Britain's clean energy system achieves historic milestone in 2019

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- Britain is set to achieve a historic electricity generation milestone this year, with more electricity generated from zero carbon sources than fossil fuels.
- Innovative approaches such as connecting Britain's electricity grid to its neighbours via under water cables called interconnectors, including the new North Sea Link plugging Britain into Norway's hydro network, will cut carbon emissions and accelerate Britain's response to climate change.
- New research from National Grid reveals key drivers of increased "climate anxiety" among the British public.

This year, for the first time since the Industrial Revolution, more of Britain's electricity production will come from zero carbon energy sources, than fossil fuels. According to National Grid, annual power generation data from the last decade shows Britain's reliance on cleaner energy sources (wind, solar, nuclear, hydro power and storage) will overtake fossil fuels (coal and gas fired power generation) this year[i]. This marks a historic achievement in Britain's journey towards the UK Government's target of net zero emissions by 2050, demonstrating leadership in addressing a global challenge.

Reaching this landmark tipping point in Britain's clean electricity generation has been achieved following a decade-long revolution in our power sources:

Electricity generation sources	Fossil fuels (coal and gas)	Zero carbon (wind, solar, nuclear, hydro and storage)	Coal	Wind
2009 total	75.6%	22.8%	30.4%	1.3%
Jan – May 2019	46.6%	47.9%	2.5% (-93%)	18.8%

N.B. Percentages in the table above only relate to the energy sources cited (fossil fuels: coal, gas; zero carbon: wind, solar, nuclear, hydro and storage). Contributions from biomass, are not represented as it is neither zero carbon nor fossil fuel. Contributions from imports are included in 2019 data.

In May, Britain clocked up its first coal free fortnight and generated record levels of solar power for two consecutive days, powering more than a quarter of the country's daily electricity consumption.

John Pettigrew, CEO of National Grid, said: *"The incredible progress that Britain has made in the past ten years means we can now say 2019 will be the year net zero power beats fossil fuel fired generation for the first time. Having reached this landmark tipping point, the question is what are we doing today to get to net zero as quickly as possible?*

We take our responsibility to run the UK's electricity and gas energy systems, in accordance with our licence obligations, extremely seriously. We seek to maintain the

integrity of these systems while keeping energy costs down for UK homes and businesses. But as we look to the future we are proud to champion world-leading feats of British engineering as we move to a net zero power grid.

The interconnectors that connect our electricity grid into Norway's hydro power are part of this story, as is having the know-how to bring renewable generation onstream to complement conventional sources of generating power. This will help accelerate our progress towards delivering cleaner, greener energy for Britain's homes, our travel and our work as quickly as possible."

Britain's energy system is in the midst of a rapid and complex transformation, and National Grid is playing a key role in that historic change. The continued move to a clean power system will require significant upgrades to the transmission network, and National Grid is investing around £1.3bn each year to support this transition. Huge strides are also being made in areas such as carbon capture and storage and investing over £2bn in new interconnector projects. 2019 marks a turning point. Several significant achievements have helped zero carbon beat fossil fuels so far this year, including the fact that 64.5 per cent of electricity imported to Britain through under water cables, called interconnectors, has come from zero carbon sources.

But as Britain powers towards a new era of clean energy, public concern about climate change is at an all-time high[ii]. New research commissioned by National Grid[iii] found that "climate anxiety" is exacerbated by a perceived lack of urgency around addressing the problem and the impact this will have on future generations. Nearly seven out of ten (69 per cent) of Brits who are concerned about climate change said it was because they believe it's not being addressed urgently enough. Unaddressed, over a third (38 per cent) of young people said their concerns about climate change would drive them to join a protest, and nearly a fifth (18 per cent) of 18-24 year olds said they are prepared to skip school or work to do this.

