electricity north west

Bringing energy to your door

Electricity North West Future Challenges

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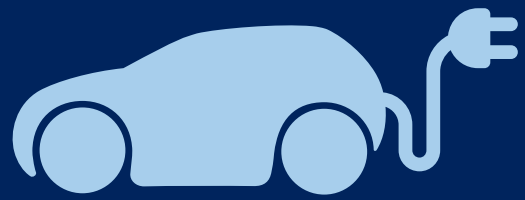
Agenda

Introducing Electricity North West



Low carbon future

Innovation & the energy challenge

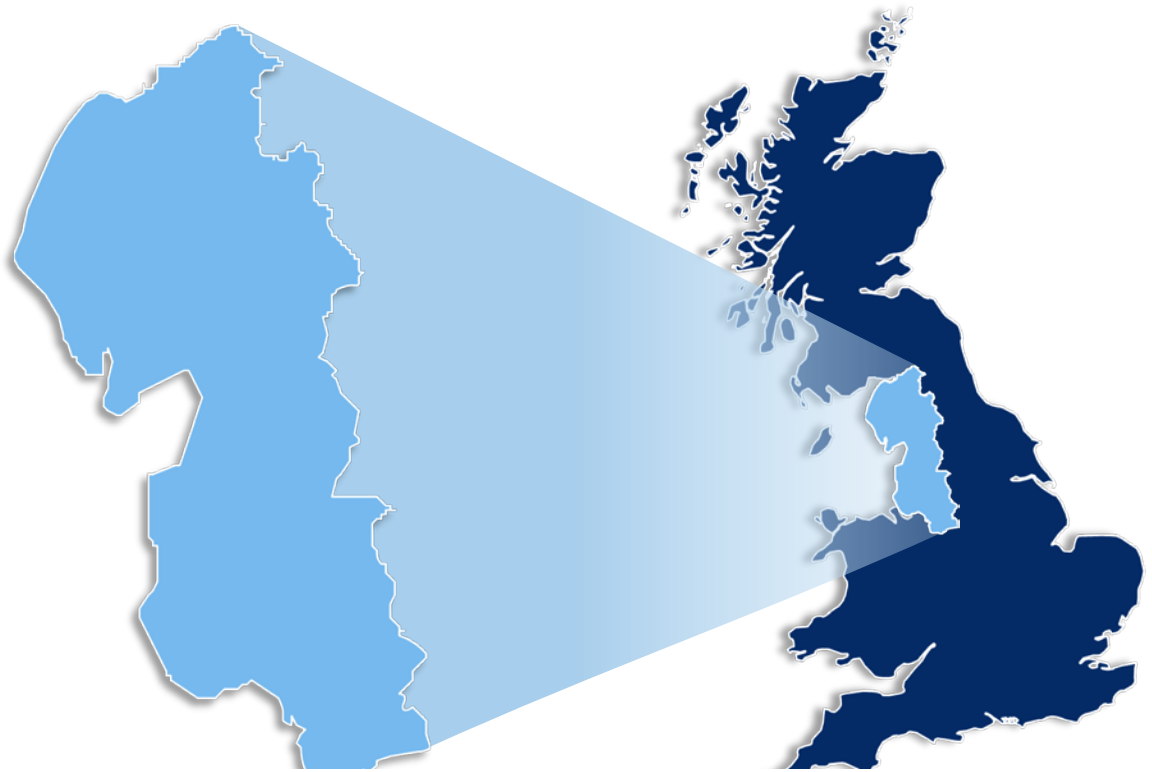
Summary and questions

Introducing Electricity North West

5 million

2.4 million

25 terawatt hours

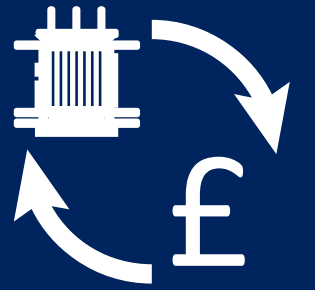


£12 billion of network assets ● 56 000 km of network
96 bulk supply substations ● 363 primary substations ● 34 000 transformers

