

HOW DO WE PUT THE UK ON THE FASTEST PATH TO ZERO CARBON ENERGY? (AND BOOST THE ECONOMY WHILE WE'RE AT IT)

FOUR TRANSFORMATIVE GOALS – DELIVERED IN 30 RECOMMENDATIONS

We need to act fast. If we begin implementing these goals immediately, we'll be on track with what climate science says is needed: delivering a 77% reduction in energy emissions by 2030 compared to 2010, much more than the 45% climate scientists (IPCC) say is needed globally, making the UK the world's climate leader. If implementation goes very well by the mid 2020's the UK could even be on track for a zero-carbon energy system some time in the 2030's. Either way, if this action does not begin right now, zero-carbon energy will remain a pipe dream for decades to come.

GOAL 1: STOP WASTING ENERGY



UPGRADING ALMOST
27 MILLION
HOMES BY **2030**

As well as upgrading almost all of the UK's homes, we must upgrade every public, commercial and industrial building. To upgrade, we must install energy savings measures like insulation and double-glazing, focusing first on damp homes and areas with fuel poverty.

Reintroduce a zero-carbon buildings standard for all new buildings from 2020

RESULT

A reduction in total building heat by 20% and electricity by 11%, in the UK.

GOAL 2: DECARBONISE HEAT

Quick-wins implemented wherever possible, covering 22% of heat demand:

- Maximize heat networks in dense urban areas.
- All organic-waste used for bio-methane injected into gas grid.
- Solar hot water where sensible

Begin electrifying heat: Minimum of 8 million high efficiency heat pumps installed in homes and buildings by 2030, supplying 22% of UK heat.



INSTALLATION OF
8 MILLION
HEAT PUMPS

Determine role of cutting edge technologies:

- Investment and trialing of renewable-hydrogen for heating and hybrid-heat pumps in early-mid 2020's
- Implement appropriately based on learnings.

RESULT

There will be a ten-fold increase from today to reach nearly 50% low carbon heat by 2030.

GOAL 3: DECARBONISE ELECTRICITY

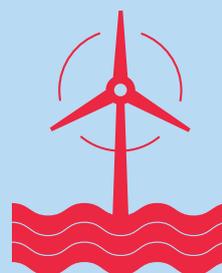
Huge and immediate expansion in established renewable electricity technologies:

- **Off-shore wind:** The UK has the best wind resource in the world. We must install 7,000 off-shore wind turbines, each bigger than the London Eye, a seven-fold increase on today.
- **On-shore wind:** The wind ban should be removed and capacity doubled to 30GW, which equates to 2,000 more turbines.
- **Solar power:** Enough solar panels to cover 22,000 football pitches must be installed, tripling the current UK capacity.

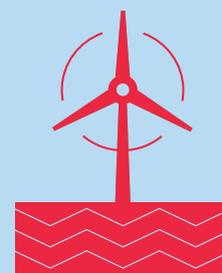
Investment in and trialing of **marine energy**, **carbon capture** and **sequestration (CCS)** and **renewable** or **low-carbon hydrogen for energy storage**, so that by the late 2020s these emerging technologies can be deployed to the appropriate scale by 2030.

RESULT

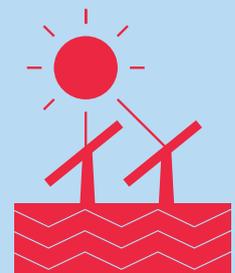
A total of almost 90% renewable and zero-carbon electricity by 2030.



