



HM Government

# Future renewable opportunities in the UK

Clean Power Directorate  
Department for Business, Energy and Industrial Strategy

For external use, June 2020



# Overview

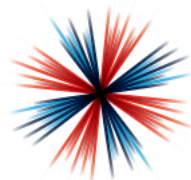
- Context
  - Historical growth of renewables
  - Further decarbonisation of the UK power sector – key role for renewables
  - Evolution of the policy landscape
- The mechanics of the CfD scheme
- The future opportunity
  - Renewable ambitions
  - Opportunities when locating in the UK
- Impacts of Covid-19
- Next steps



# Context



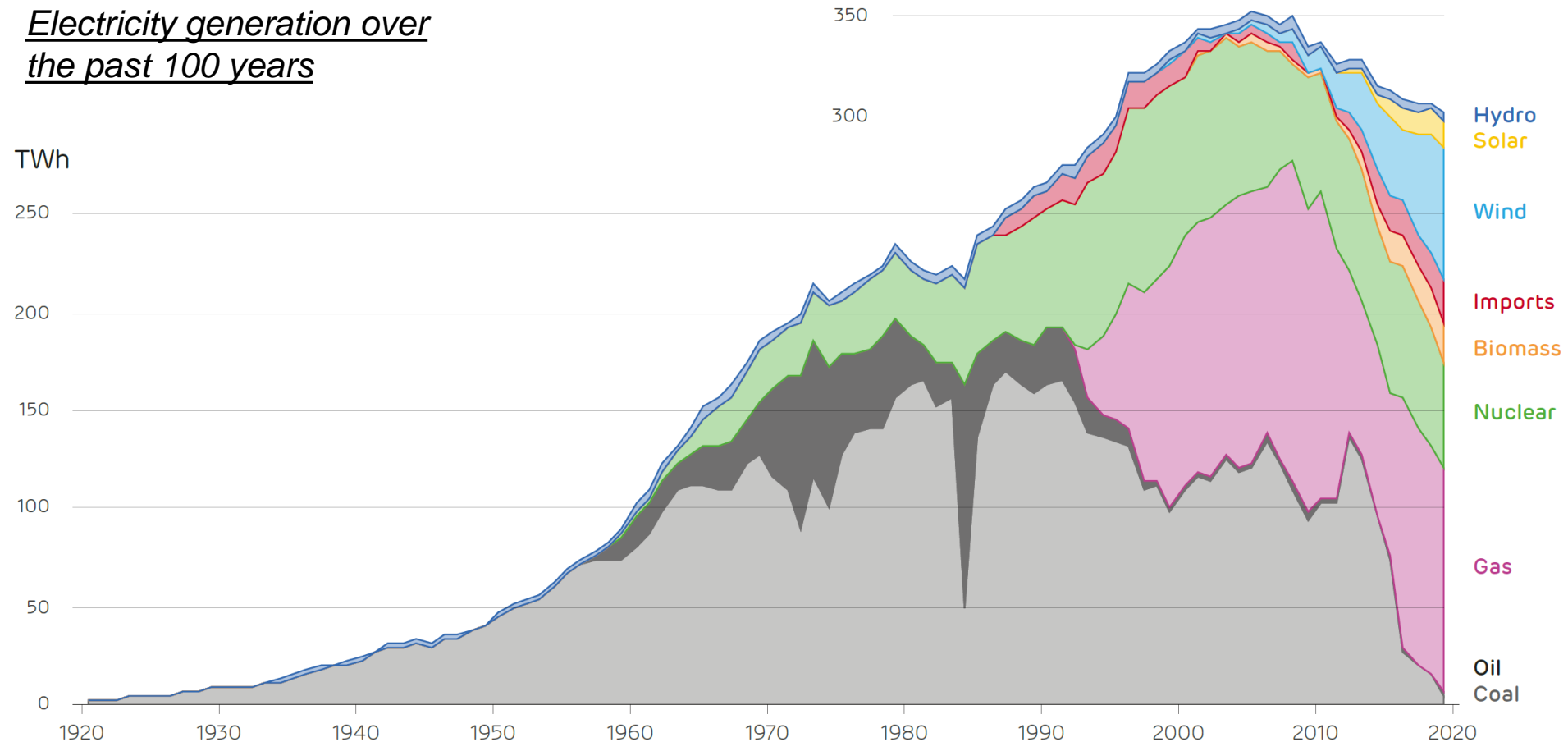
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# UK power generation: historical