The research also identified a demand for clearer information on what action is being taken to reduce emissions. Nearly three in five (56 per cent) Brits worried about climate change stated that more information from government and businesses about what action is being taken would help address their concerns, and almost half (49 per cent) would like regular reporting on Britain's progress in tackling climate change.In response, National Grid is publishing data that sets out Britain's transition to a cleaner energy mix in ways that reach a wider audience through a new website: www.nationalgridcleanenergy.com.

By 2030, National Grid will have at least six interconnectors operating in Britain, through which 90 per cent of electricity imported will be from zero carbon sources[iv].

Even sooner, by 2025, National Grid's interconnectors will provide enough energy to power eight million homes via zero carbon sources. This network of European sub-sea, clean energy super-highways will help to reduce Britain's carbon emissions from the power sector by approximately 17 per cent (6.0 million tonnes) by 2030 – accelerating our journey to net zero.

National Grid's fifth under water electricity cable, the North Sea Link, will plug British homes into Norway's biggest hydro-dam – known as Europe's green battery – and one hundred per cent of the electricity travelling through it will be from zero carbon sources. The world's longest interconnector at 720km is being painstakingly laid between Blyth in Northumberland and the Blasjo reservoir in Kvilldal, where the biggest hydro power plant in Northern Europe sits amongst Norway's fjords. When the team of hundreds of engineers from National Grid and Statnett, the operator of Norway's power grid complete construction in 2021, the interconnector will enable both countries to share zero carbon electricity more efficiently, accelerating Britain and Norway's progress towards a net zero emissions target.

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Contact for media information only:

For media inquiries, please contact

Gemma Stokes National Grid 07974 198333
Sara Revell National Grid (Tuesday to Thursday) 07811768024
Or Neil Daugherty Teneo for National Grid (acting head of media) on 07989 955515

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Notes for editors

[i] Electricity generation data from January 2009 to May 2019, comparing fossil fuels (gas + coal) vs zero carbon sources (wind, solar, nuclear, hydro + storage). Imports via interconnectors classified using generation mix in connected country.

[ii] BEIS public attitudes tracker, March 2019: 80% of the public are concerned or very concerned about climate change.

[iii] All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 2,038 adults of which 1,521 are concerned about climate change. Fieldwork was undertaken between 10th and 11th June 2019. The survey was carried out online. The figures have been weighted and are representative of all GB adults (aged 18+).

[iv] National Grid analysis of UK and European electricity markets.

Notes to Editors:

National Grid is pivotal to the energy systems in the UK and the north eastern United States. We aim to serve customers well and efficiently, supporting the communities in which we operate and making possible the energy systems of the future.

National Grid in the UK:

- We own and operate the electricity transmission network in England and Wales, with day-to-day responsibility for balancing supply and demand. We also operate, but do not own, the Scottish networks. Our networks comprise approximately 7,200 kilometres (4,474 miles) of overhead line, 1,500 kilometres (932 miles) of underground cable and 342 substations.
- We own and operate the gas National Transmission System in Great Britain, with day-to-day responsibility for balancing supply and demand. Our network comprises approximately 7,660 kilometres (4,760 miles) of high-pressure pipe and 618 above-ground installations.
- As Great Britain's System Operator (SO) we make sure gas and electricity is transported safely and efficiently from where it is produced to where it is consumed. From April 2019, Electricity System Operator (ESO) is a new standalone business within National Grid, legally separate from all other parts of the National Grid Group. This will provide the right environment to deliver a balanced and impartial ESO that can realise real benefits for consumers as we transition to a more decentralised, decarbonised electricity system.

- Other UK activities mainly relate to businesses operating in competitive markets outside of our core regulated businesses; including interconnectors, gas metering activities and a liquefied natural gas (LNG) importation terminal – all of which are now part of National Grid Ventures. National Grid Property is responsible for the management, clean-up and disposal of surplus sites in the UK. Most of these are former gas works.

Find out more about the energy challenge and how National Grid is helping find solutions to some of the challenges we face at https://www.nationalgrid.com/group/news