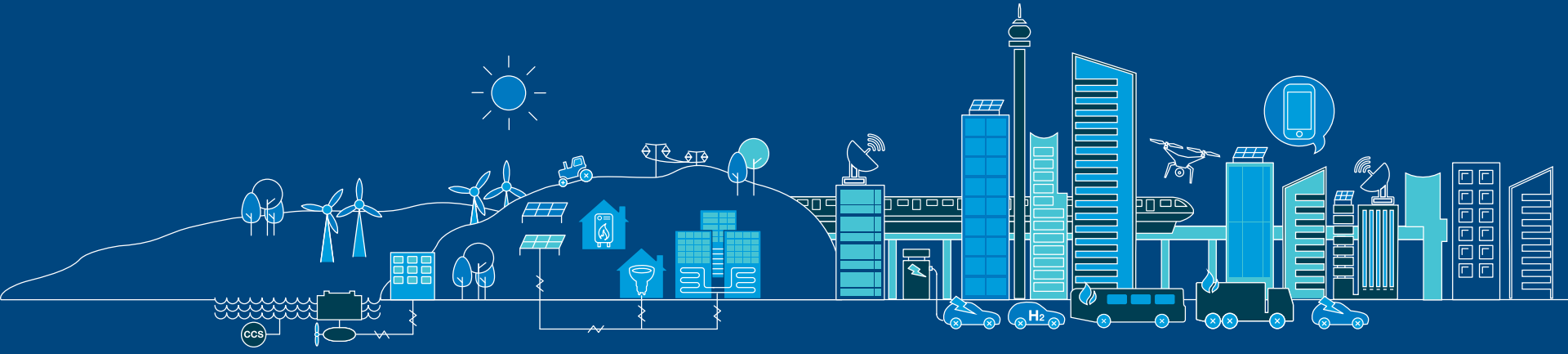


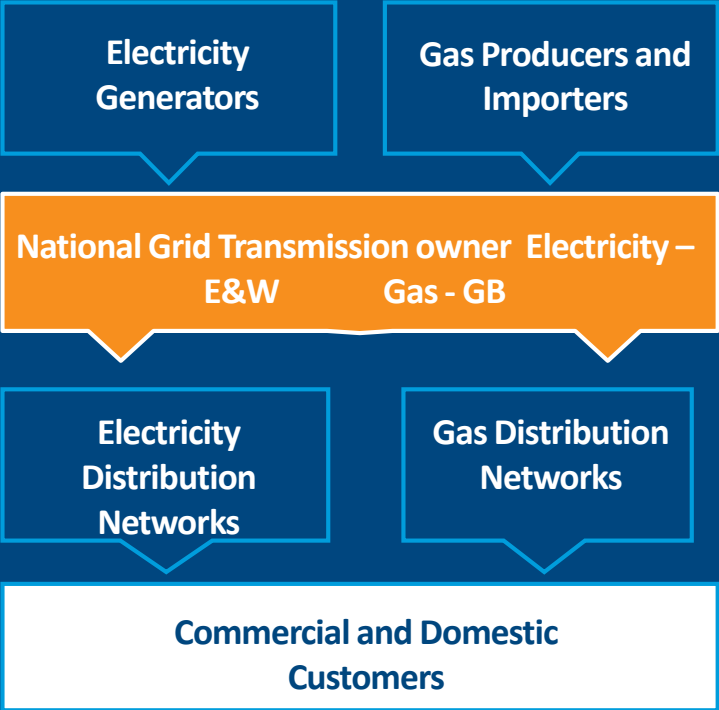


Future Energy Scenarios 2017

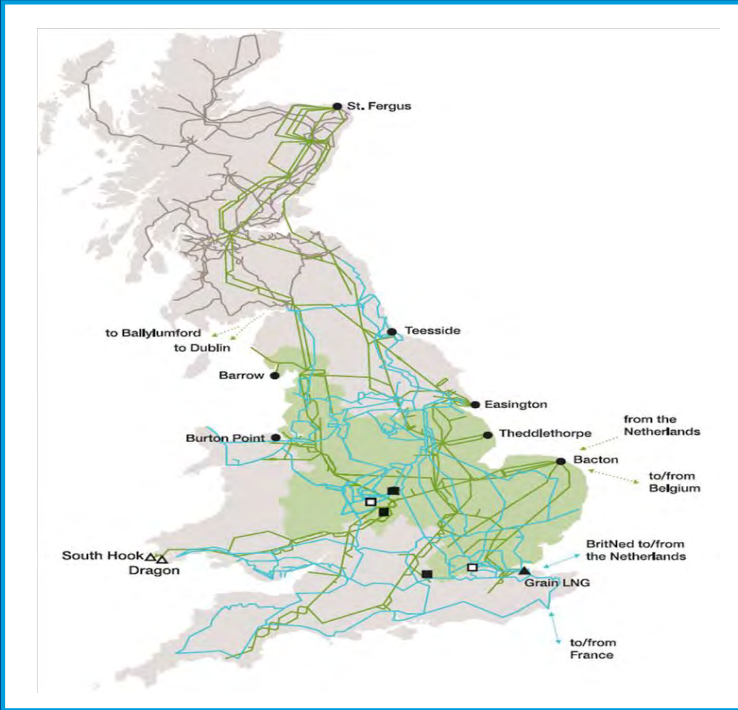
Marcus Stewart
Head of Energy Insights



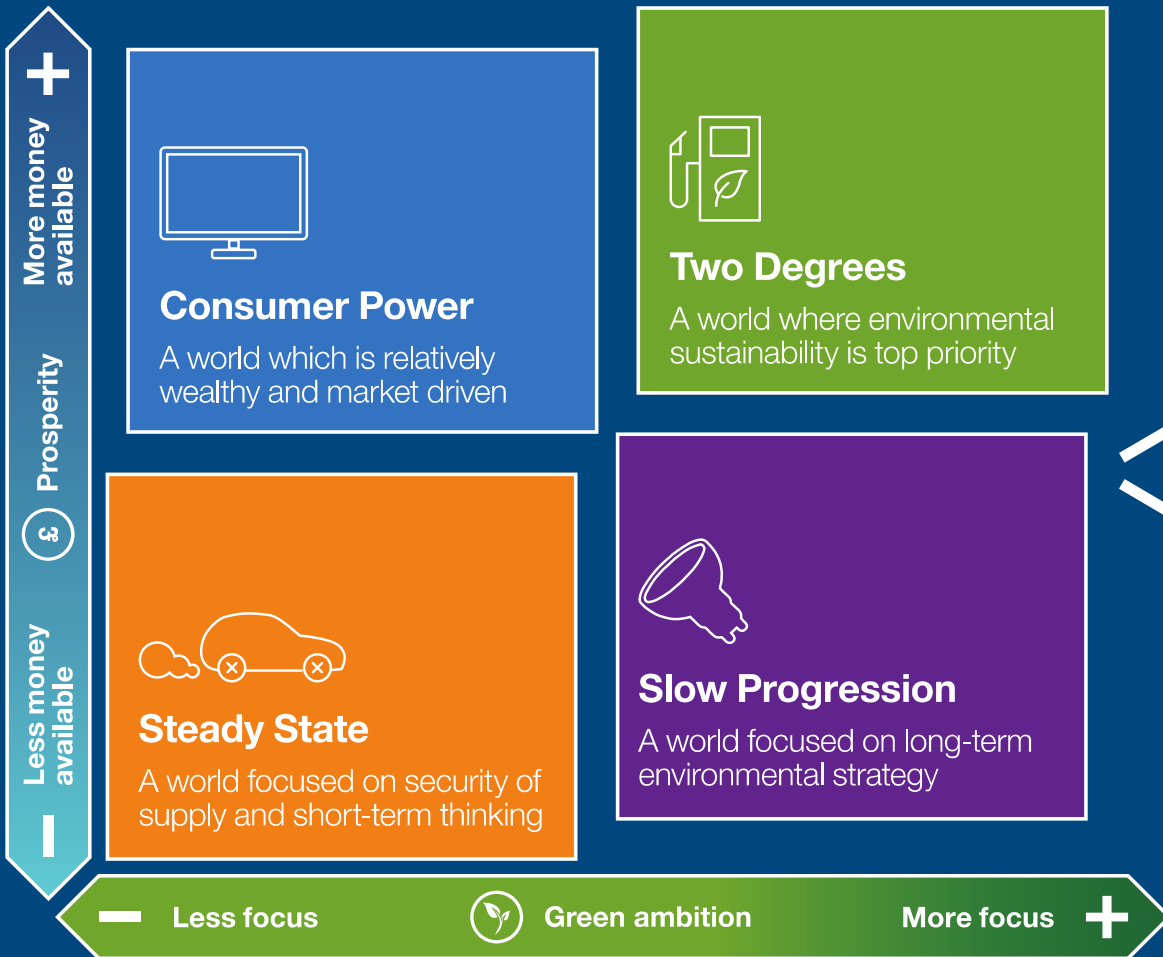
Briefly about National Grid...