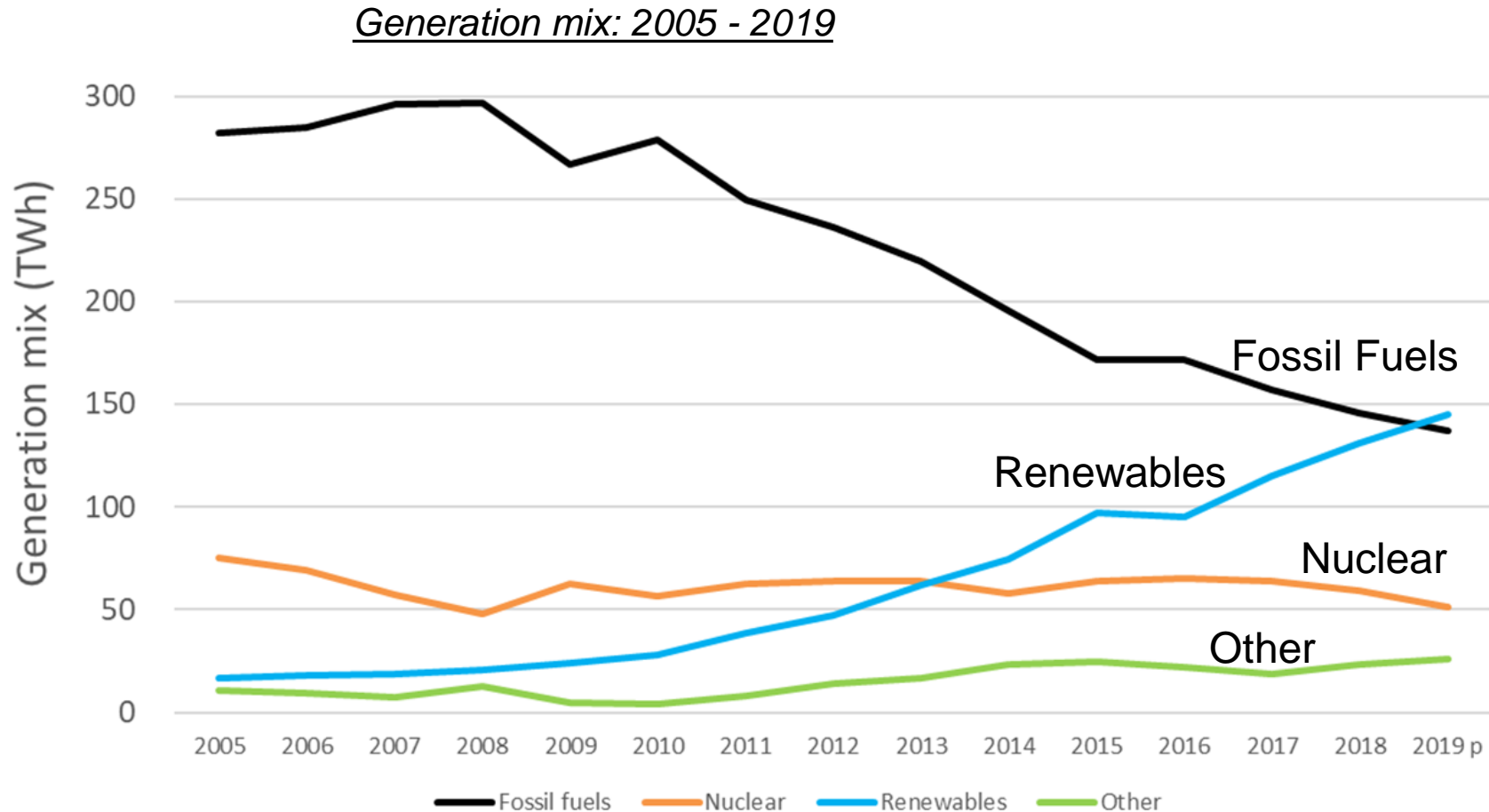
Electricity generation over the past 100 years