A track record of delivery

NORWEB

United Utilities



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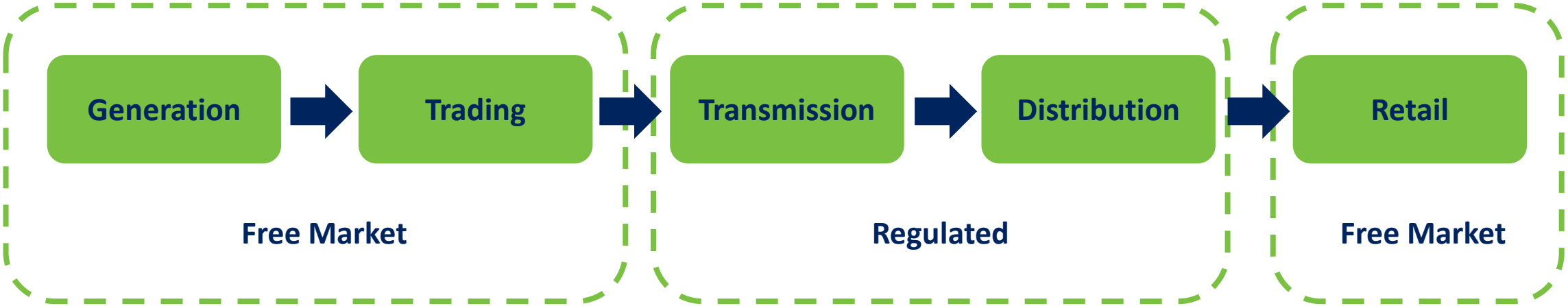
1948	1990	1995	2000	2007	2010
Electricity national-isation: North West Electricity Board	Privatisation: Norweb plc	North West Water takeover of Norweb: United Utilities	Norweb supply business sold	Sale of United Utilities Electricity to private investors	Acquisition of UU Electricity Services

The GB energy market

All large generators, suppliers and networks are regulated



But network businesses are the only ones with price regulation

ofgem Making a positive difference for energy consumers

UK energy challenges

2015

1/3 gas
1/3 electricity
1/3 oil

~40% of electricity is low carbon

2020

35% reduction in CO_2

15% of energy from renewables

Generation mix is radically 'overhauled'

