

# Approaching net zero: an energy company view

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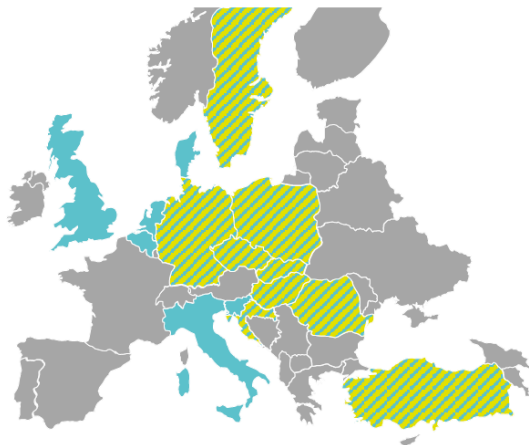
Energy networks

&

Customer solutions

● = Energy Networks

● = Customer Solutions



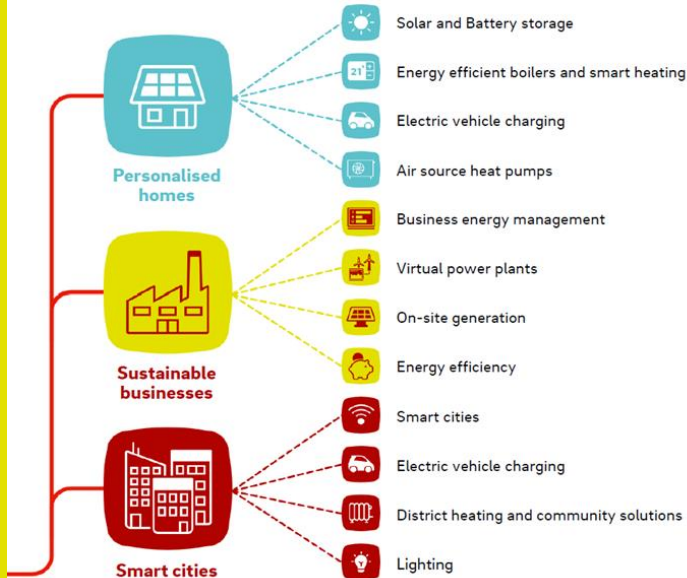
- E.ON is one of the largest energy companies in the world focussed on clean growth. We have over **70,000 employees** across **15 European countries**, more than **54 million** customers and operate ~ **1.5 million km** of energy networks
- We have been **investing in** and building **renewable** energy projects since the 1990s and in the last decade we've invested more than **£2.5 billion** into renewable energy in the UK
- We now have **2 million** E.ON customers using **smart meters** and all our residential households receive **100% renewable electricity** on all tariffs
- We believe the future of energy is **decarbonised, decentralised and local**, with customers in control

# Smart, Sustainable & Personalised

What we do reflects the key emerging trends of the decentralised, digital and renewable New Energy World:

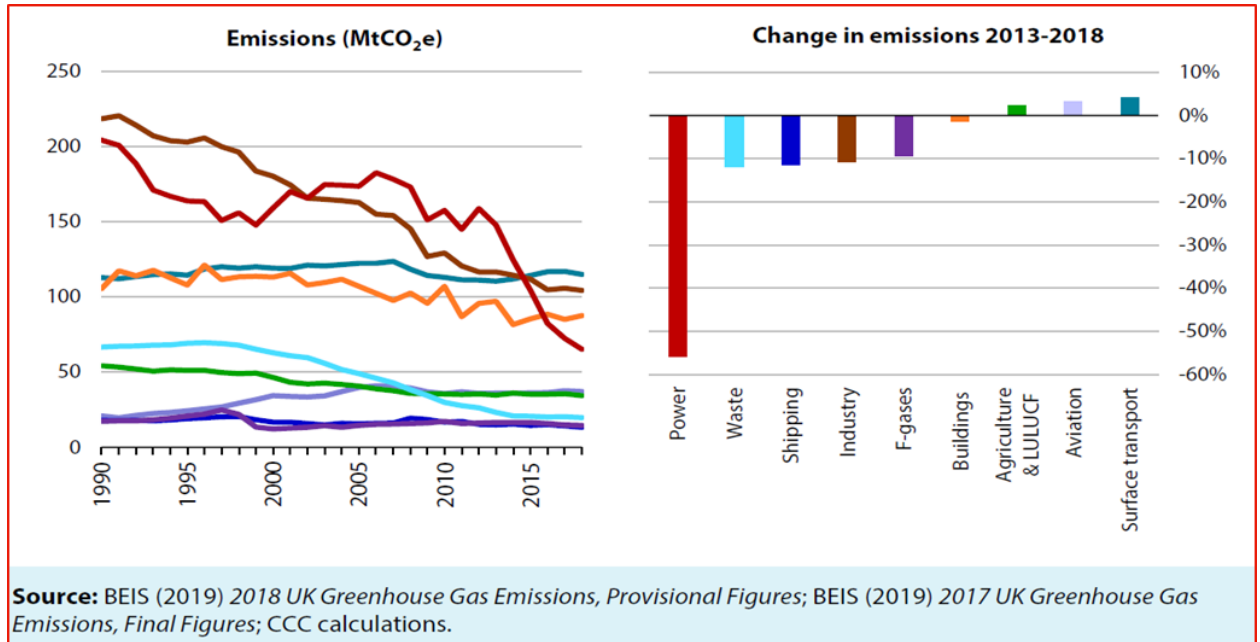
- Smart energy networks
- Innovative customer solutions
- Renewable energy