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Source: Drax, Electricity Insights, Q4 2019

# UK power generation: today

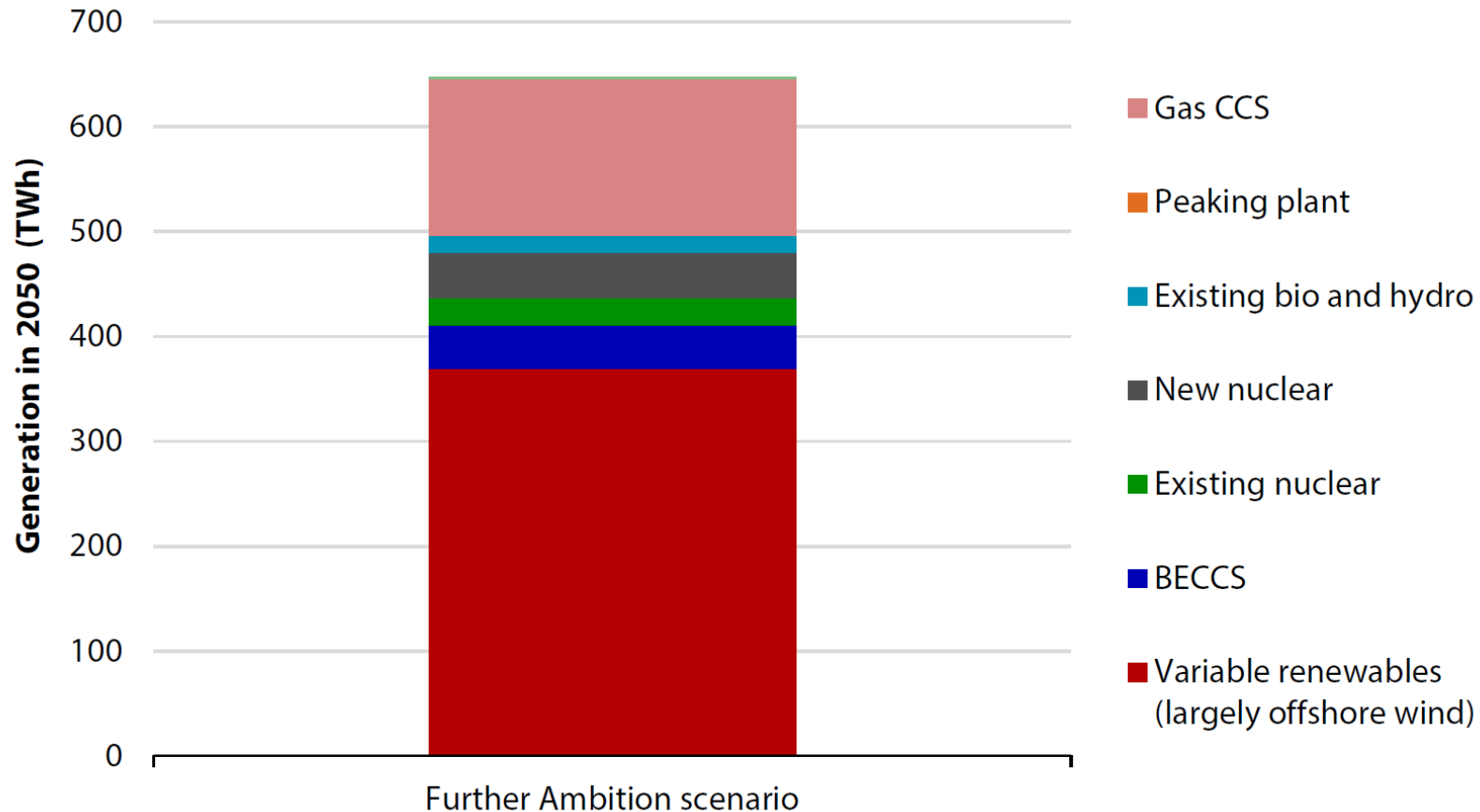


Source: BEIS, Energy Trends, p=preliminary results for 2019



# UK power generation in the future

*Illustrative 2050 generation mix for low-carbon power sector*