2030

60% reduction in CO_2

Electricity demand increases, driven by electric cars & heat pumps

Distribution network capacity significantly increases

2050

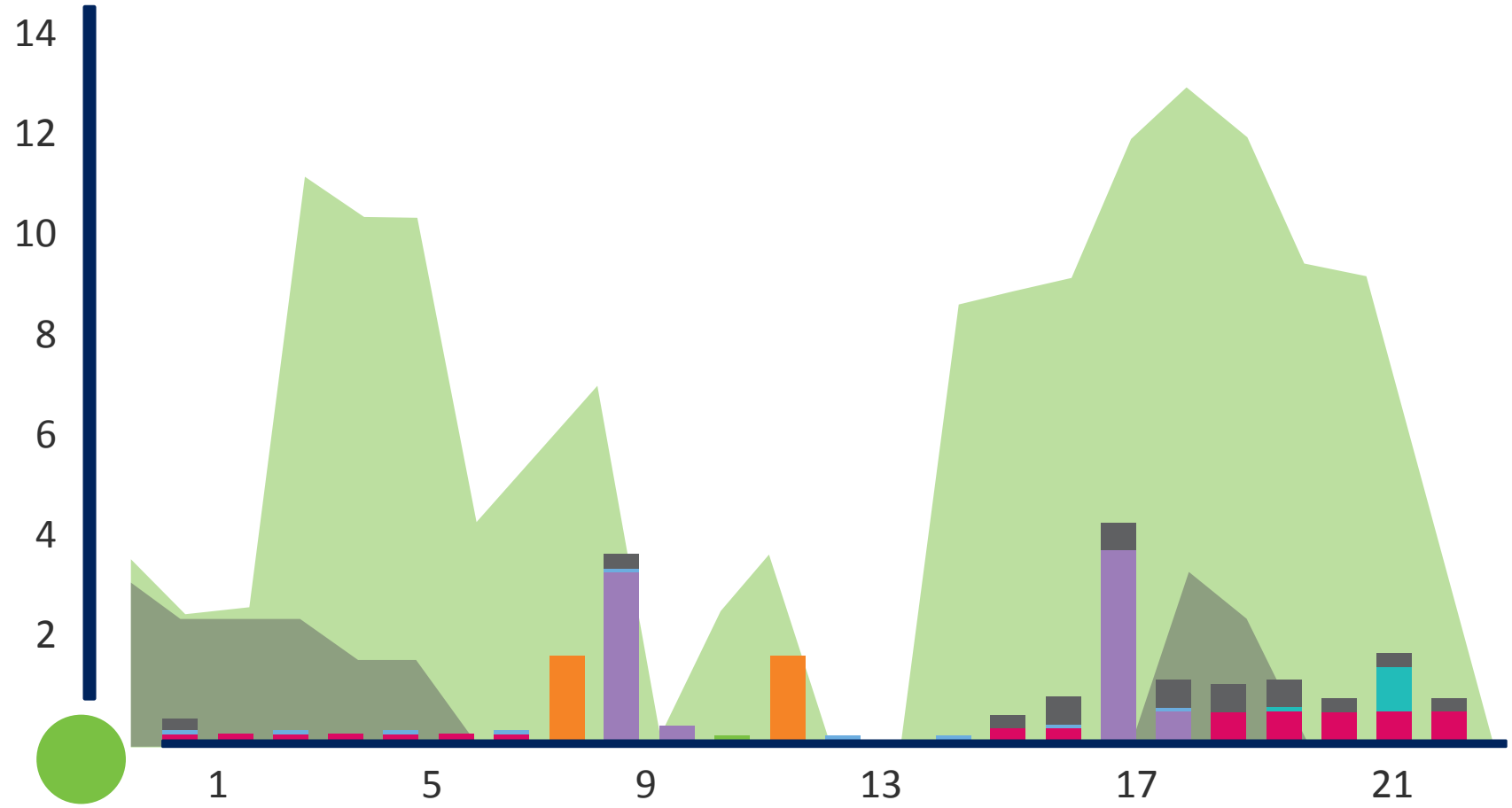
80% CO_2 reduction

Significant increase in electricity demand