And at the core of it all: our customers



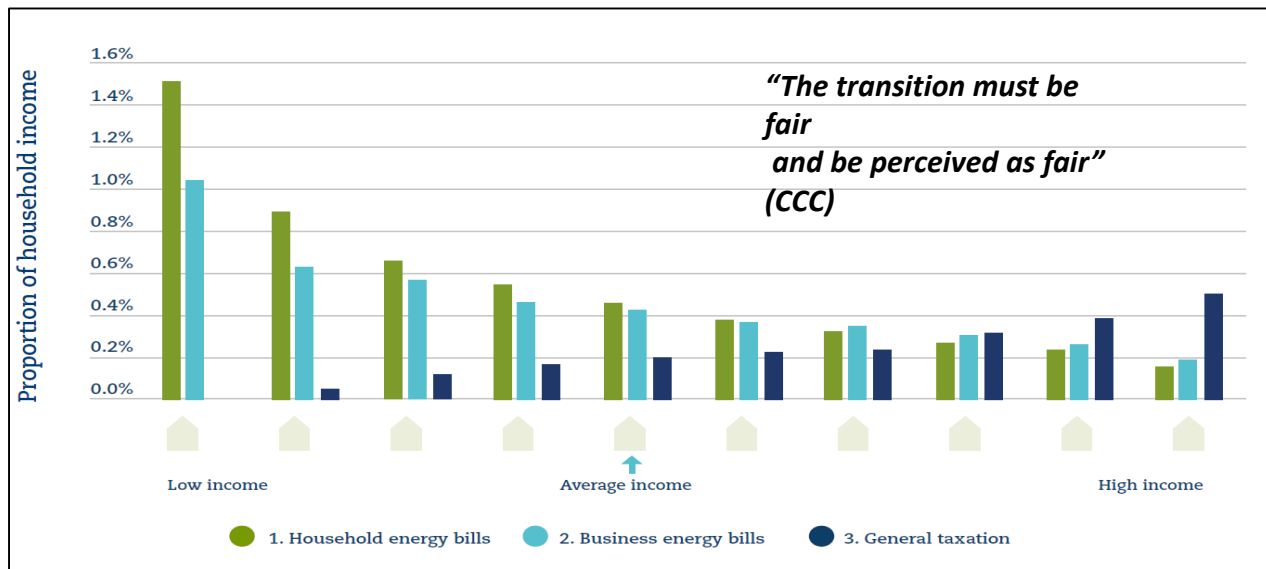
**Support for the UK target to reach net zero is fundamental to E.ON's strategy**

# UK progress on climate action



Focus has been on the power sector

We need to ensure that there is both a just transition to net zero and transparency about where the costs will lie...