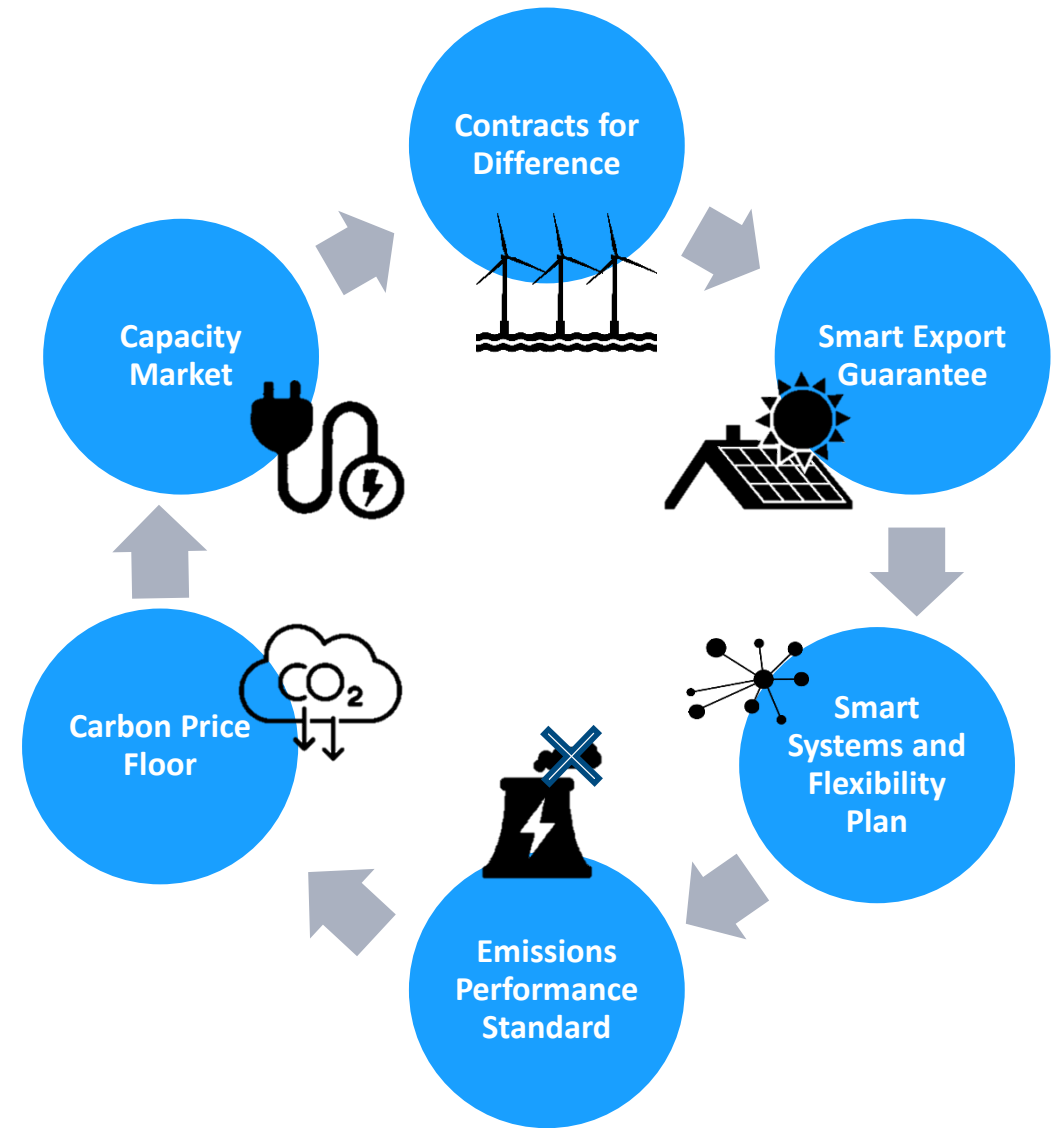
# Policy evolution

- 2002-2017: Renewables Obligation
- 2011: Electricity Market Reform
- 2014: Contracts for Difference (CfD) scheme
  - 2015: first CfD auction
  - 2017: second CfD auction
  - 2019: third CfD auction
  - 2021: fourth CfD auction scheduled