System Operator



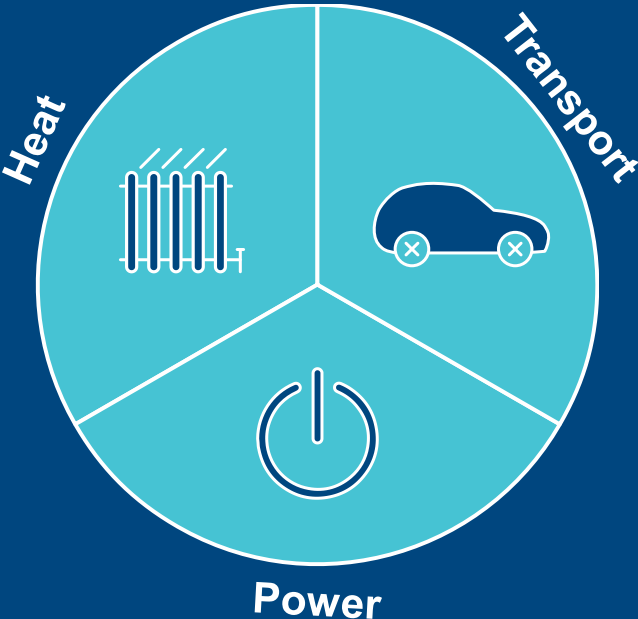
Our 2017 scenario matrix



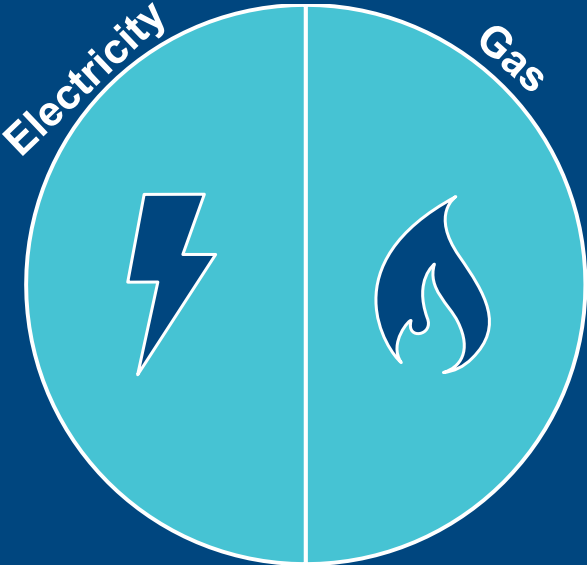
Thought pieces



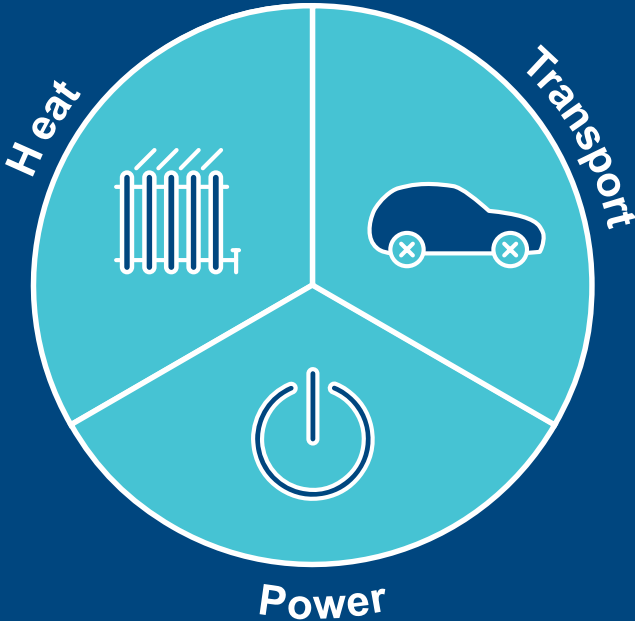
Demand



Supply



Demand

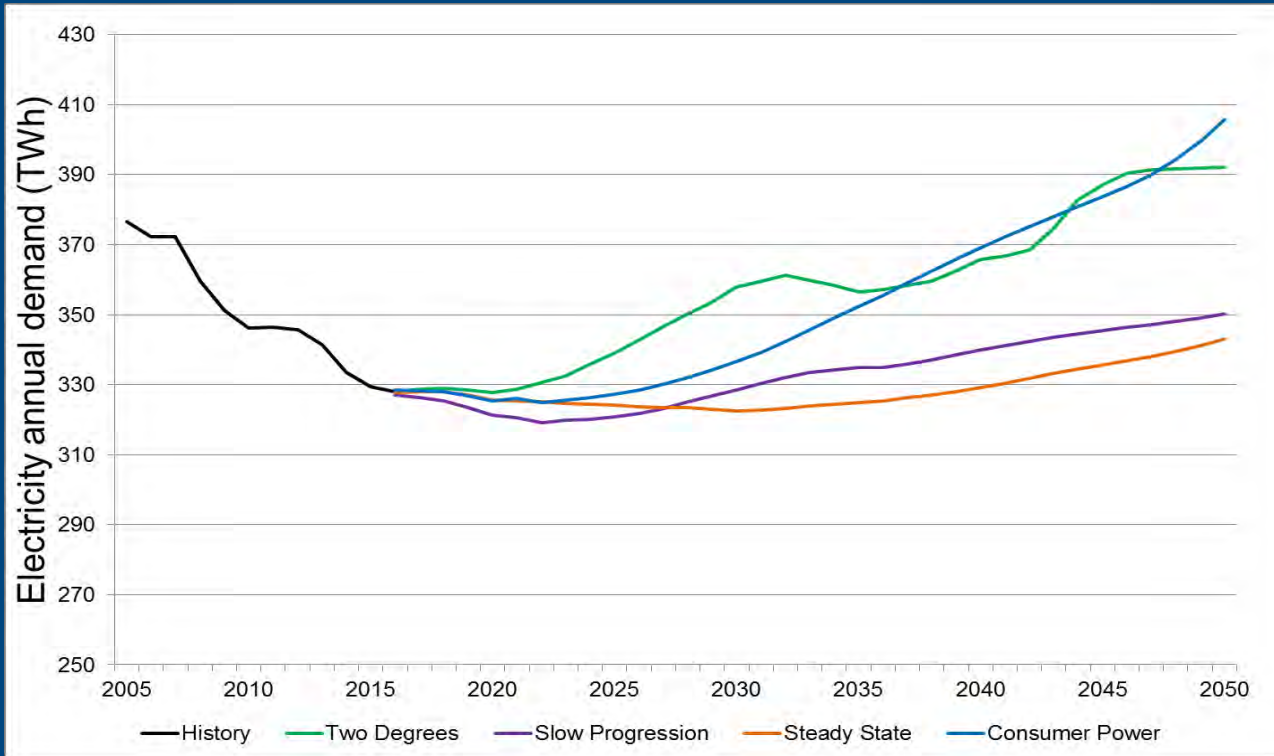




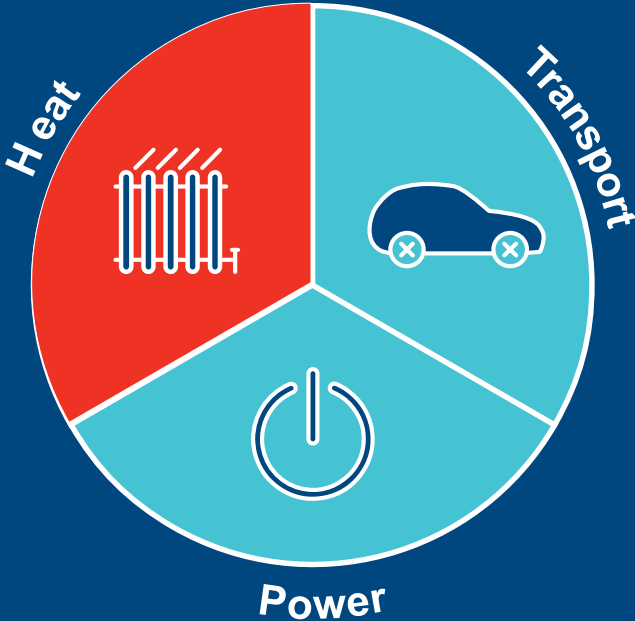
Electricity

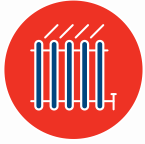
nationalgrid

