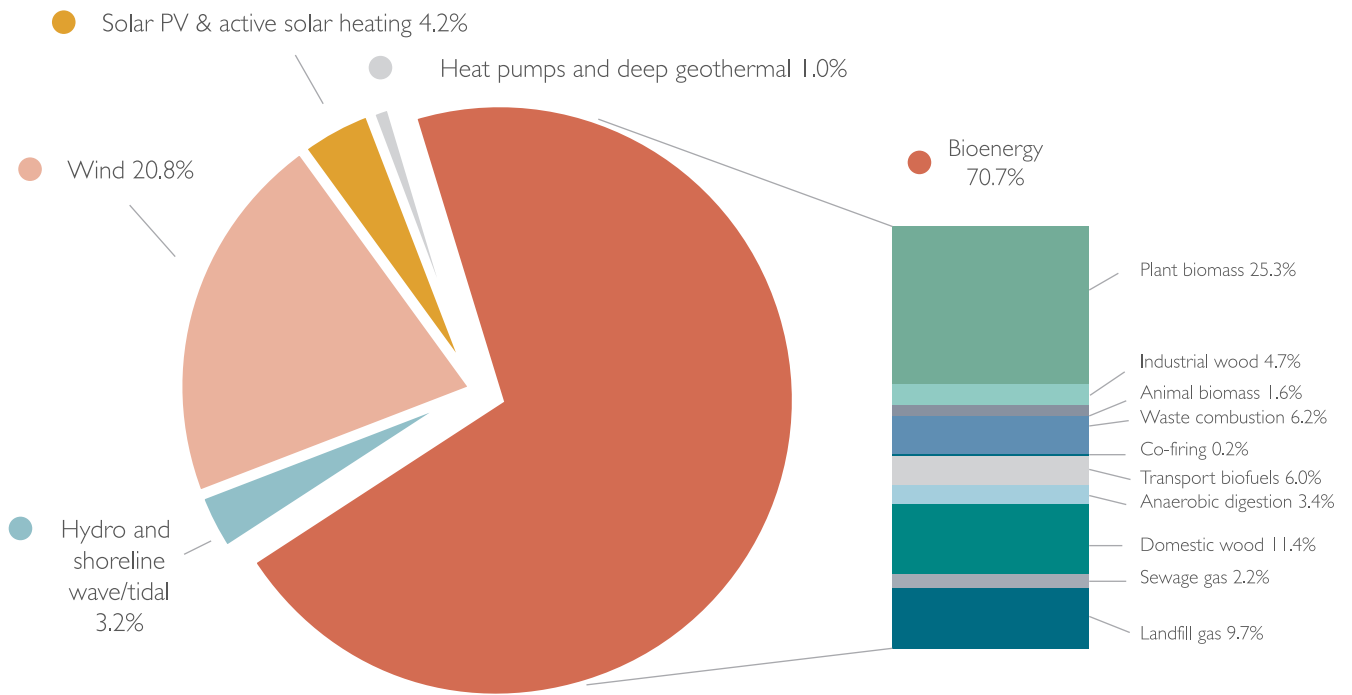
FACT

Renewable energy procurement and on-site generation together with **energy efficiency measures** offer one of the easiest and most effective means to reduce greenhouse gas emissions



