# Aurora keynote:

## The race to deploy and integrate offshore wind in Great Britain

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# Renewables Summit

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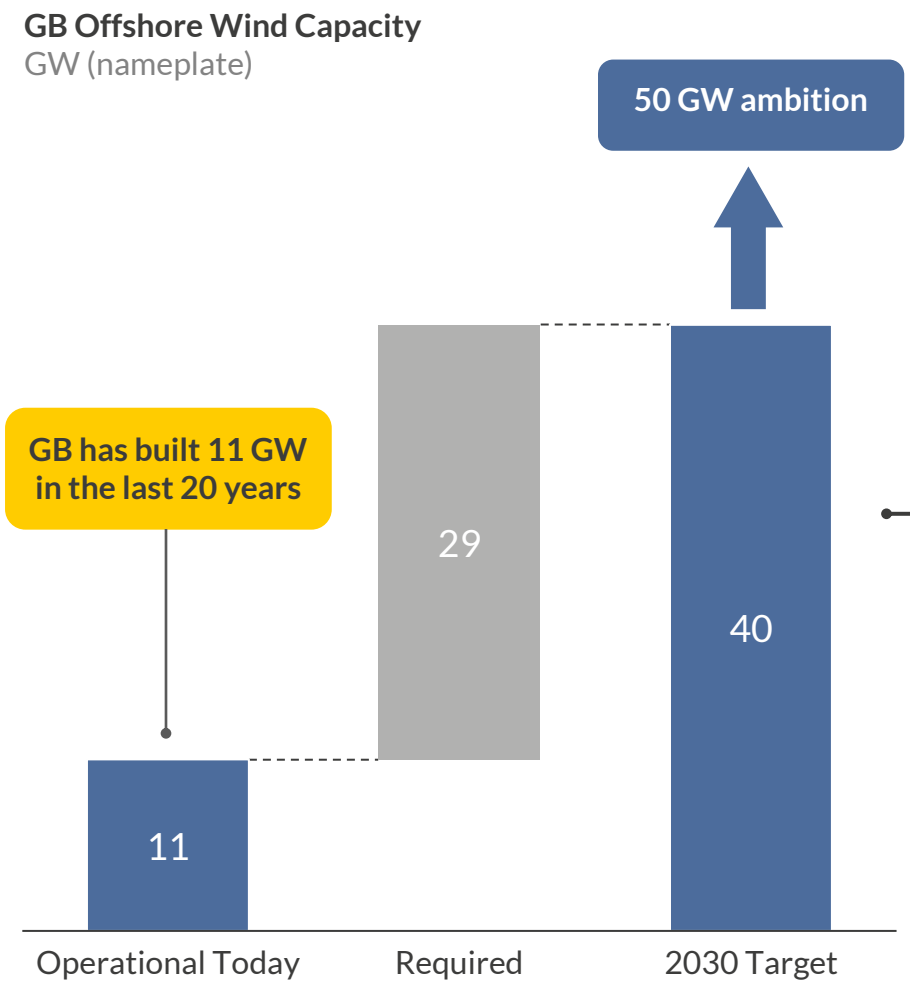
# The UK has high ambitions for offshore wind, can we deliver?




**Are we ready to deliver 29 GW or more in 8 years?**

| | |
|---|---|
| Technological Progress | Turbine sizes grown from 2 MW up to 13 MW |
| Market Players | 20+ new organisations involved in devt. & financing |
| Seabed | 70+ GW of seabed targeted for development |
| Government Support | CfD frequency increased from every two years to one |
| Energy Security Strategy | New goal to cut planning time from four years to one |