Source: Energy Research Council (2018), Funding a low cost energy system

**The HMT review must ensure progressive recovery of policy costs**

## Lessons from the electricity sector



R&D funding

Market wide subsidies

Obligations

Trading schemes

Taxation

Mandatory phase-out

Market Based

Policy Continuum

Interventionist

We required all policy levers - no silver bullets

# The first fuel is energy efficiency...

Around 19m properties fall short of EPC level C, equivalent to 71% of the UK's 27m homes<sup>1</sup>

Based on UK Government property transaction sample survey; nearly 93% of dwellings sold were in EPC bands C, D and E with 45.5% in band D alone.<sup>2</sup>

Upgrading energy efficiency from an EPC Band E to an EPC Band D can reduce energy costs by £380 per year on average.<sup>3</sup>



SWI and whole house retrofit

Low cost green finance

Larger ECO

Stamp Duty and Business Rates relief

Tighten PRS regulations

R&D funding

Market wide subsidies

Obligations

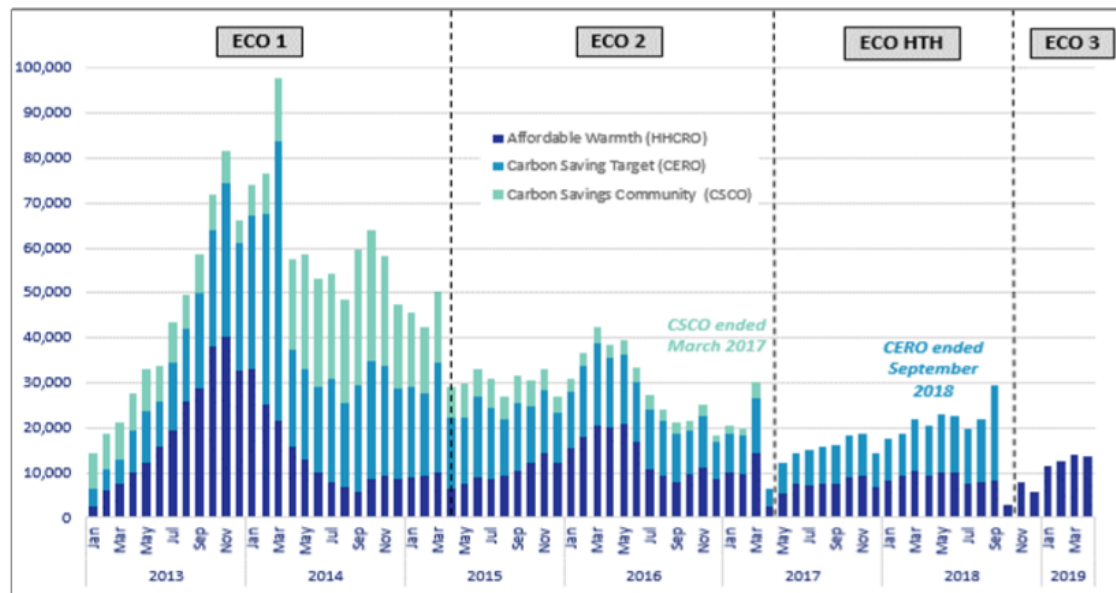
Trading schemes

Taxation

Mandatory phase-out

## But energy efficiency installations have fallen off a cliff

Figure 8: ECO measures installed, by obligation, by month, up to end to end March 2019.



Source: BEIS Household Energy Efficiency statistics, headline release June 2019



## Case study: Renfrewshire Council



- Built in the 1930s, social housing properties in the Gallowhill and George Street areas of Paisley were hard to heat with low energy efficiency standards and high levels of fuel poverty
- The local council's fuel poverty strategy helped spark a large-scale retrofit programme to refurbish 969 homes in these areas, including 432 medium rise flats, through a variety of measures
- The £5 million project was made possible through £3.35 million from the Scottish Government's HEEPS programme, along with £700,000 from Renfrewshire Council and £1 million from E.ON through our commitment to the ECO scheme

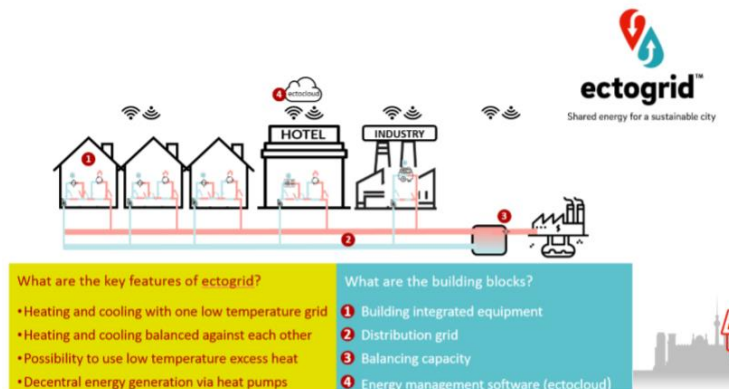
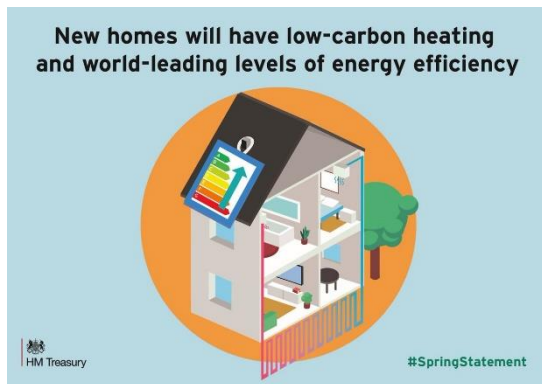