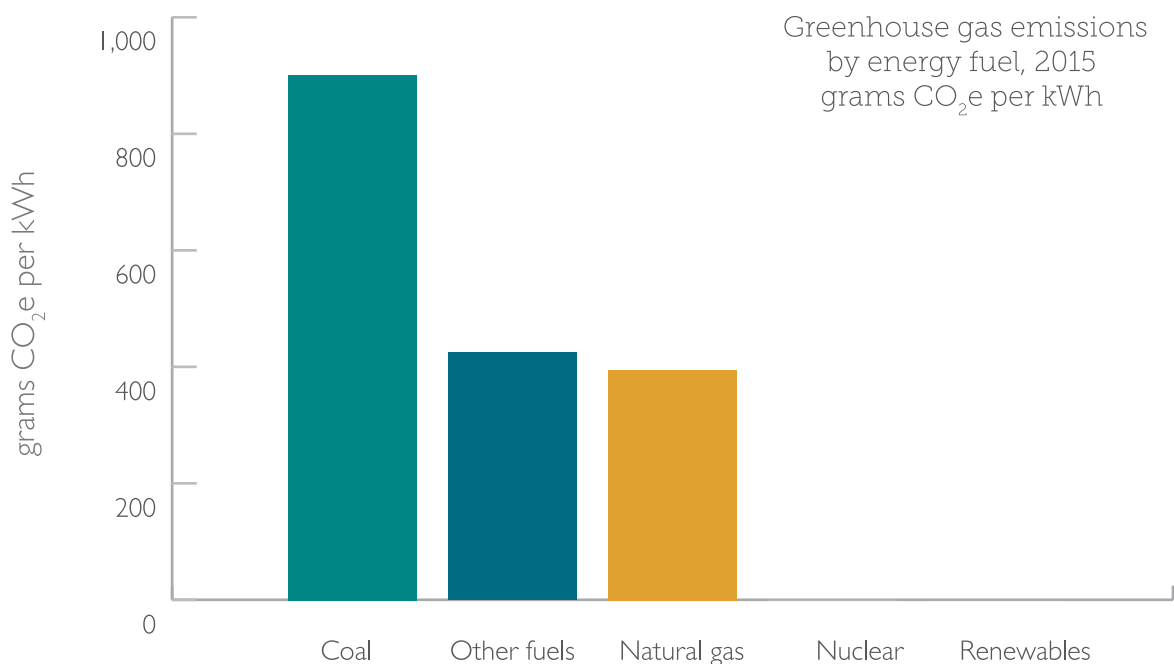
UK Renewable Energy Mix By Type

Renewable energy fuel use
2015

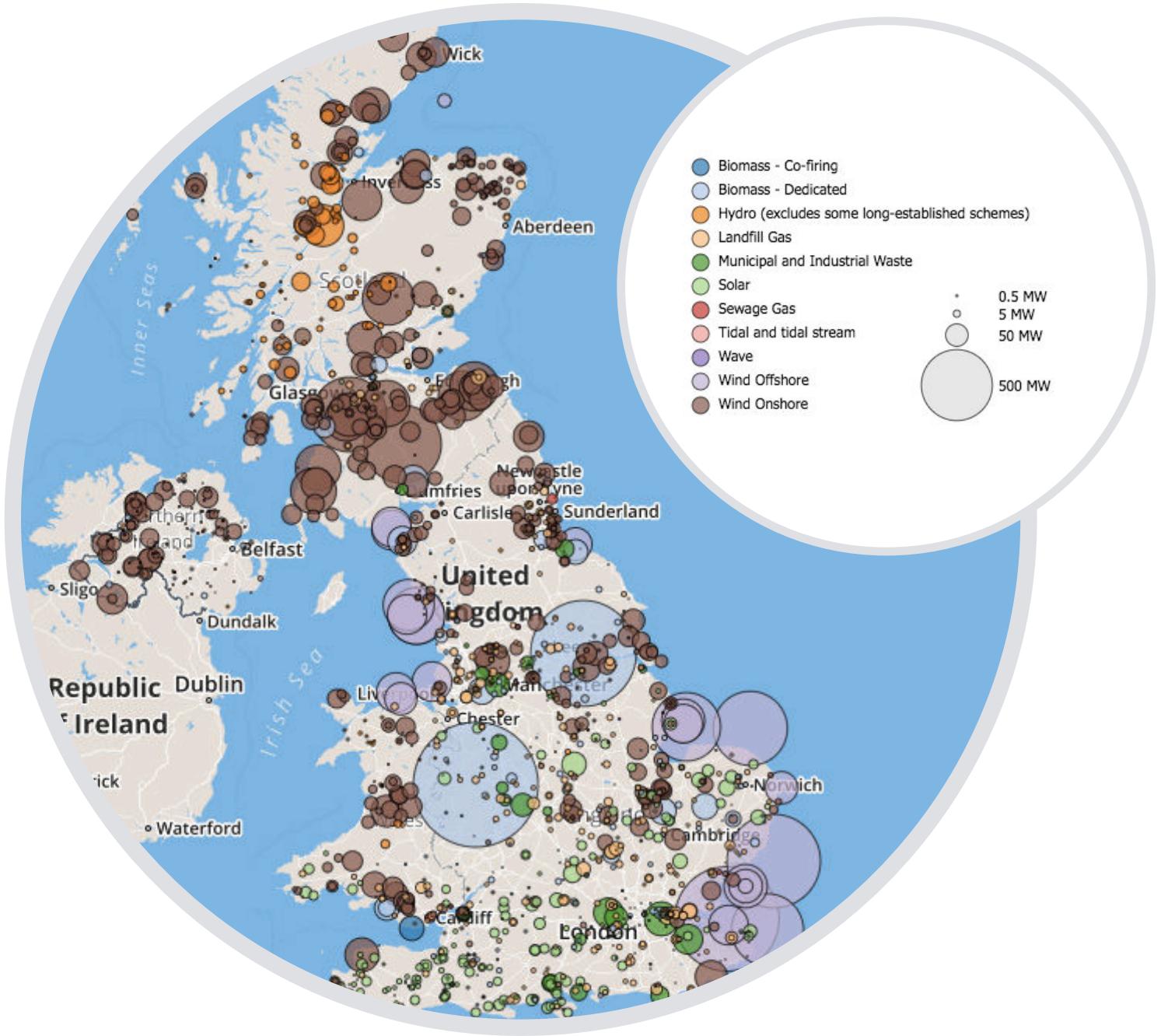


FACT

Non-hydro renewable energy was the fastest source of energy growth in 2016 rising 14%



JOIN the renewable energy revolution **NOW**



Map of UK Renewables



Renewable Energy Sources

Renewable energy sources are growing rapidly making renewable energy cheaper and more accessible than ever before. Its availability and scale depends on location, transmission lines and investment. This table presents the pros and cons of the most common sources of renewable energy.