Sources: Aurora Energy Research, The Crown Estate, BEIS, Ofgem

# Aurora's Central forecast sees GB reaching 33 GW by 2030, based on the current pipeline and development timescales

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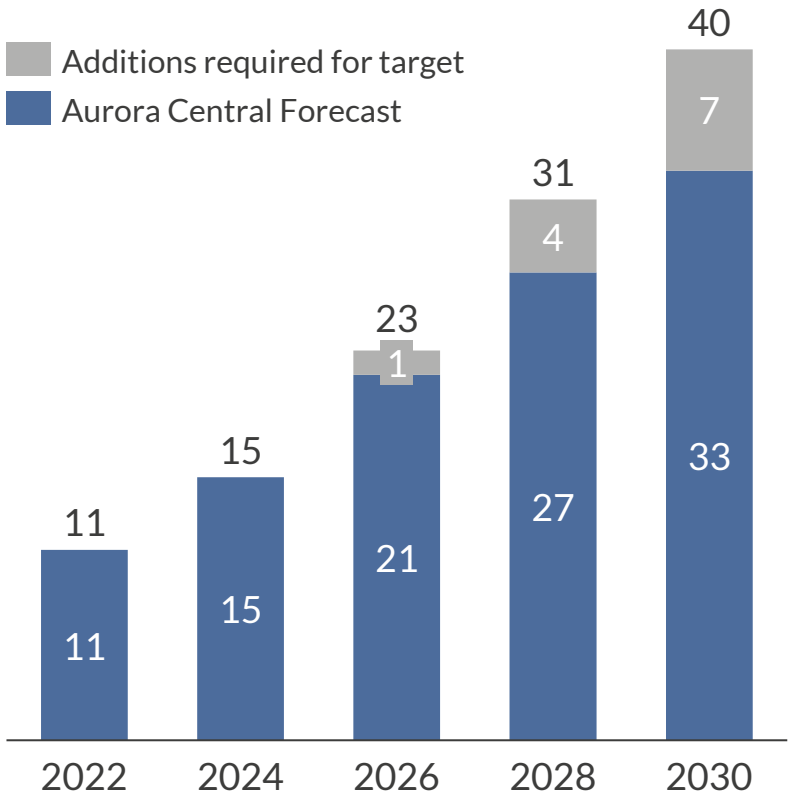
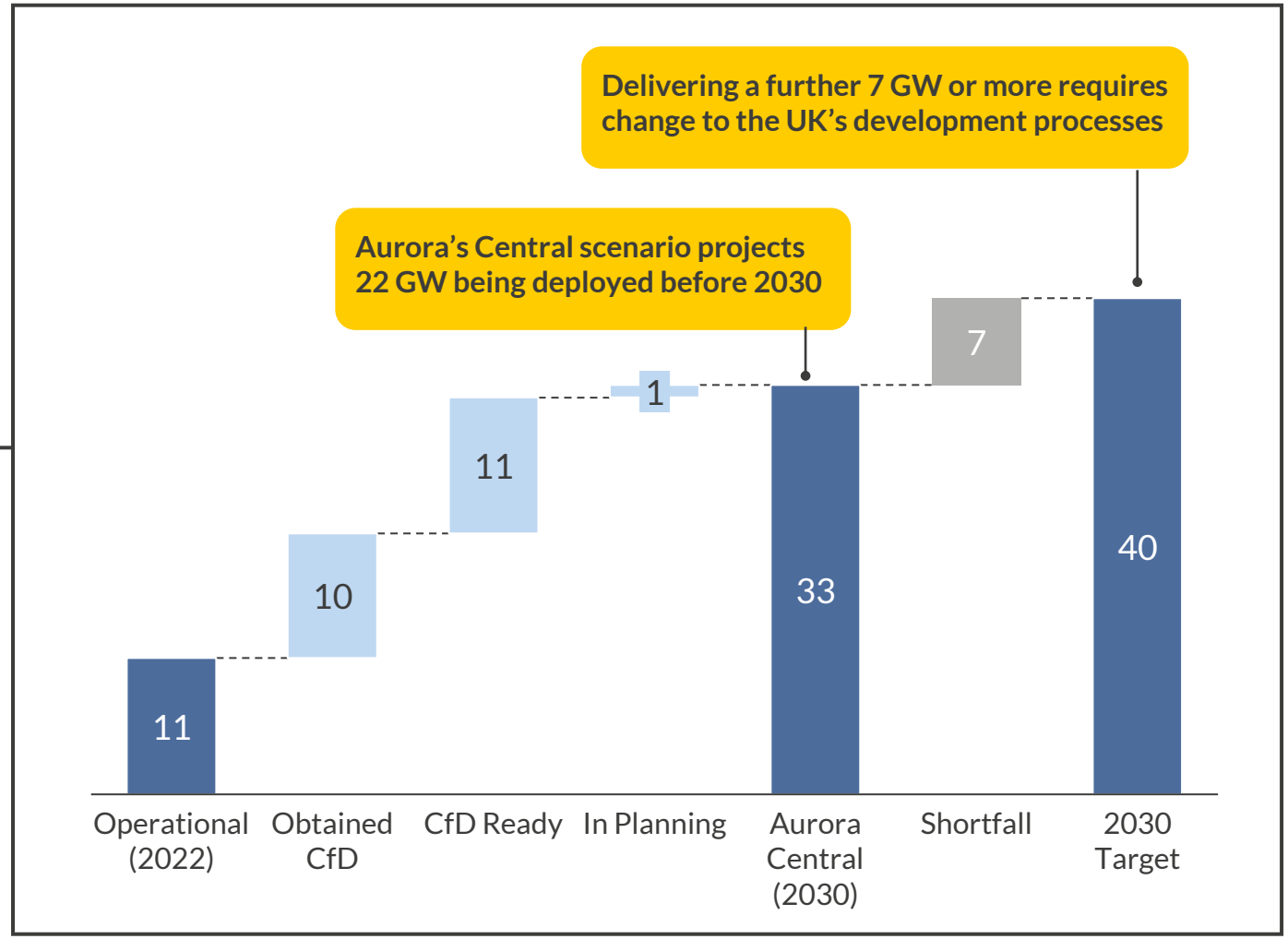
**GB Offshore Wind Capacity**
GW (nameplate)