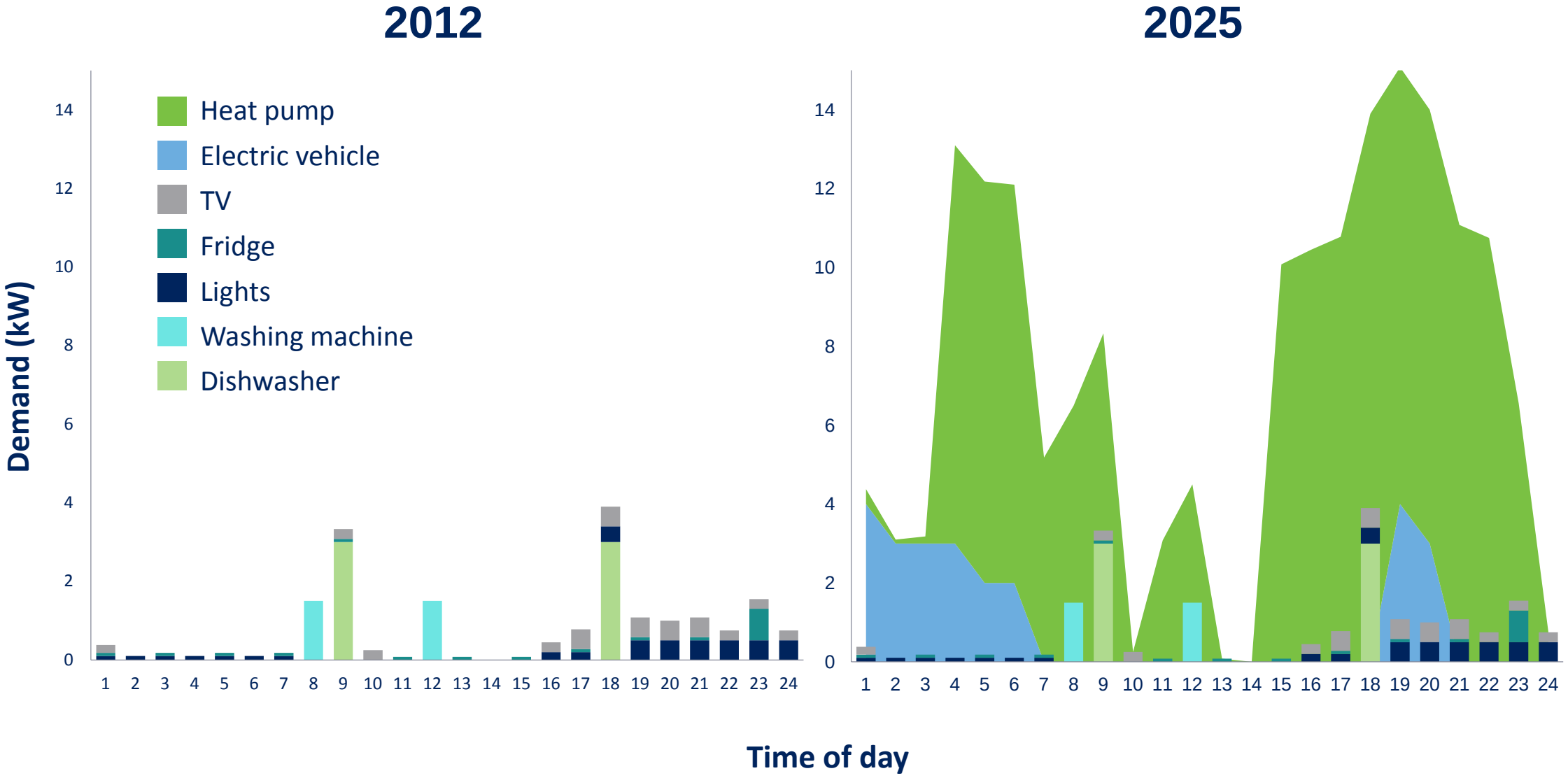
- Uncertainty in future demand and generation
- Difficult to predict demand
- More pressure to meet customers' needs at minimum cost
- Historic network cost optimised, expensive and slow to change