**ECO, Council & Scottish  
govt. funding helped  
refurbish 969 homes in  
Paisley**

**EWI, loft insulation,  
improved boiler flues and  
gas safety certificates  
helped reduce carbon  
footprint by 9,400 tonnes  
per year**

# Low carbon heat is going to be challenging

*“An overhaul of the approach to low-carbon heating and energy efficiency is needed. The Government’s planned 2020 Heat Roadmap must establish a new approach that will lead to full decarbonisation of buildings by 2050” (CCC)*



Heat pump innovation		Gas boiler scrappage scheme		Carbon intensity standards obligation		Carbon pricing		2035 phase out of gas boilers			
R&D funding		Market wide subsidies		Obligations		Trading schemes		Taxation		Mandatory phase-out	

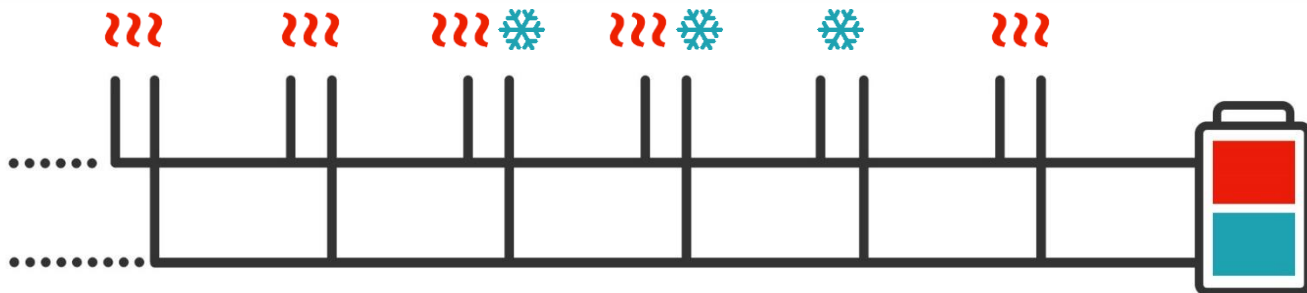
But it's clearly easier when you can design it in...



"By making a loop of thermal energy streams, ectogrid™ helps provide all the heating and cooling necessary for an entire city."

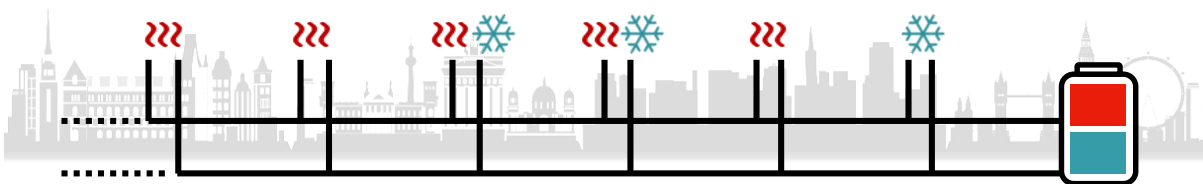
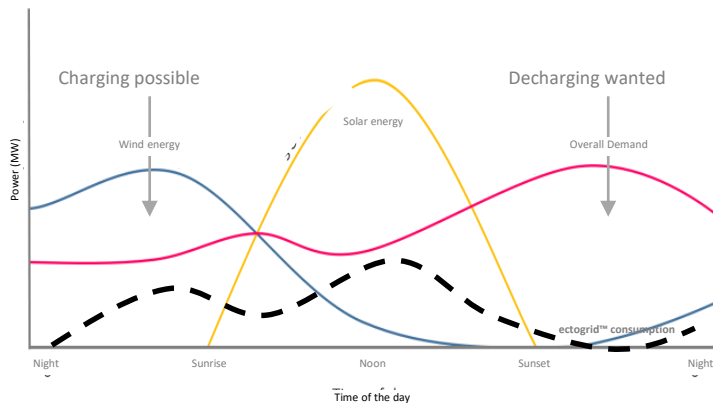
## How ectogrid™ works