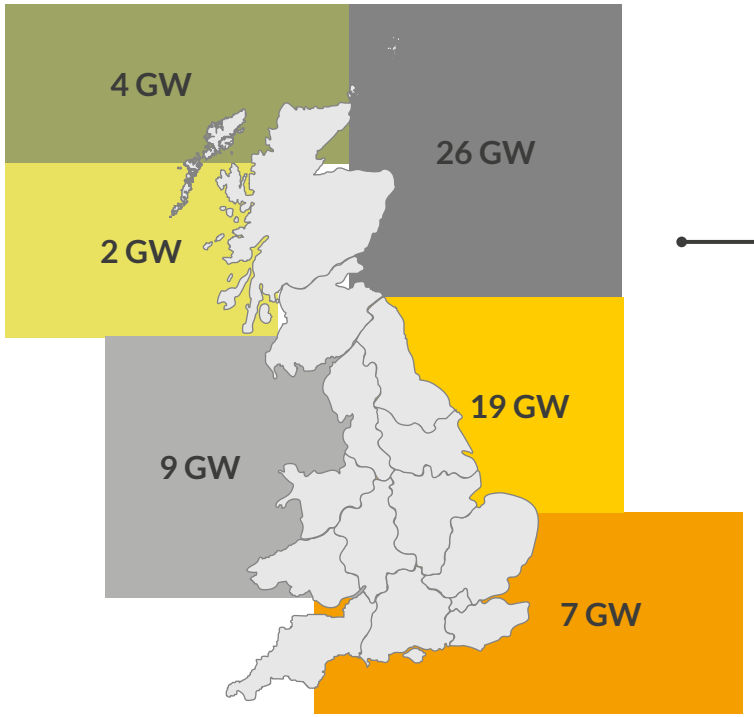



Sources: Aurora Energy Research, The Crown Estate, BEIS, Ofgem

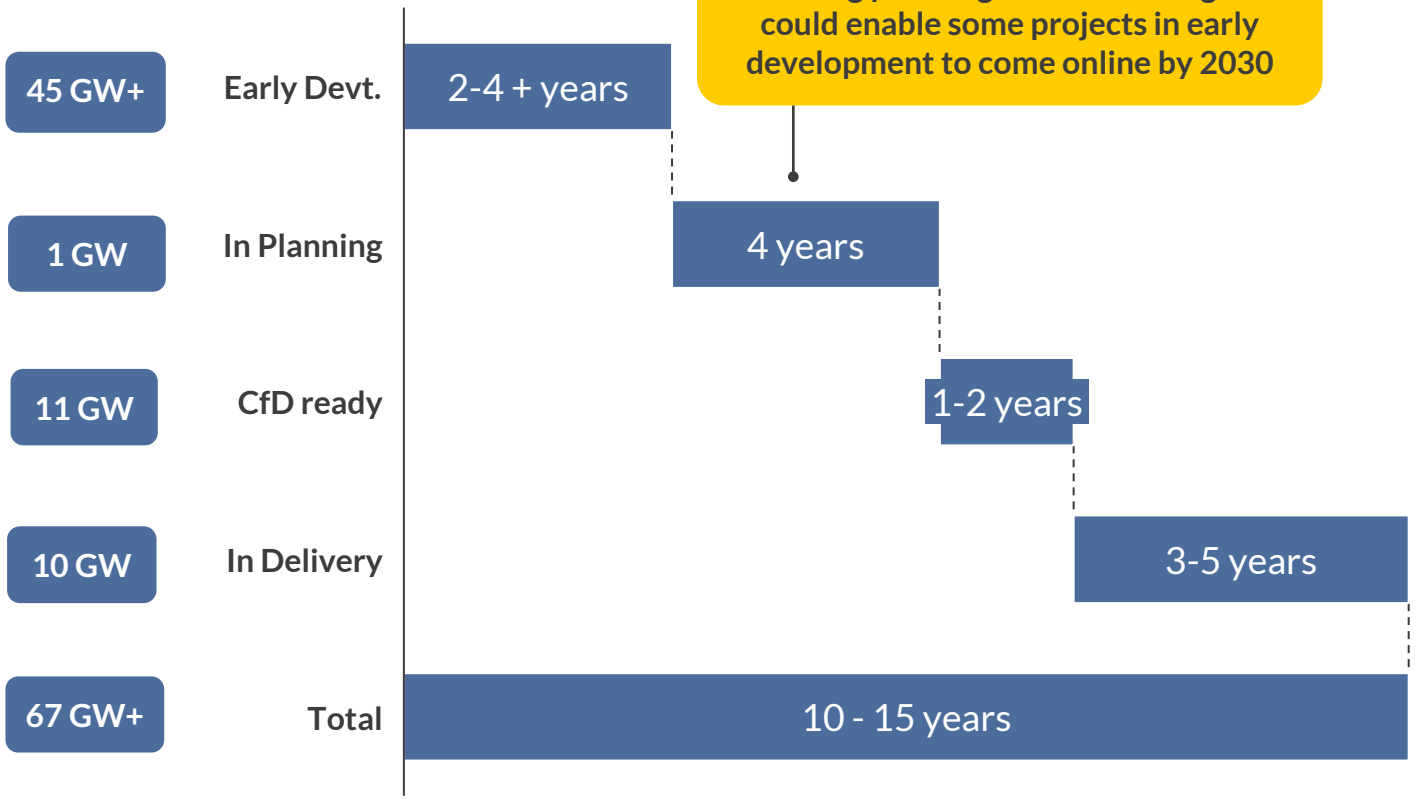
# The vast majority of GB's pipeline is more than a decade away from delivery, but reducing planning and consenting time could change this