# Current policy landscape

- Large-scale renewables – primarily supported by the CfD scheme
- Small-scale renewables – supported by the Smart Export Guarantee (from January 2020, following the closure of the Feed in Tariff scheme)
- Network transformation – being undertaken following the Smart System and Flexibility Plan
- Economy wide decarbonisation – incentivised using the Carbon Price Floor
- Removal of most polluting power generation – through the Emissions Performance Standard
- Security of supply – delivered by the Capacity Market

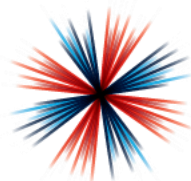




# The CfD scheme



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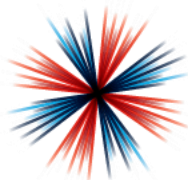
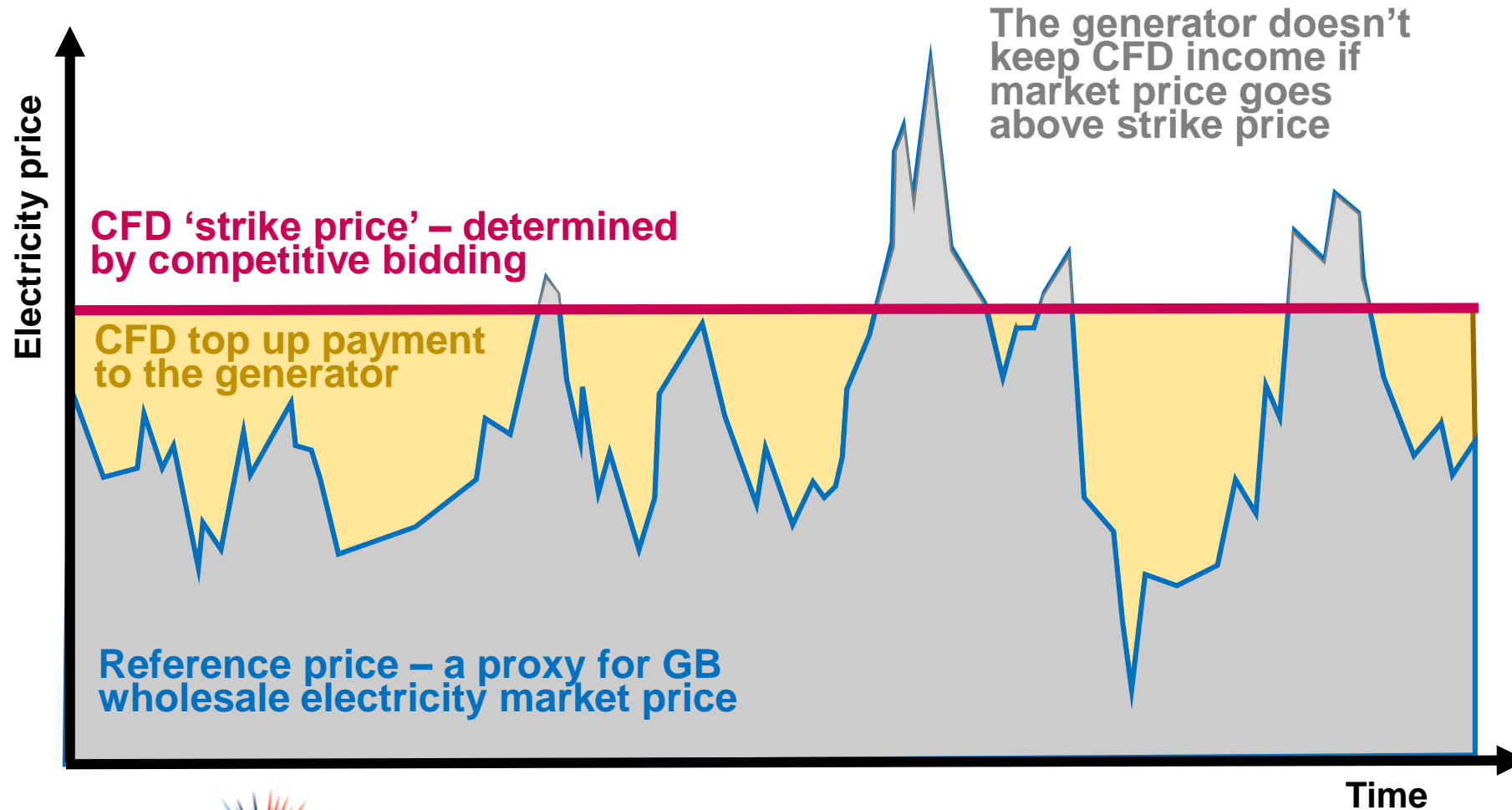
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# What are Contracts for Difference? (CfDs)