Buildings connected to the same system provide each other with heating and cooling utilising waste heat and heat pumps



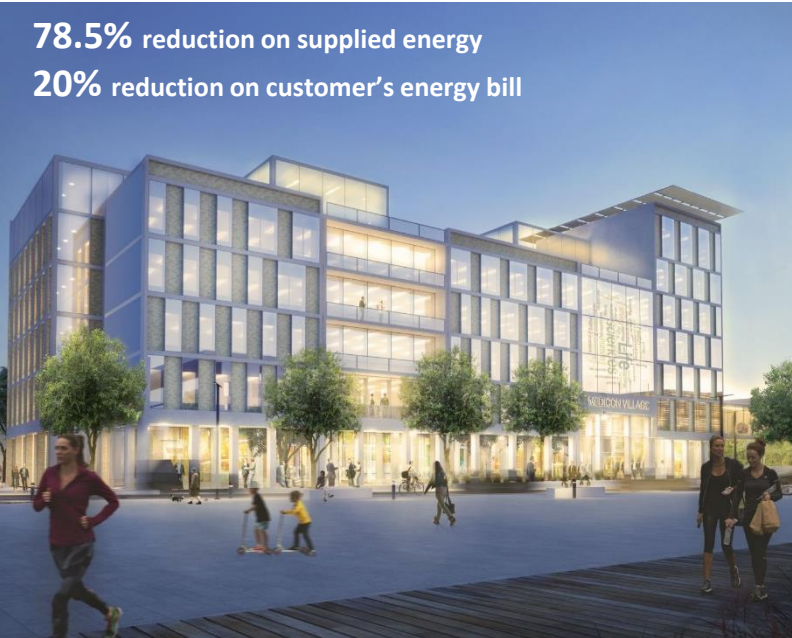
# ectocloud™ creates and captures flexibility

Renewable production and consumption in defined area



At Medicon Village, we built the world's first ectogrid™ to combine heating and cooling in one system

78.5% reduction on supplied energy  
20% reduction on customer's energy bill



This is a “zero emission” energy system

# Greater ambition is needed in the surface transport sector

***“By 2035 at the latest all new cars and vans should be electric (or use low carbon alternatives such as hydrogen). If possible, an earlier switchover (e.g. 2030) would be desirable” (CCC)***



Reducing PM to improve air quality		Charge point grants and green finance		Zero CO <sub>2</sub> fleet obligations		Replace Fuel Duty with mileage based tax		2030 ICE car and van phase out			
R&D funding		Market wide subsidies		Obligations		Trading schemes		Taxation		Mandatory phase-out	

# And policies have to be allowed to work...

## Case study: Copenhagen



CITY OF COPENHAGEN

- The city of Copenhagen is a trailblazer in green innovation and has an ambitious target to be the first carbon neutral city in the world by 2025. This target relies on meeting transportation goals in order to reduce carbon emissions significantly to only 400,000 tons per year by the target date
- Copenhagen views the electrification of vehicles as key to achieving this and E.ON has helped develop Copenhagen's EV fast charging network, with over 320 convenient stations in the city
- Frank Jensen, the Mayor of Copenhagen, has said that meeting ambitious climate targets such as theirs needs partnerships between businesses, public institutions and citizens to succeed

**However, wider lessons from Danish policy making should be taken in to account;**

- Premature removal of subsidies can halt progress and impact on a fair transition.
- Ambitious targets must be accompanied by a credible tax regime.



**320 fast charging posts to accommodate 400 electric vehicles**

**Currently 12,000 charging sessions per month and this continues to grow**

**Reliable network with uptime of 99%**



## Conclusions:

We don't underestimate the scale of the challenge here but you've got to start somewhere, so...

- Let's make the 2020s the decade of delivery for our net zero future
- Decarbonising heat and transport will require tough political decisions and all policy levers to be pulled, never forgetting a continuing focus on R&D
- We stand no chance unless we take customers with us – they cannot be passive in this transition – and we must ensure that we can deliver a just transition, with openness around costs

**e-on**