



Flexibility – Risk vs. Reward

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This year...



269,000

Homes



688,000

People served



5,686

Customers received our
50% discount, thanks to
our 'Social Tariff'



99.95%

Overall drinking water quality

161

Million litres of
water supplied
per day



835 km²

Distribution area

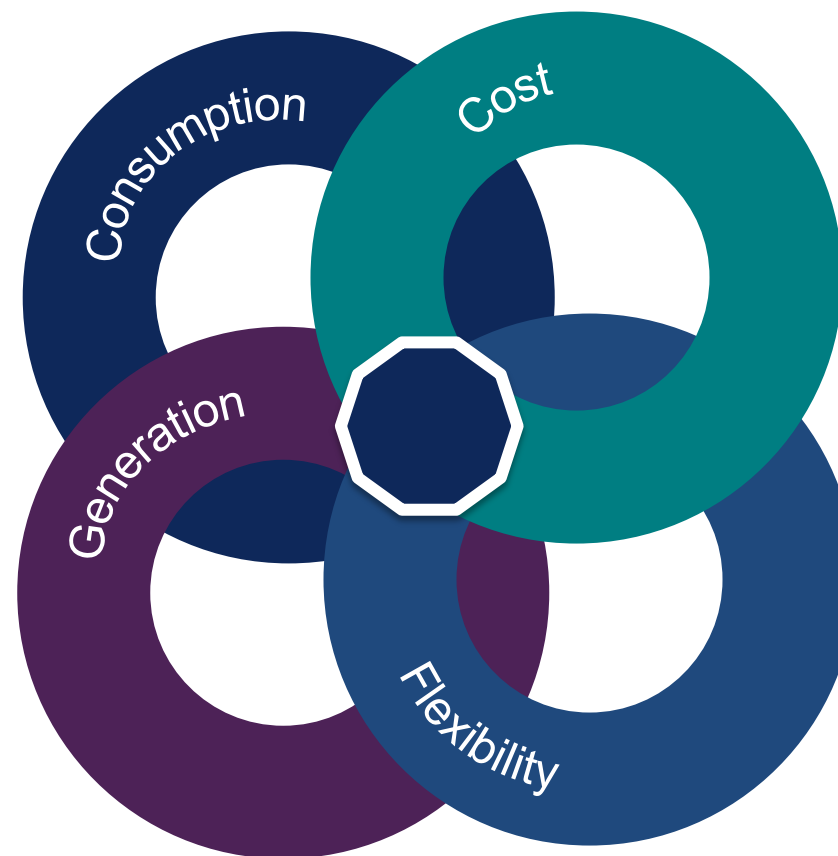


17,000

Businesses

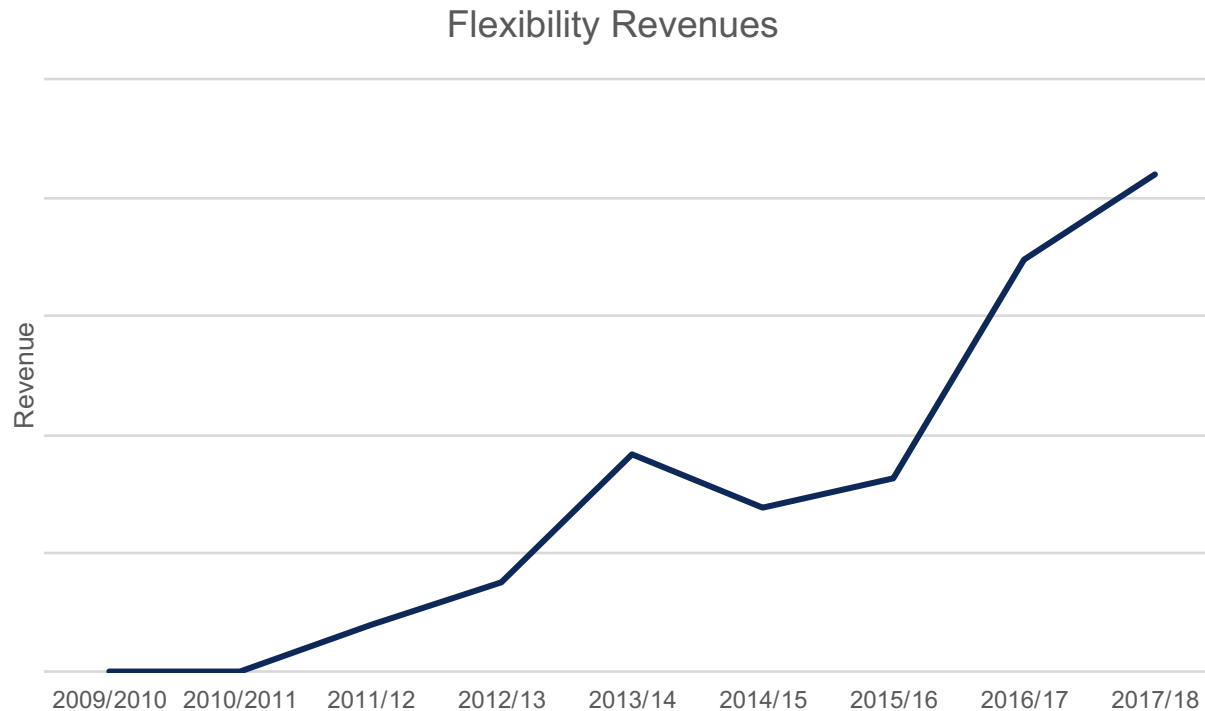


Traditionally there have been four elements to our energy strategy



Where cost, consumption, generation and flexibility come together there is value for us and our customers

We have been providing flexibility for several years



- We have participated in demand side activities since 2011
- These include load shifting
 - DUoS red band avoidance
 - Triad avoidance
- Responding to market signals using back up generation