- Introduced to support deployment through **competitive auctions**.
- Purpose is to provide **long-term price stabilisation**.
- **Private law contracts** between generators and a government-owned company.
- The cost of the scheme is recouped via the Supplier Obligation, a levy on all electricity suppliers.



# How do they work?



# Benefits of CfDs

## Investors

- Removal of wholesale electricity price exposure

## Developers

- Early certainty and security of support levels
- Reduced capital costs

## Government

- Control over spend
- Decarbonisation targets

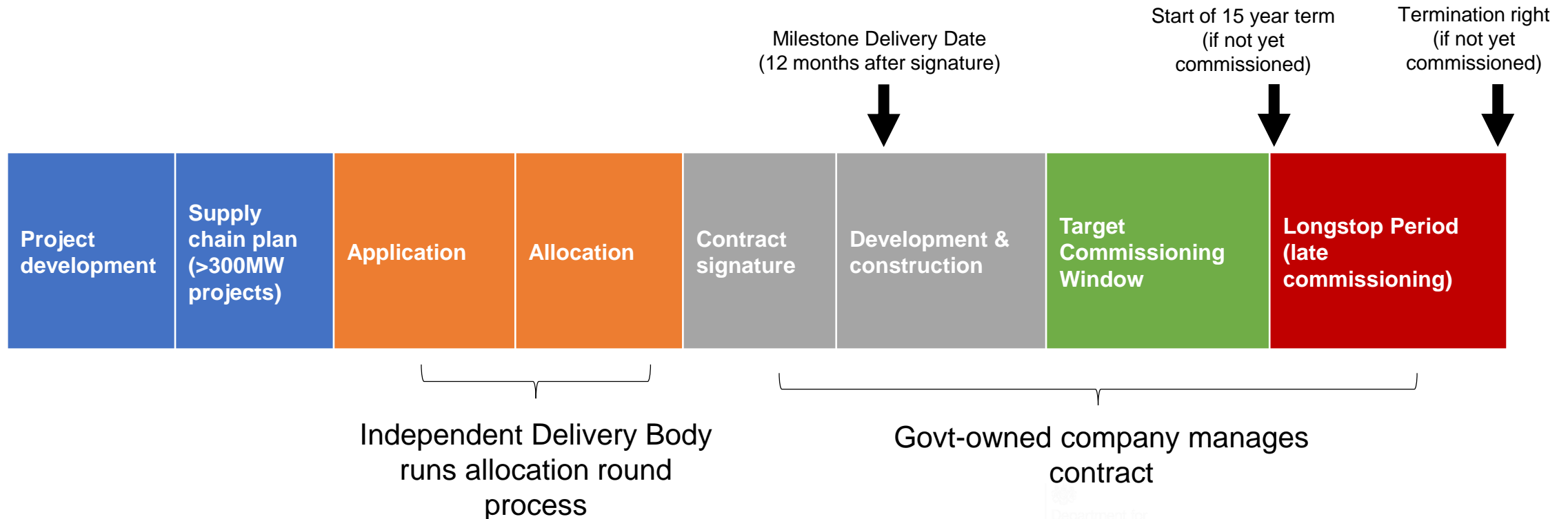
## Consumers

- Competitive allocation drives costs to consumers down
- If wholesale prices go up, consumers are protected



# Overview of allocation & delivery

The diagram below describes the journey a developer must go through in order to secure and then retain a Contract for Difference (CfD)