Total Annual Electricity Demand



Demand





Heat

Residential Heating



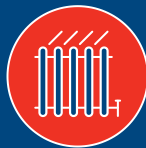
80%



13%

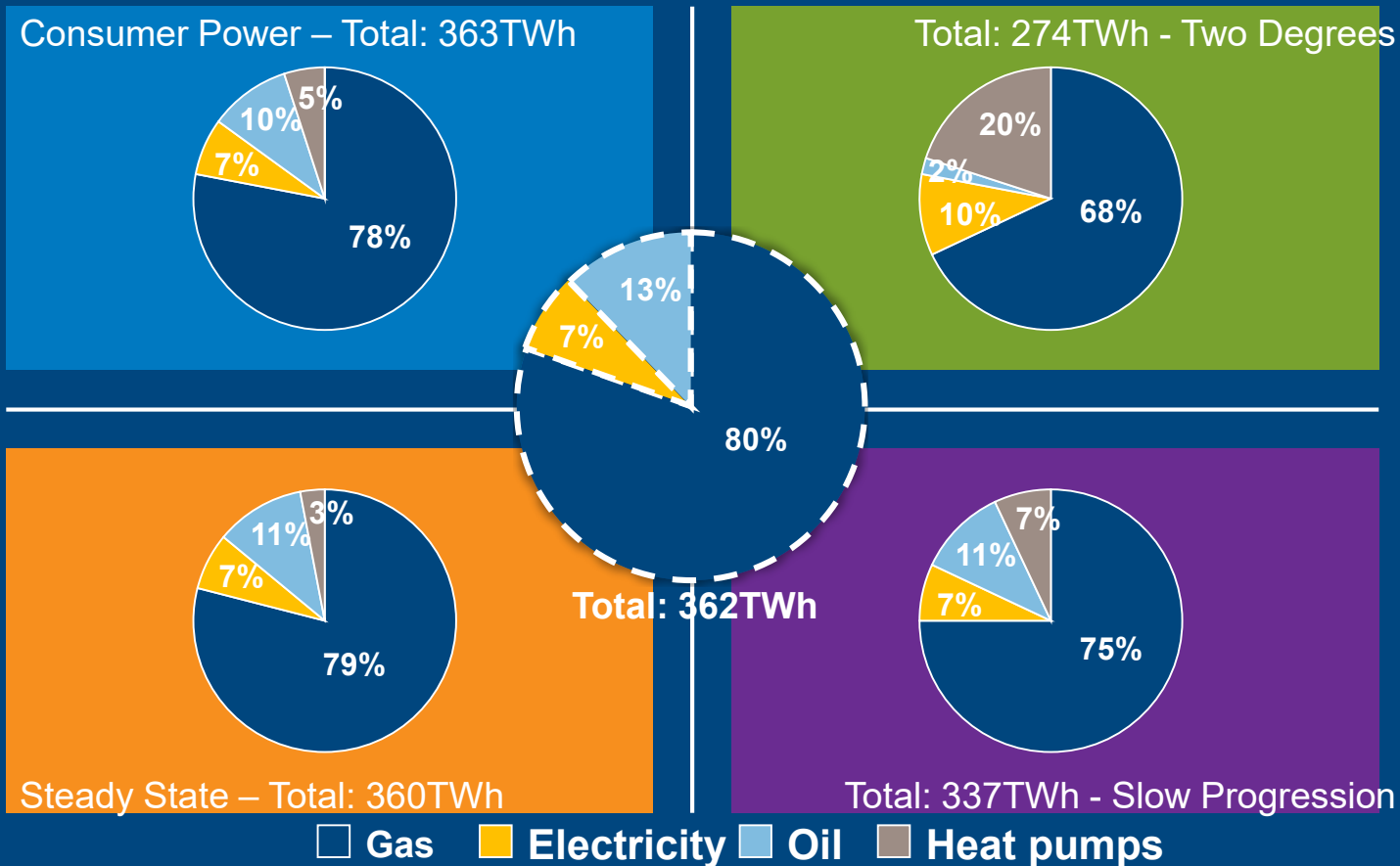


7%

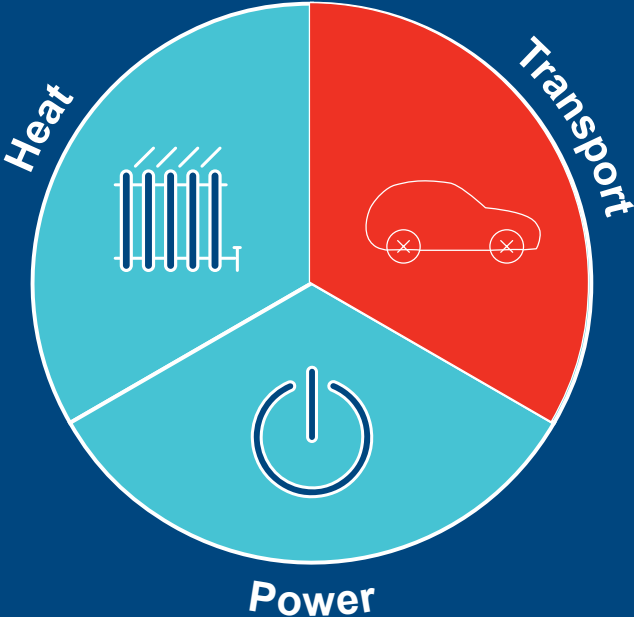


Heat

Residential demand - 2030



Demand



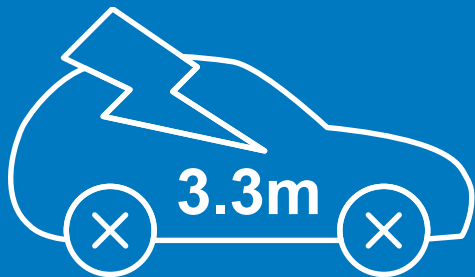


Transport

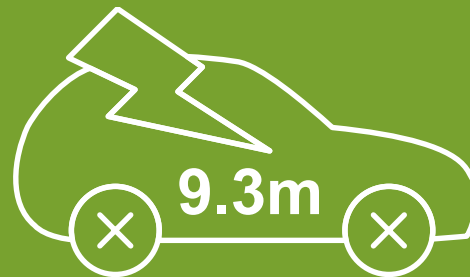
nationalgrid

Number of EVs - 2030