Renewable Energy Source	Pros	Cons
<p>Anaerobic digestion Organic matter is broken down to produce biogas and bio-fertilisers (e.g. food waste, sewage sludge, crops, and agricultural residuals, etc.)</p>	<ul style="list-style-type: none"> • Zero air or water pollution • Consistent power source due to consistency of waste • Makes use of food waste recycling, farm and sewage waste • Improves water quality 	<ul style="list-style-type: none"> • Expensive & time-consuming process • Currently cost-effective for large scale facilities
<p>Biomass Material from plants, trees and other organic sources is burned to produce power (e.g. wood waste, oil crops, rapeseed, willow and poplar, etc.)</p>	<ul style="list-style-type: none"> • Carbon neutral renewable energy source • Range of feedstock options for producing energy • Can produce cleaner energy than fossil fuels • Make use of waste products 	<ul style="list-style-type: none"> • Expensive due to need to harvest, store and burn fuels • Requires extensive land, limiting UK sourced biomass • Competes with food production and other land uses • Requires energy to produce the fuels • Produces local air pollution
<p>Geothermal Water pumped through hot rocks underground is used to heat buildings or generate electricity through steam</p>	<ul style="list-style-type: none"> • Zero air or water pollution • Zero air or water pollution source with an unlimited supply of energy • Stable and predictable 	<ul style="list-style-type: none"> • High upfront costs for geothermal infrastructure • Developments limited to selected areas • Produces sulphur dioxide and silica emissions • Potential issues with surface instability and pipe corrosions
<p>Hydroelectric Power Water flowing through turbines generates electricity</p>	<ul style="list-style-type: none"> • Zero air or water pollution • Abundant supply of energy • Easy storage in reservoirs • Recreational benefits associated with dams 	<ul style="list-style-type: none"> • High upfront costs to build the dam infrastructure • Restricted to certain locations • Dams can cause changes to watershed • Environmental problems include soil erosion and habitat loss for species • Affecting residential settlement areas
<p>Offshore Wind Turbines located out at sea convert the wind's kinetic energy into electricity</p>	<ul style="list-style-type: none"> • Zero air or water pollution • Greater space available for large scale farms • Greater wind supply reduces intermittency issues • Low aesthetic impacts compared to onshore wind 	<ul style="list-style-type: none"> • More expensive than onshore wind to develop • Shallow water requirements make developments limited to certain areas • Remote areas make grid connectivity a challenge
<p>Onshore Wind Turbines located on land convert the wind's kinetic energy into electricity</p>	<ul style="list-style-type: none"> • Zero air or water pollution • One of the most affordable renewable energy sources • Limited maintenance and inexpensive once built • Generates income for landowners 	<ul style="list-style-type: none"> • Intermittent and often location dependent • Generate noise pollution and have aesthetic impact • Potential threat to local wildlife

FACT

2016 saw global CO₂e levels flatline for the third year in a row, while the economy grew 3.1%

Renewable Energy Source

Solar

Solar cells are used to capture and convert sunlight into electricity (photo-voltaic) or hot water (solar thermal)

Pros

- Zero air or water pollution
- Unlimited supply of sunlight
- Low maintenance costs and technology is improving rapidly
- Can be mounted onto roof spaces
- Can power remote areas lacking grid connections

Cons

- High upfront costs if buying the PV panels for onsite generation
- Requires extensive space for electricity generation
- Reliant on daytime sunlight and correct alignment
- Energy storage development will be necessary to fulfil full potential of PV
- Potential aesthetic impacts

Tidal Power

Converts energy obtained through tides into electricity

- Zero air or water pollution
- Abundant supply of clean, reliable and resilient energy which requires no fuel
- Low maintenance costs once completed
- Tides are more predictable than wind or direct sunlight
- Can act as a storm barrier

- Expensive to build
- Very location specific which favours remote areas
- Impacts the tidal level of surround area impacting hydrology, ocean salinity and wildlife
- Can reduce access to open water

Wave Energy

Uses energy from ocean waves to generate electricity, often using Wave Energy Convertors

- Zero air or water pollution
- Reliable zero-carbon energy supply
- Large potential and very area efficient
- Low operational costs

- Expensive installation costs
- Remote locations make connectivity to the grid difficult
- Potential breakdown in remote areas due to harsh weather conditions
- Unknown effects to natural ecosystems

If you need assistance with due diligence of your energy supplier we can help

SOURCES

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