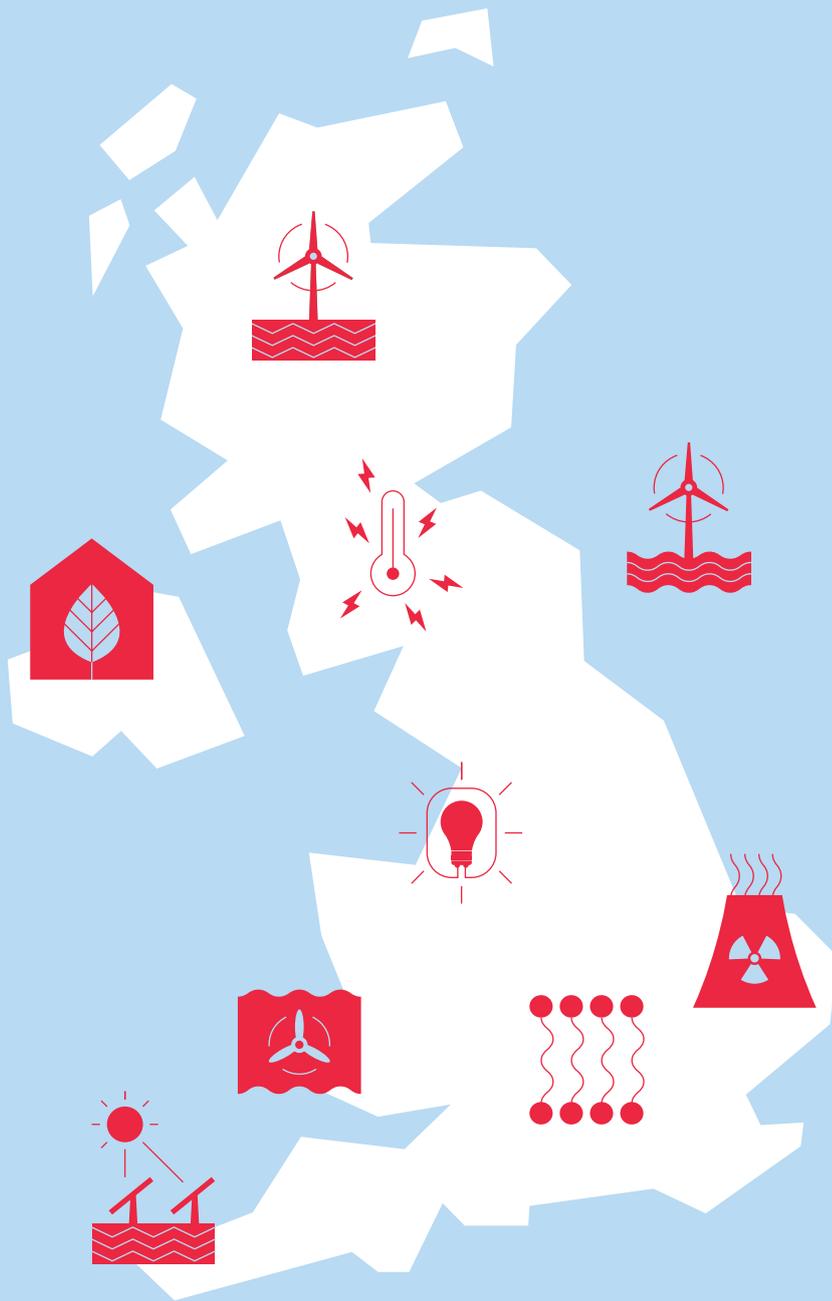
+7000
OFF-SHORE
TURBINES



+2000
ON-SHORE
TURBINES



ENOUGH TO COVER
22K
FOOTBALL
PITCHES



THE HUGE BENEFIT TO THE UK'S ECONOMY AND THE PUBLIC

UK wide economic benefits that far outweigh the economic costs

BENEFIT OF
£800 BILLION
TO ECONOMY BY
2030

These 4 goals require investment of 2% GDP each year, but result in a significantly more prosperous UK, meaning there is a net benefit of £800 billion for the economy by 2030, equivalent to the entire economy of Holland or Turkey.

A true jobs revolution

850,000
NEW JOBS

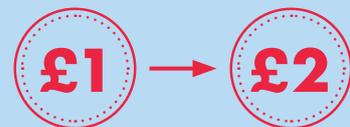
850,000 new green energy jobs across every region of the UK.

UK households will be better off

- Energy bills will not need to increase and could even decrease.
- Household incomes will be 2% higher by 2030.

Will improve government balance sheet

Every £1 of capital investment by UK government to result in nearly £2 back due to more prosperous economy. By 2030 would be enough to fund Crossrail eight times over.

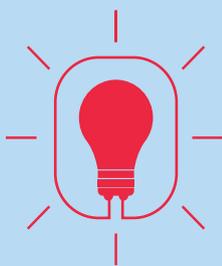


Improve the health of UK public

6,000
AVOIDED DEATHS
PER YEAR BY
2030

- Burning less fossil fuels will result in 6,000 avoided deaths a year by 2030 due to improved air quality.
- Improving UK housing stock lead to 565,000 less cases of asthma by 2030 and 1,500 avoided deaths per year from cold.

GOAL 4: BALANCE THE SYSTEM



"Keep the lights on" by making sure energy supply and demand are always balanced whether the wind blows or not. Through measures like demand-side-management, back-up generators, power and heat storage, interconnectors with Europe, system digitization, smart meters and EV smart charging.

Maximise performance, cost savings and efficiencies by developing a whole system view. Integrating national systems of electricity generation and supply, heat generation and supply, buildings and transportation.

RESULT

The demand for energy in the UK is met by supply 24 hours a day, 365 days a year.