Our challenges

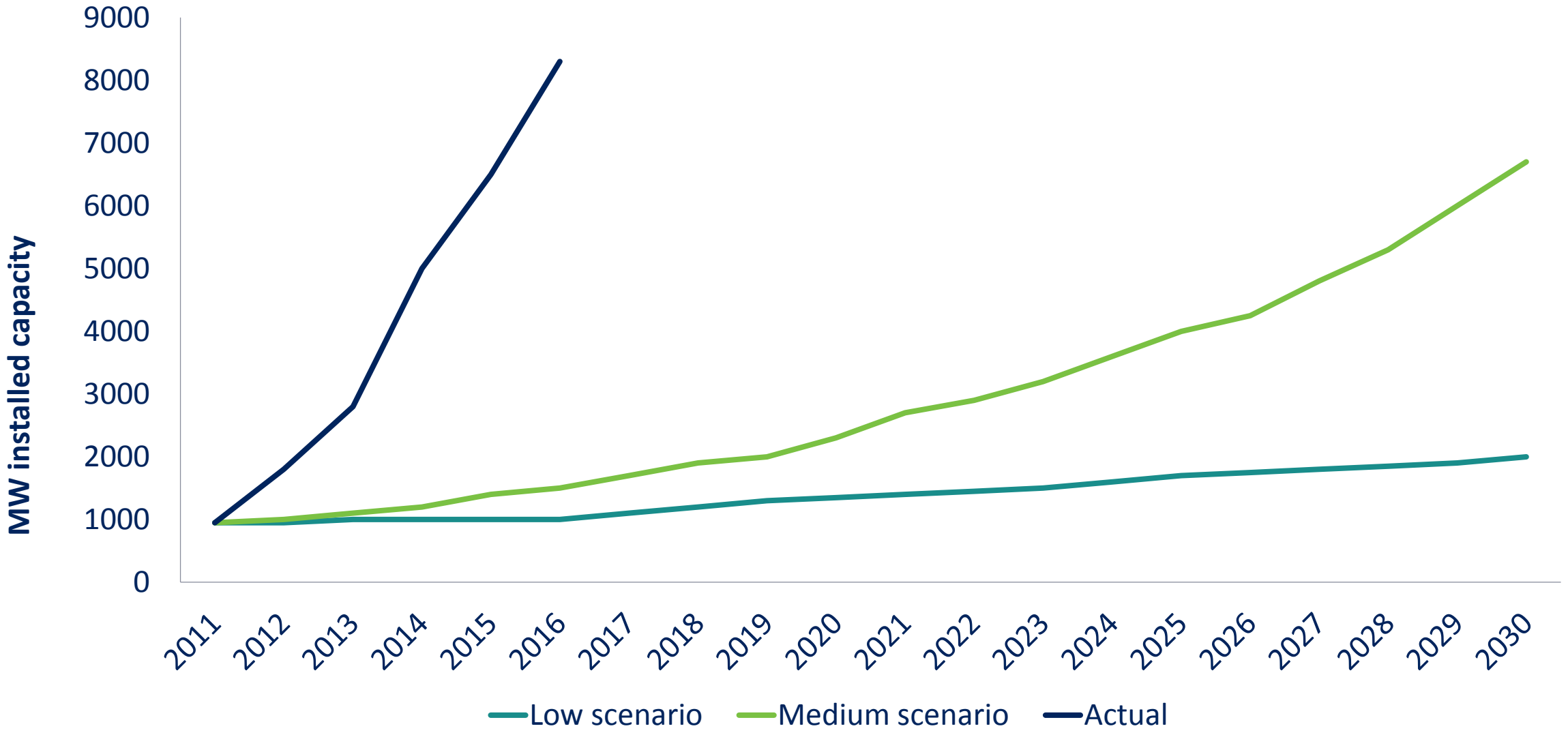
Domestic demand profile 2012/2035



Our challenges

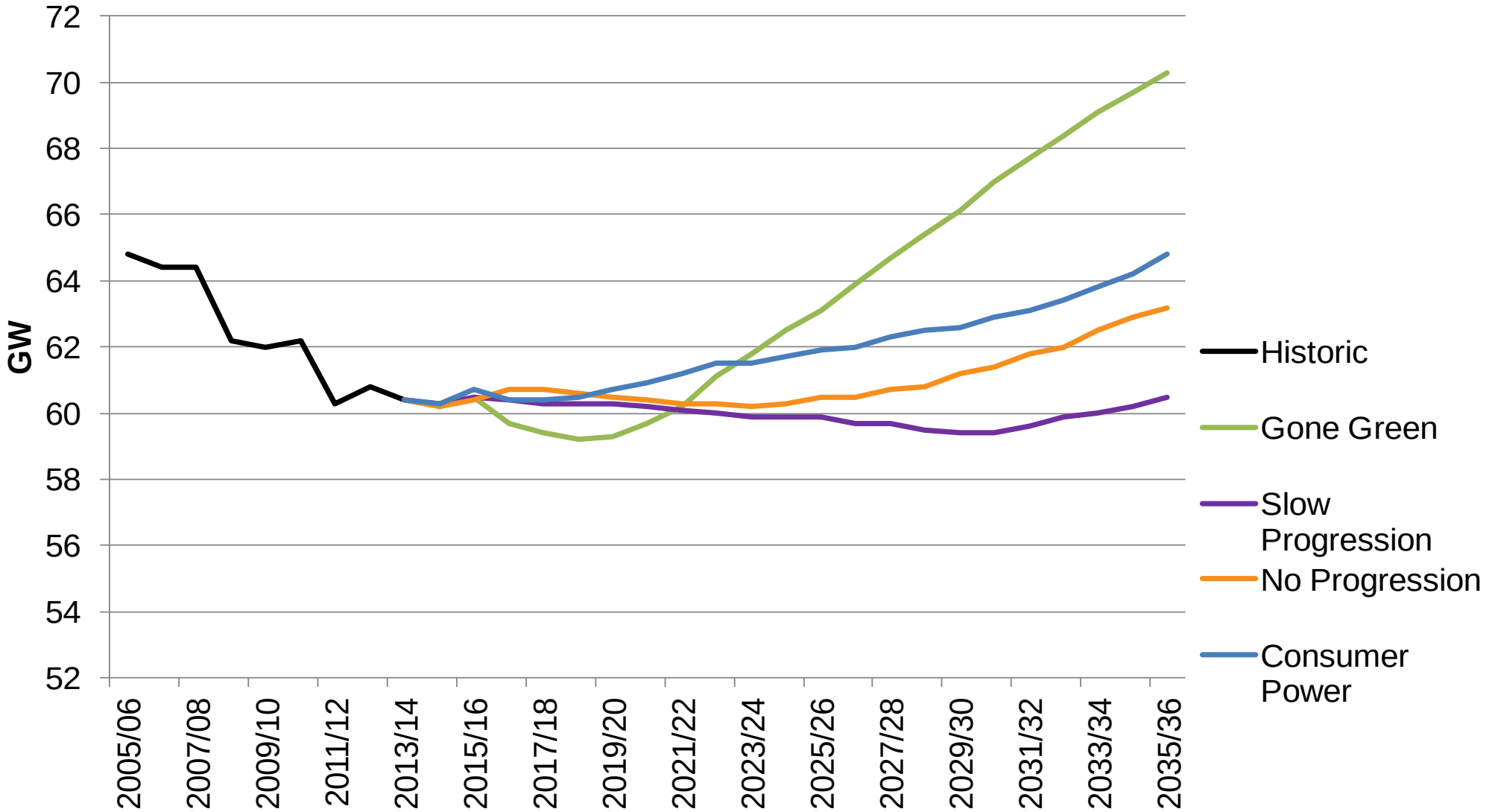


PV uptake



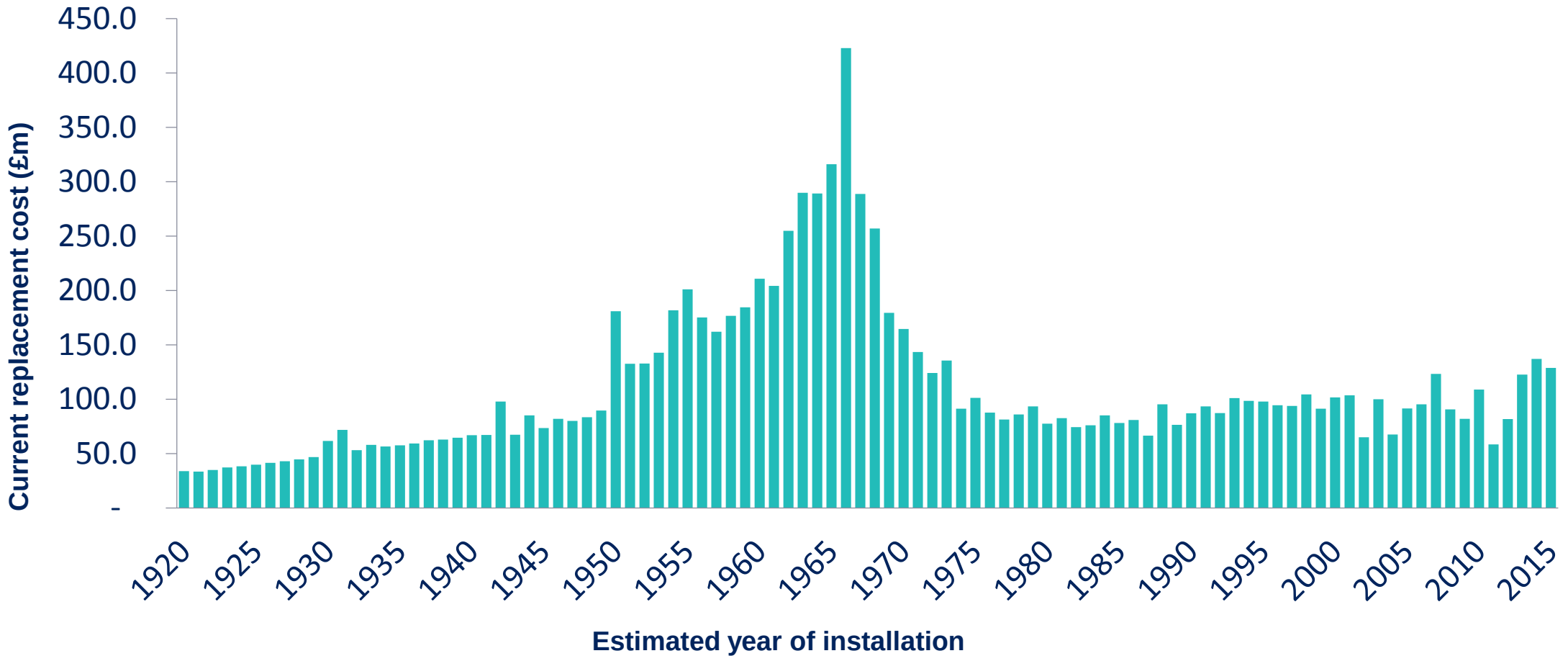
Source: EA Technology 2012, DECC

National Grid's future energy scenarios 2015

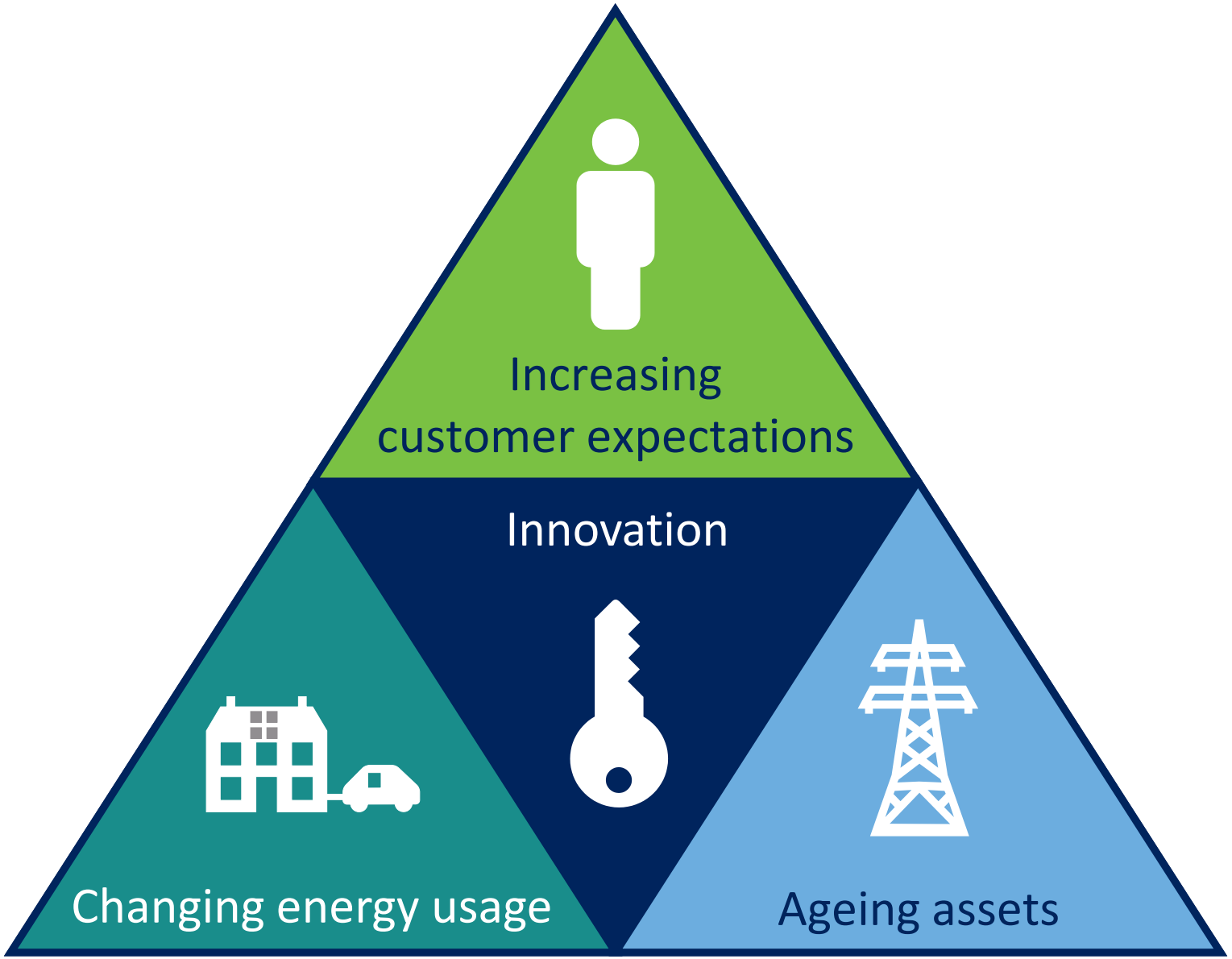


Ageing asset base

Age profile of assets



Our challenges in summary



Networks innovation in GB

Research and technology demonstration	LCN Fund, TSB, ETI and other sources has ensured GB is well placed	ENA central to co-ordinating developments through smarter networks portal	DECC/ Ofgem Smart Grid Forum

Foundations are in place to deliver the benefits

Innovation funding

Before RIIO-ED1			RIIO-ED1	
Innovation Funding Incentive	Low Carbon Networks Fund Tier 1	Low Carbon Networks Fund Tier 2	Network Innovation Allowance	Network Innovation Competition
0.5% of price control turnover (£2m/pa)	0.5% of price control turnover Small scale demonstration	Central fund for big projects	Replace IFI & LCN Fund T1 0.7% turnover (£3m/pa)	Central fund for big projects