**GB's has the world's largest offshore wind development pipeline totalling ~70 GW**




**GB Offshore Wind Pipeline**
GW / Average years from delivery

**Reducing planning and consenting time could enable some projects in early development to come online by 2030**




Sources: Aurora Energy Research

# Europe's gas crisis has increased GB power prices, reducing the cost of supporting an additional 7 GW to £1.4 billion (NPV)

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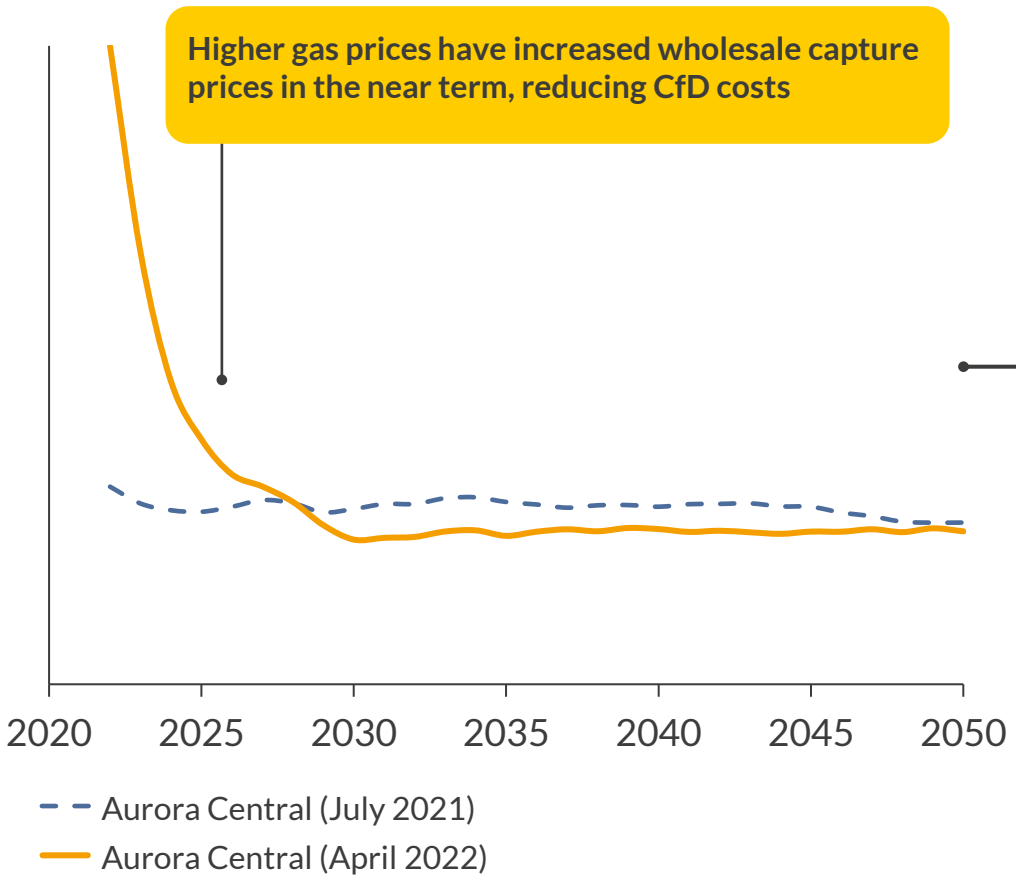
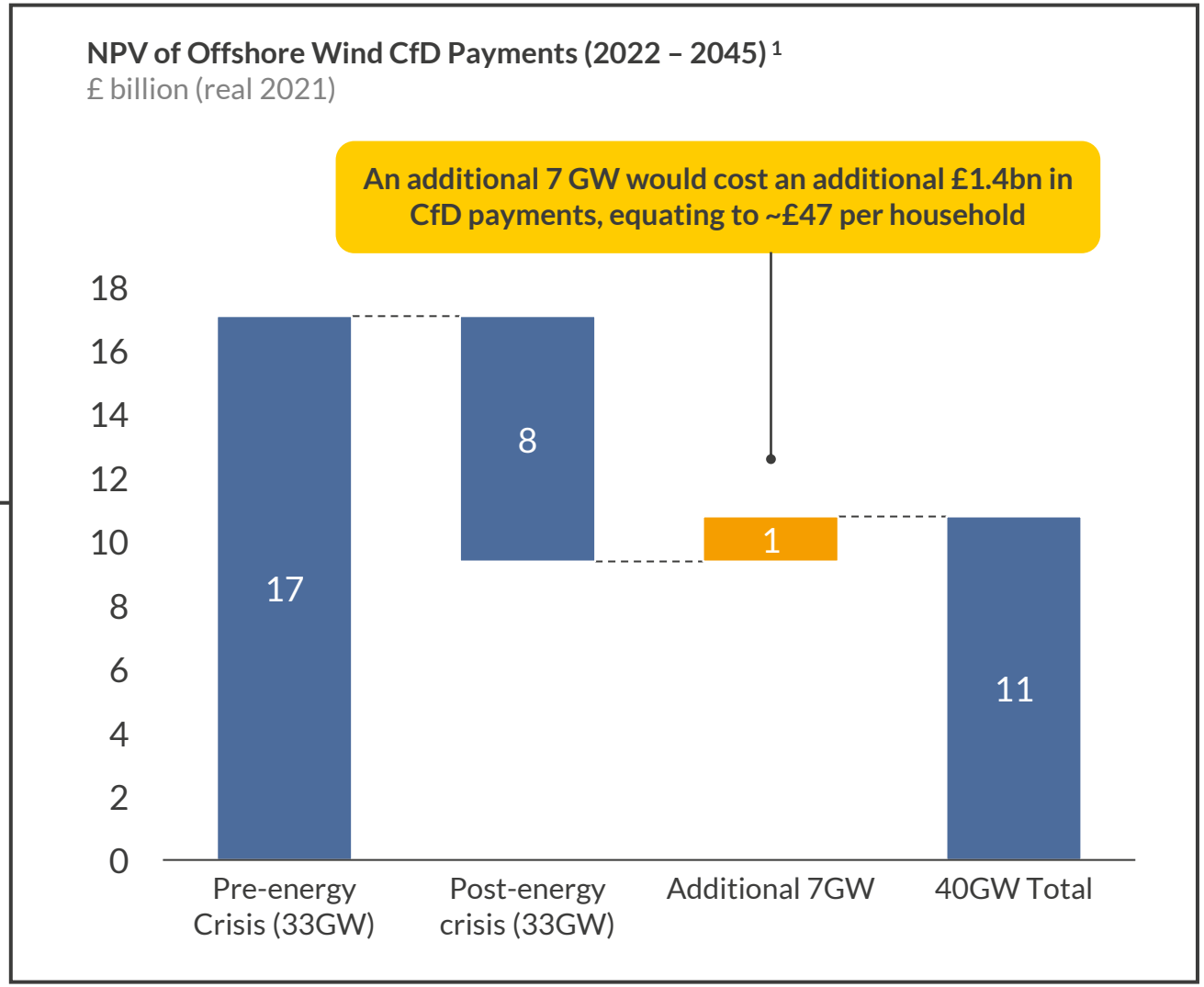
**Offshore Wind Capture Price**
£/MWh