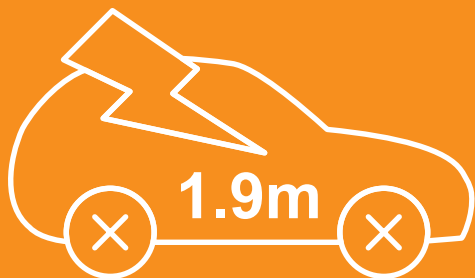
Consumer Power



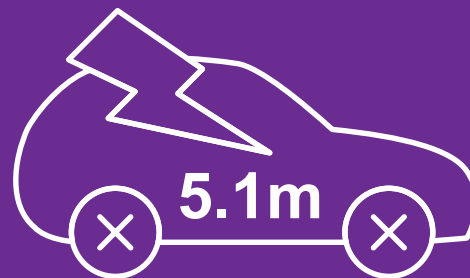
Two Degrees



120K

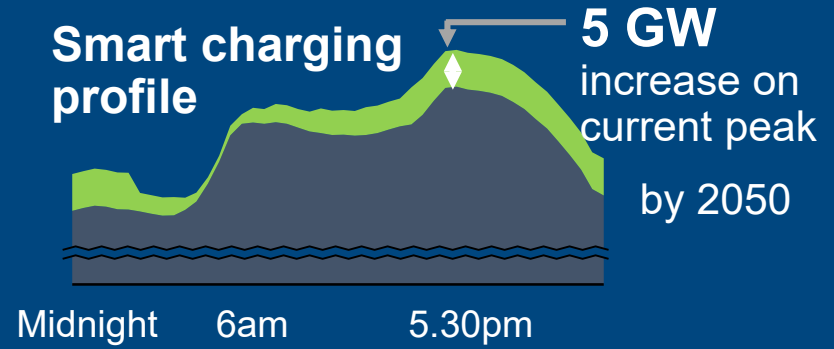
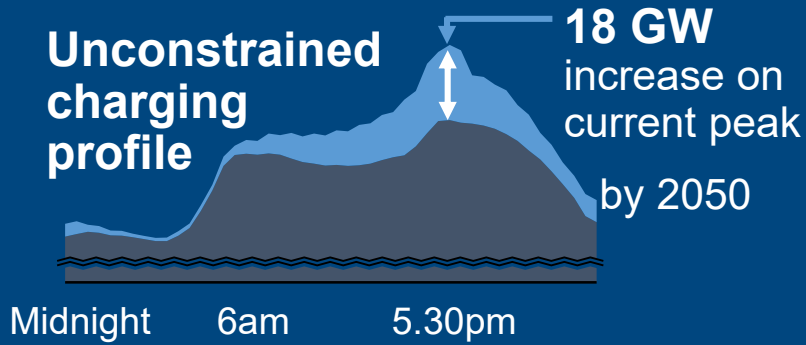


Steady State

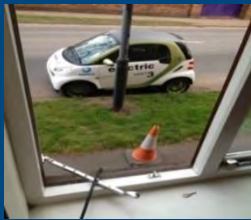


Slow Progression

It is not just how much energy is required, but when it is required, and how it is charged...



