

The household energy technologies that won't cost the earth - how new tech is key to saving £billions while decarbonising

- New analysis by Imperial College London and OVO Energy highlights that household energy flexibility could cut the cost of decarbonisation by £6.9bn per year.
- Researchers considered three different energy scenarios all with varying amounts of residential flexibility. The scenario with the highest level of residential flexibility revealed the cheapest energy system decarbonisation.
- In a scenario envisaging near complete decarbonisation of power, heat and road transport, adding smart electric vehicle charging was shown to save £1.1bn, vehicle-to-grid charging £3.5bn, smart electric heating £3.9bn and in-home batteries £2.9bn.
- These huge savings come from reducing the investment requirement in network infrastructure and allowing for greater uptake of cheaper renewable energy like wind and solar.
- Estimates indicate that the cost of dramatically increasing renewable electricity production to power electric vehicles and heat homes will cost £5.6bn less than a hazardous, 'business-as-usual' scenario relying on petrol and natural gas.

London, 05 September 2018 - New analysis of the energy system and decarbonisation in the UK has found that increasing residential flexibility could cut the cost of moving to a post-carbon society by £6.9bn.

The "Blueprint for a Post-Carbon Society" report, by Imperial College London and OVO looks at three different decarbonisation scenarios all with varying levels of residential flexibility. The "Future Survival" scenario details one of the most ambitious UK decarbonisation scenarios and includes a high uptake of both electric vehicles (25m) and electric heating (21m), in addition to a high penetration of low-cost renewable power generation (93 per cent). In this scenario, the use of residential flexible technologies, like smart electric vehicle (EV) charging, smart electric heating and in-home batteries saves the UK energy system £6.9bn overall which amounts to £256 per household. These savings are achieved by limiting the need for expensive grid upgrades and reinforcements

and enabling a higher penetration of low-cost renewable energy such as wind and solar.

One of the most commonly cited challenges with the roll out of EVs, is the suspected impact on the energy system. This report demonstrates that new vehicle charging technologies will alleviate these impacts, with the benefits they bring to the grid increasing with the proportion of renewables and number of EVs on the road.

Further analysis shows that compared to a less ambitious “Burning Platform” scenario, the estimated cost of the “Future Survival” scenario is in fact £5.6bn per year less, meaning potential savings of £206 per year per household.

Dr Toby Ferenczi, OVO’s Director of Strategy said:

“Electrification and the intelligent use of residential energy technologies are absolutely critical to bringing down emissions and powering the future sustainably. This research shows that households up and down the country can each play a role in creating a balanced, flexible, and almost completely renewable energy system while at the same time saving over £200 a year.

OVO continues to call for the Government, regulators and the industry to work together and adapt to this new energy system where demand flexibility makes energy cheaper for everyone.”

Professor Goran Strbac, EKERC researcher at Imperial College London said:

“This analysis demonstrates that cost effective decarbonisation can be achieved not only through the deployment of low-cost renewable energy such as wind and solar but also by improving system flexibility through the use of behind-the-meter technology. Achieving this would require changes in regulations and market rules that the UK should act on.”

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Editors notes

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About OVO

OVO is the UK's largest independent energy technology company and supplier. Across the group, OVO serves more than 1.1 million customers with intelligent energy services and other home services. Founded in 2009 by Stephen Fitzpatrick, OVO redesigned the energy experience to be fairer, greener and simpler for all. Today OVO is no longer simply an energy retail business: it is group of innovative, dynamic companies, all striving to harness technological advances with great consumer propositions to deliver affordable, clean energy to everyone.