 - STOR
 - Capacity Market
 - Triad export

But the environment in which
we're operating is changing

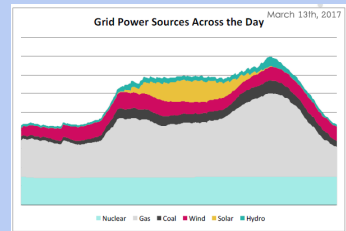
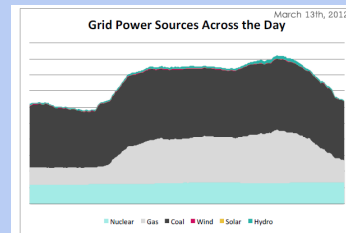
By 2025 the UK generation mix will look very different

Increased renewables

Offshore wind expected to almost triple by 2025 (5.2GW to 14GW) (Govt predictions)



Phase out coal



UK govt has committed to phase out coal by 2025

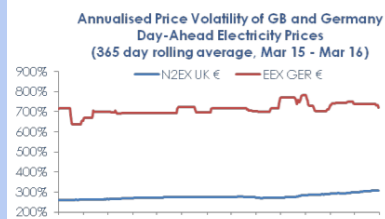
1.5 million EVs

By 2025, 1.5 million EVs and PHEVs on road in UK (DfT).



This presents further challenges and opportunities

More volatility



Increased renewables and variability leads to market volatility as seen in Germany

More flexibility

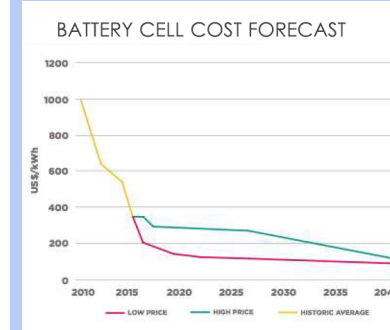
- 25GW flexibility required by 2030 (Aurora)
- DSR market forecast to be worth £500m in UK by 2030 (National Grid).