Home charging



43 %



7 kW

Charging stations



50 kW



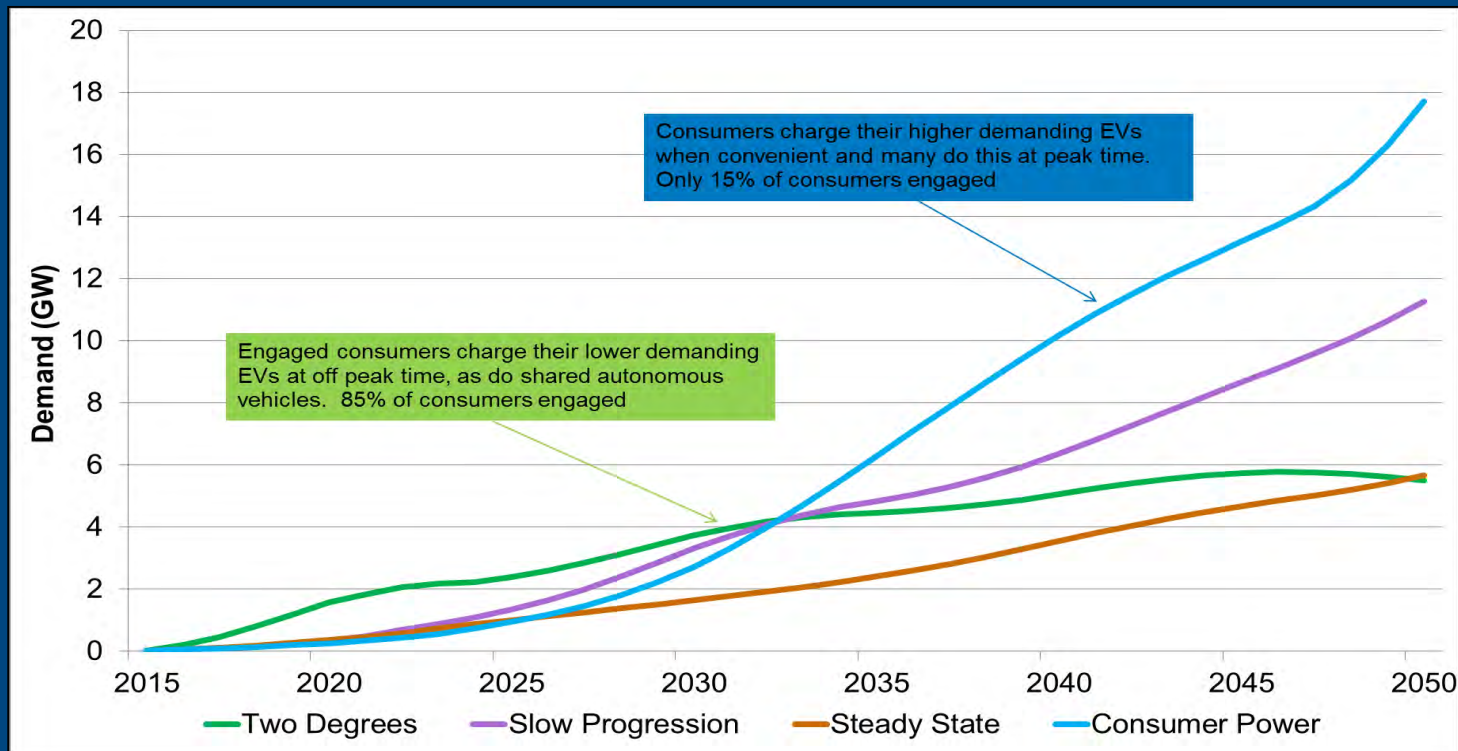
350 kW



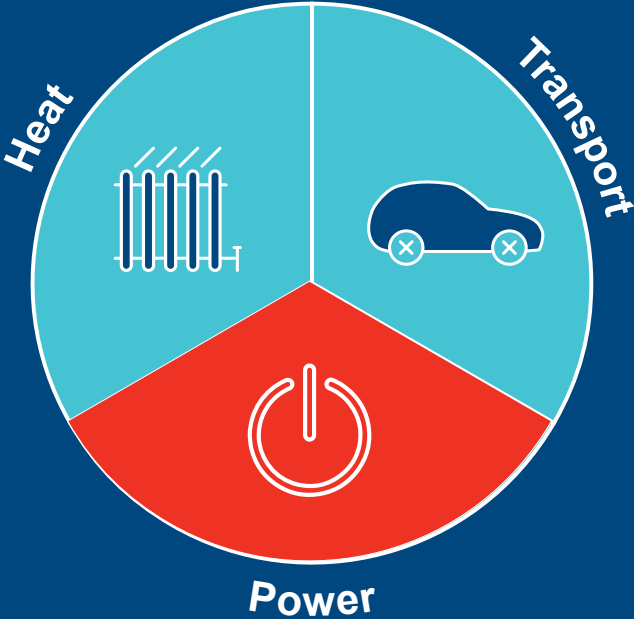
Transport

Total peak electricity demand for EVs

nationalgrid



Demand





Power

nationalgrid



60W



10W



5W



Power

TV Pickups above 500MW



2006

523

2016

63



Power

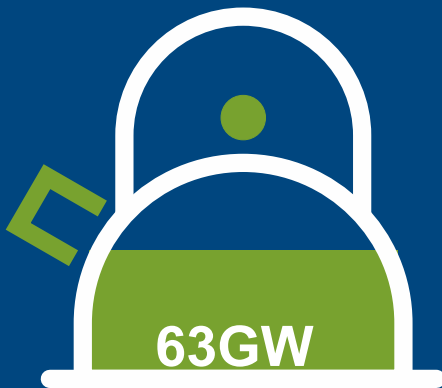
Effects of Smart technology and Consumer Choice