**NPV of Offshore Wind CfD Payments (2022 – 2045)** [1]
£ billion (real 2021)




1) Assumed 5.0% discount rate, £40/MWh (real 2012) strike price assumed for additional 7GW

Sources: Aurora Energy Research, LCCC

# Adding 7 GW to Aurora Central will displace power sector emissions, however combining with flexible demand will absorb its full potential

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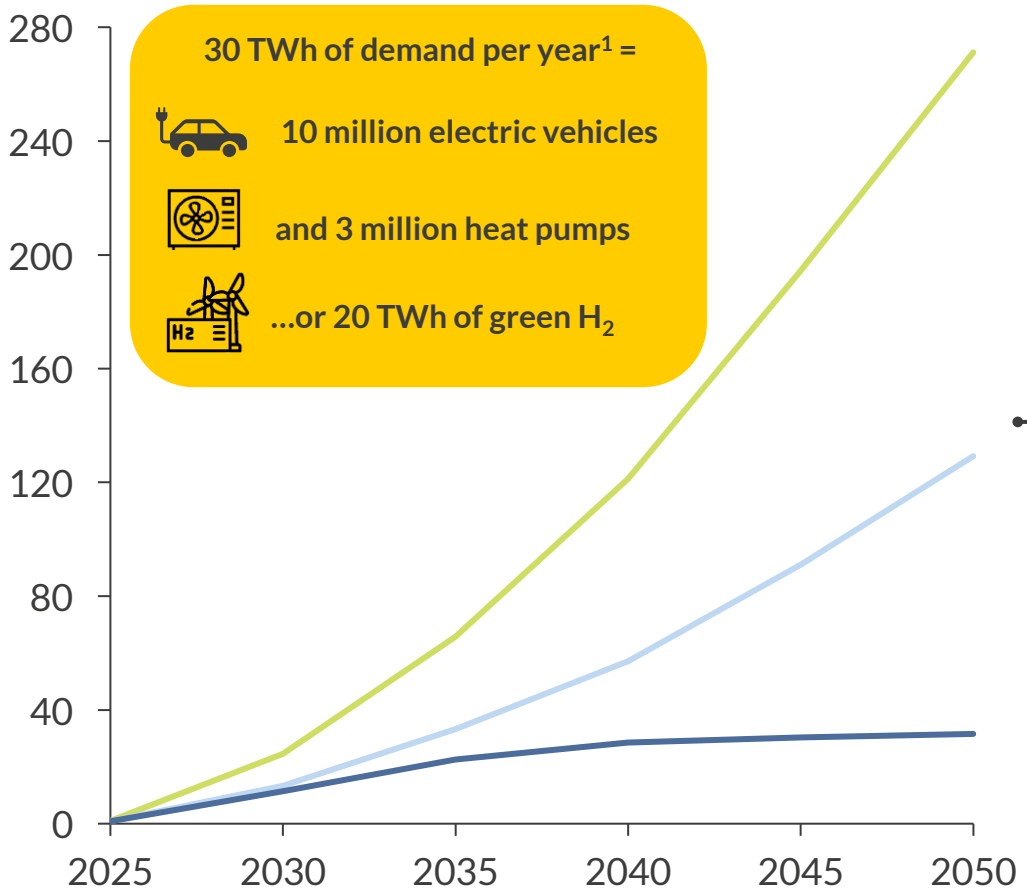
**Cumulative Avoided Emissions vs Aurora Central**
$MtCO_2$




**271 $MtCO_2$ = 77% of total UK emissions in 2019**

**Change in Emissions vs Aurora Central (2025 – 2050)**
$MtCO_2$

| Scenario | Power Sector | | Wider Economy | | Total |
|---|---|---|---|---|---|
| +7GW + 30TWh flexible demand | -16 | + | -255 | = | -271 |
| +7GW + 30TWh inflexible demand | +3 | + | -132 | = | -129 |
| +7GW, no extra demand | -32 | + | 0 | = | -32 |

1) Average EV demand of 1.8MWh; average heat pump demand of 4MWh; assumed electrolyser efficiency of 68%.

Sources: Aurora Energy Research, UK Government

# Key takeaways

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GB must install 29 GW of offshore wind in the next eight years to reach 40 GW by 2030, or 39GW to reach 50GW

Aurora's April 2022 Central forecast sees GB reaching 33 GW of installed offshore wind capacity by 2030

Shortening planning consent time down from four years to one can increase the likelihood of GB reaching its 2030 targets

Europe's gas crisis has increased wholesale power prices, reducing the cost of offshore wind CfD payments by ~45%

Smart electrification and hydrogen are key for integrating offshore wind and maximising its decarbonisation potential


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