Move away from diesel

MCPD and focus on rate of change of frequency make diesel back-up generators less lucrative source of flexibility

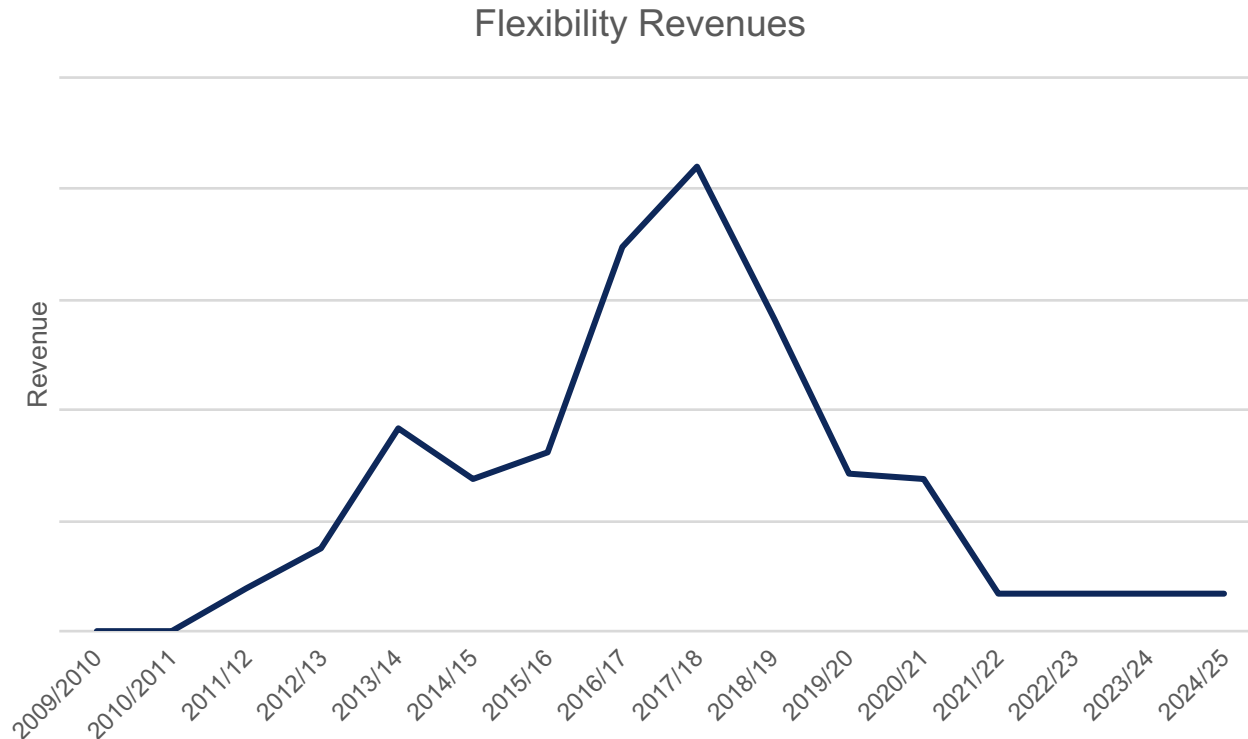


Batteries



Huge reduction in cost and government funding for R&D

There are challenges but ultimately opportunities



- If we don't look for new flexibility opportunities, we will see a decrease in the savings and revenues we receive.
- We need to look at how we can use more of the flexibility in our process and make smaller changes, more of the time.
- This will require investment in controls and variable speed drives
- We will also need access to new flexibility opportunities such as the balancing market

We need to get our Board comfortable with different risks

- Water industry is rightly cautious in managing cost to minimise impact on customers
- We operate within a 5-yearly budget cycle and budget certainty minimises risks to customers
- Accessing value from the balancing market will need a new risk management framework for energy