nationalgrid



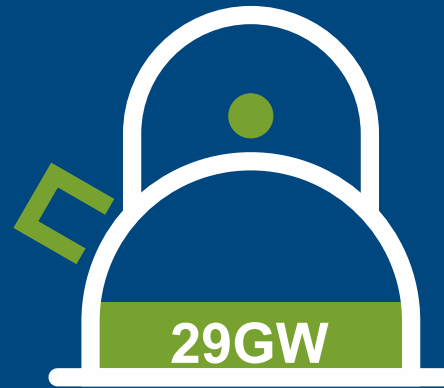
24GW

2017



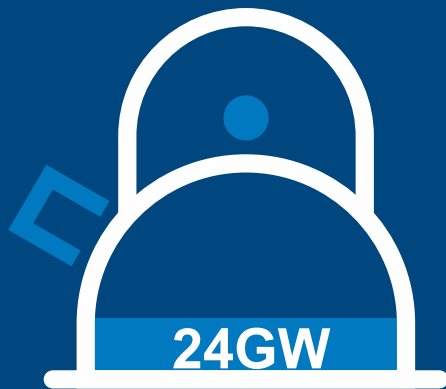
63GW

Unconstrained 2050

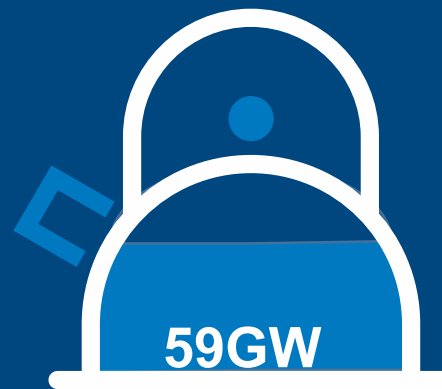


29GW

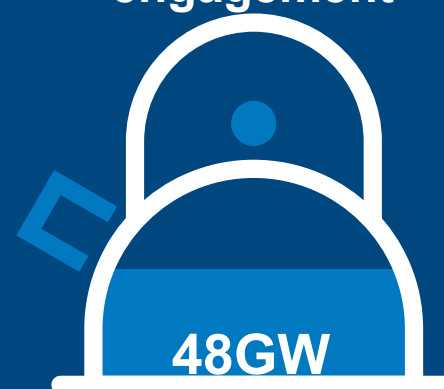
With consumer engagement



24GW



59GW

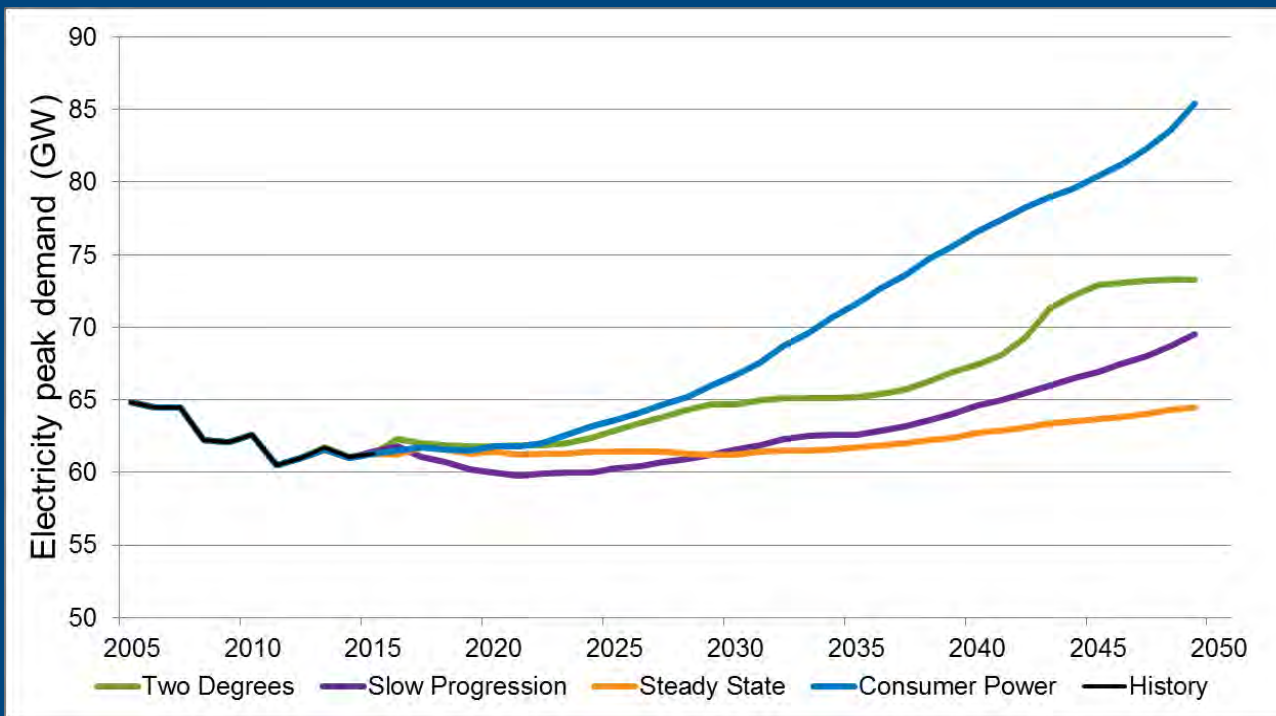


48GW