Number of projects

Discretionary Award	TIER 2 / NIC	TIER 1 / NIA	Innovation Funding Incentive

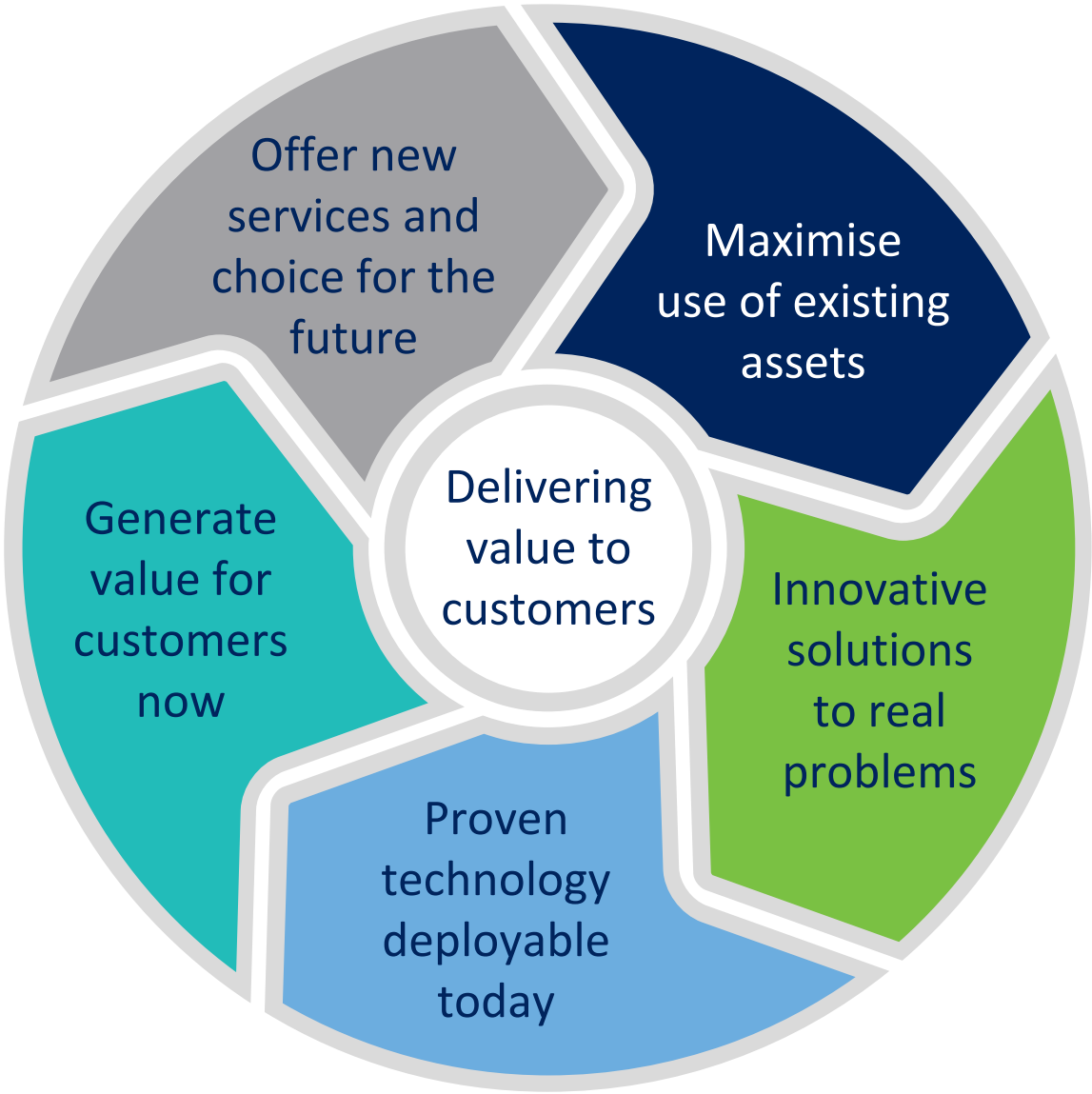
Value and oversight

Innovation in Electricity North West

Five consecutive successful second tier / NIC bids	Leading or supporting £7.5 million of NIA projects	Only DNO to spend all of our innovation allowance	Collaborative partnerships with SMEs, universities and National Grid	Stimulating supply chain development

Leading our industry to a low carbon future

Our innovation strategy



Our key projects

		Technical innovation		New commercial contracts
C2C	£10 million project combines proven technology and new commercial contracts to release network capacity			
CLASS Customer Load Active System Services	£9 million project seeks to demonstrate that electricity demand can be managed by controlling voltage…without any discernible impacts on customers	Lower network costs Faster connections	Lower balancing costs Reduced carbon	Lower energy costs
SMART STREET	£11.5 million project combines innovative technology with existing assets to make networks and appliances perform more efficiently	New controllable switching devices stabilise voltage	Allows us to lower voltage levels	Networks and appliances work in harmony
RESPOND	£5.5 million project. The first UK demonstration of an active fault level management solution that avoids traditional network reinforcement	Faster LCT adoption	Less disruption	Lower bills
Celsius	A £5.5m project which provides a co-ordinated approach to managing the temperature of electrical assets in distribution substations	Improved knowledge of distribution assets	Avoids early asset replacement	Releases additional capacity

QUESTIONS & ANSWERS

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