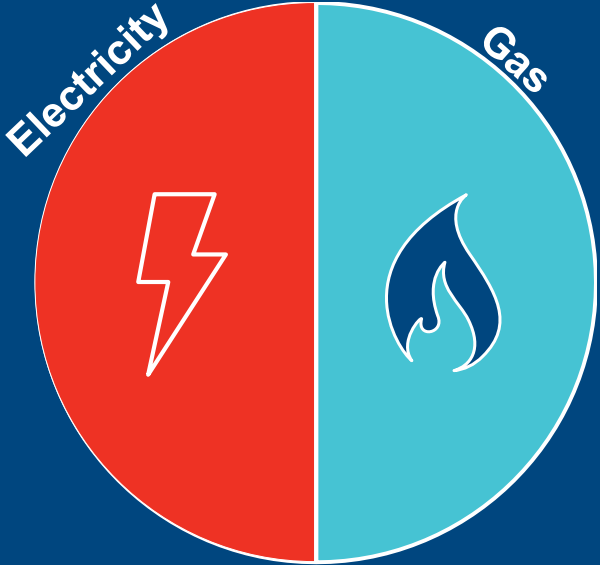


Power

Total Peak Electricity Demand



Supply





52%

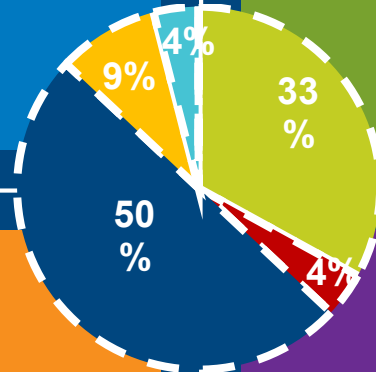
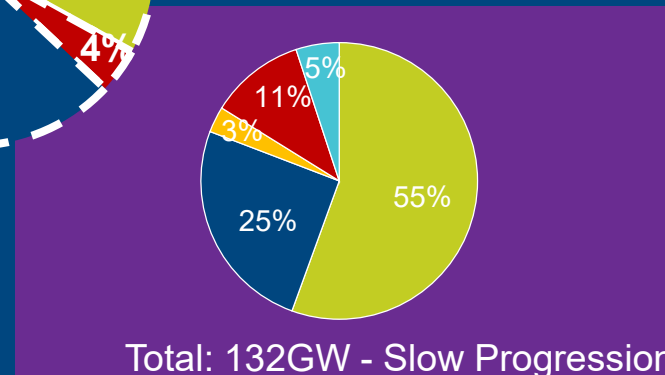
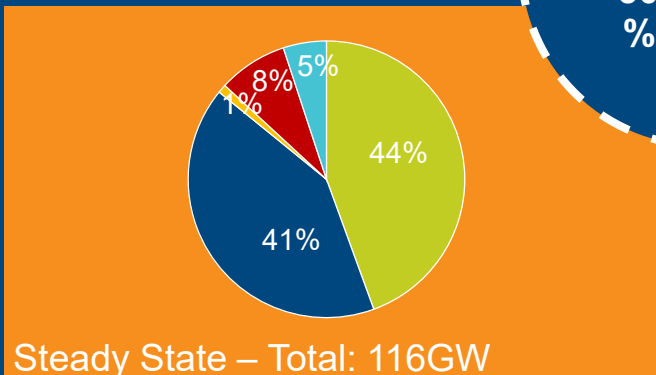
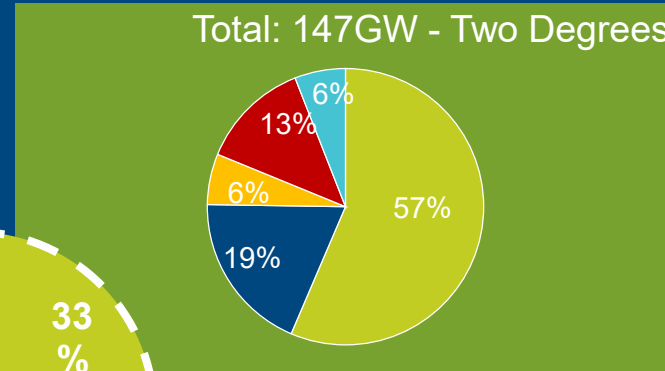
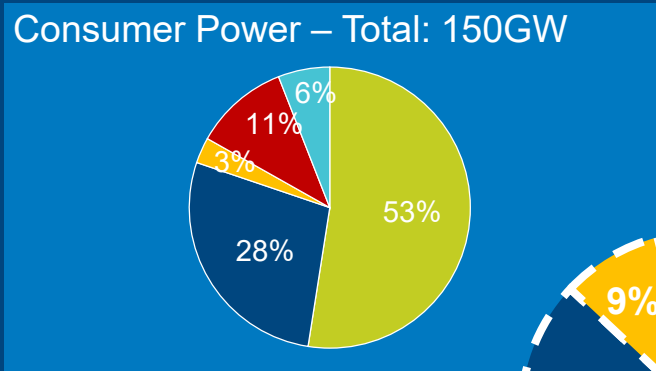
Greenest summer ever



Electricity

nationalgrid

Installed capacities type - 2030



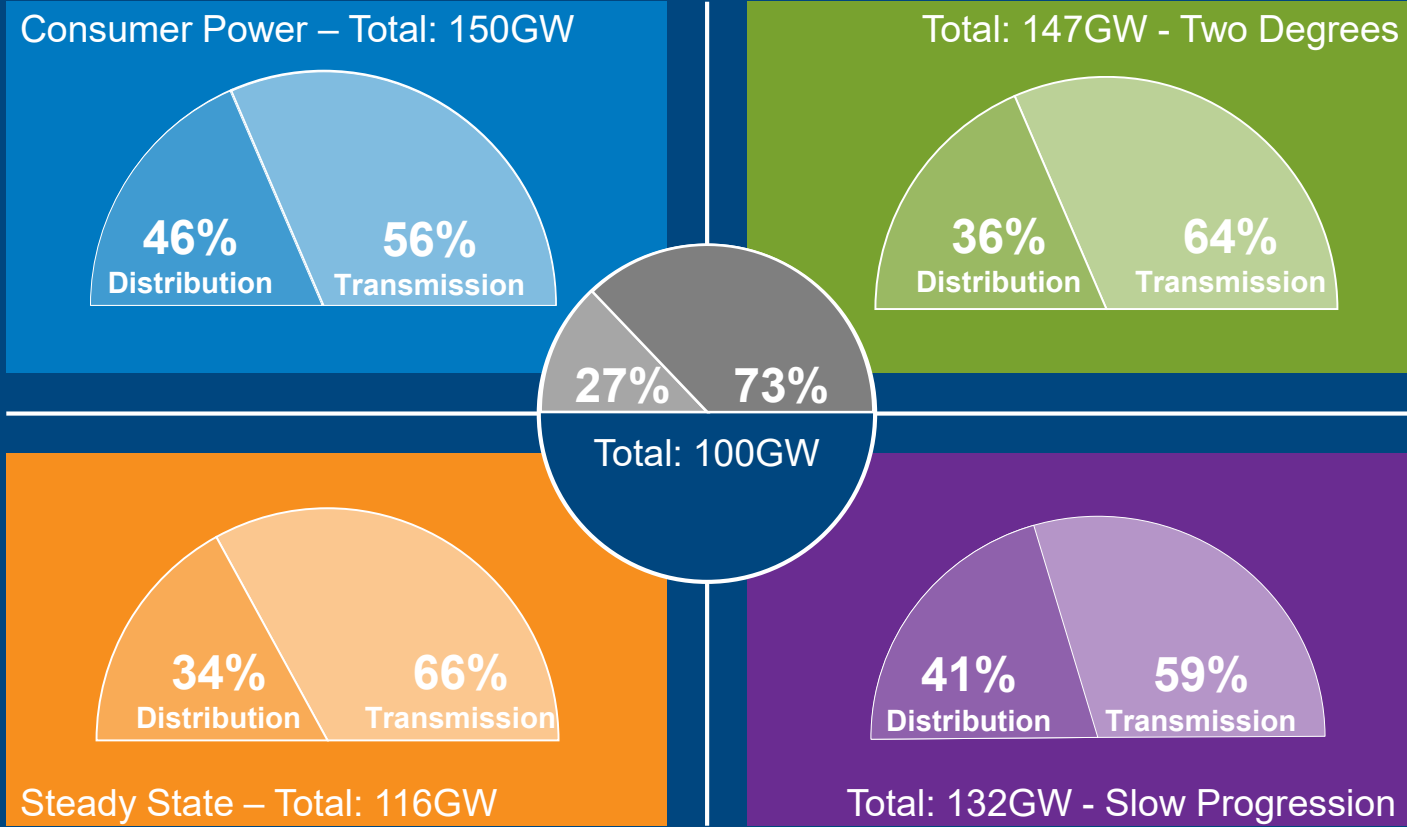
Thermal Renewables Nuclear Interconnectors Storage



Electricity

nationalgrid

Installed capacities location - 2030



FES 2017 – Key messages

1 An energy system with high levels of distributed and renewable generation has become a reality. This growth is set to continue, increasing the complexity of operating a secure and cost effective energy system.



2 New technologies and evolving business models are rapidly transforming the energy sector. Market and regulatory arrangements need to adapt swiftly to support a flexible energy system with an increasing number of participants.



3 Electricity demand has the potential to increase significantly and the shape of demand will also change. This is driven initially by electric vehicles and later on by heat demand. It will require a range of solutions to deliver best value for consumers, including a coordinated approach across the whole system; investment in smart technologies, transmission and distribution infrastructure; and commercial approaches such as consumer behaviour change.

4 Gas is critical to security of supply now and as Britain continues the transition to a low-carbon future. It will have a long-term role as a flexible, reliable and cost-effective energy source favoured by many consumers.



COMPLEX

ADAPT

CONSUMER

GAS



Continuing the conversation

For more information visit www.fes.nationalgrid.com

or email us Transmission.UKFES@nationalgrid.com