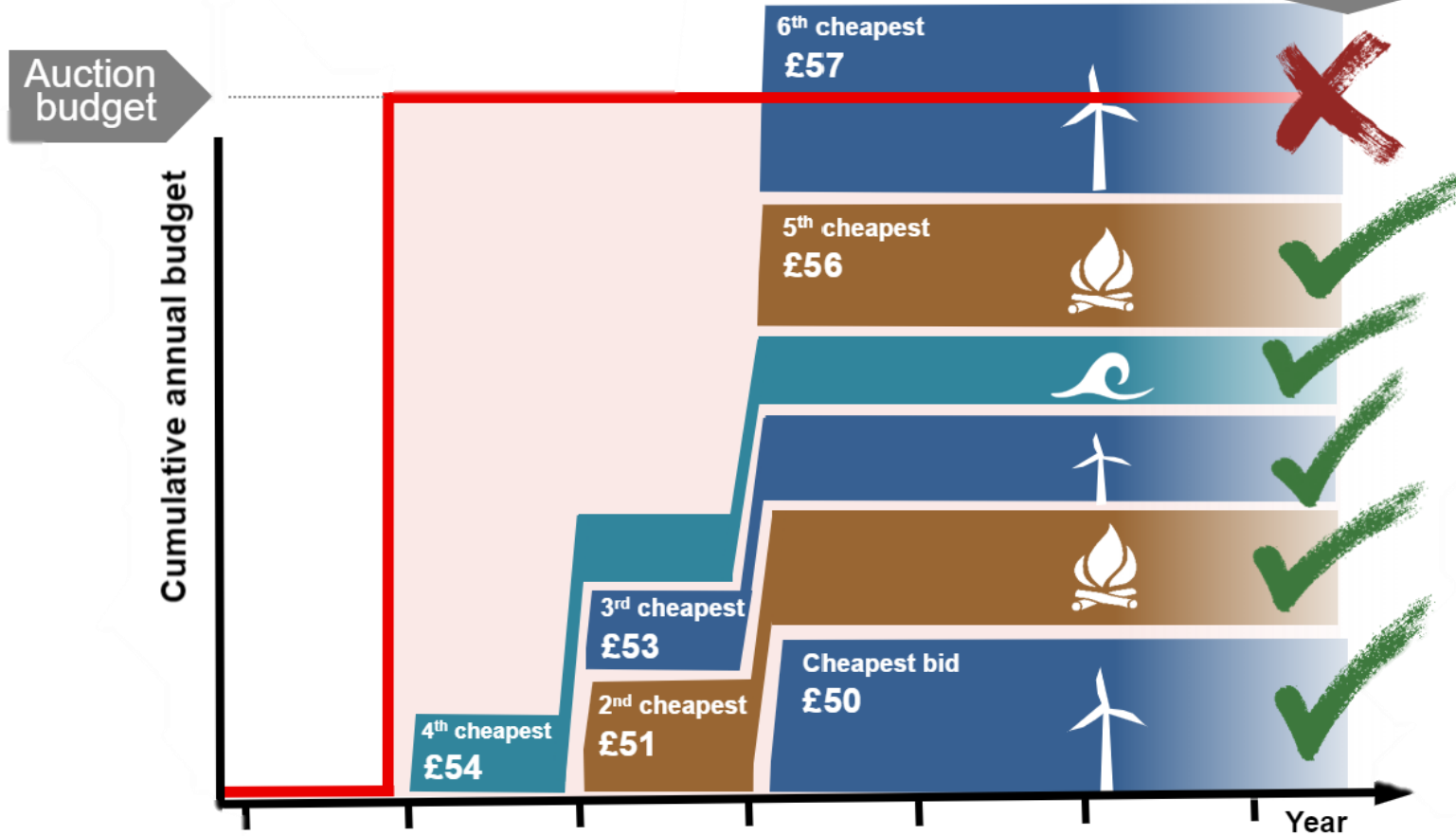
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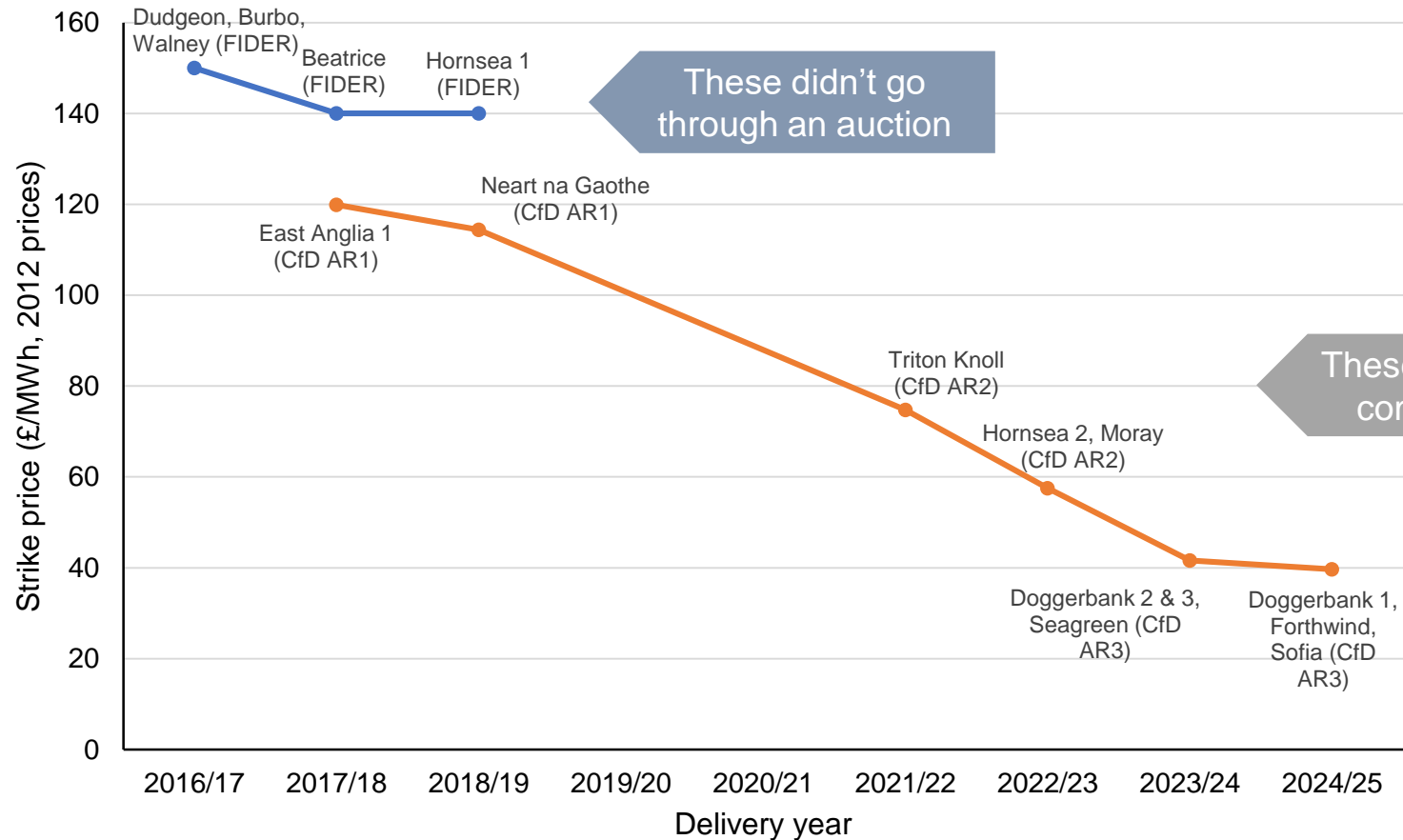
# How does an auction work?

**Auction closes**, as the cumulative spend by projects awarded CfDs reaches the maximum auction budget



# Results

- Competition has cut costs e.g. clearing prices for offshore wind have fallen between successive auctions



# The future opportunity



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# Increasing ambition

2008



Climate Change Act 2008

Introduced target of 80% emission reduction from 1990 levels

2015



Department of Energy & Climate Change

## Electricity Market Reform

- Carbon price floor
- Emissions Performance Standard
- Contracts for difference
- Capacity Mechanism

May 2019



The CCC recommended setting a net zero emissions target for 2050.

***“Reaching net-zero is both achievable and affordable”***

11 June 2019



The Prime Minister committed to net zero by 2050.

***“We will end UK contribution to climate change by 2050”***

26 June 2019



Legislation to amend the Climate Change Act to set net zero emissions by 2050 as a legally binding target came into force.



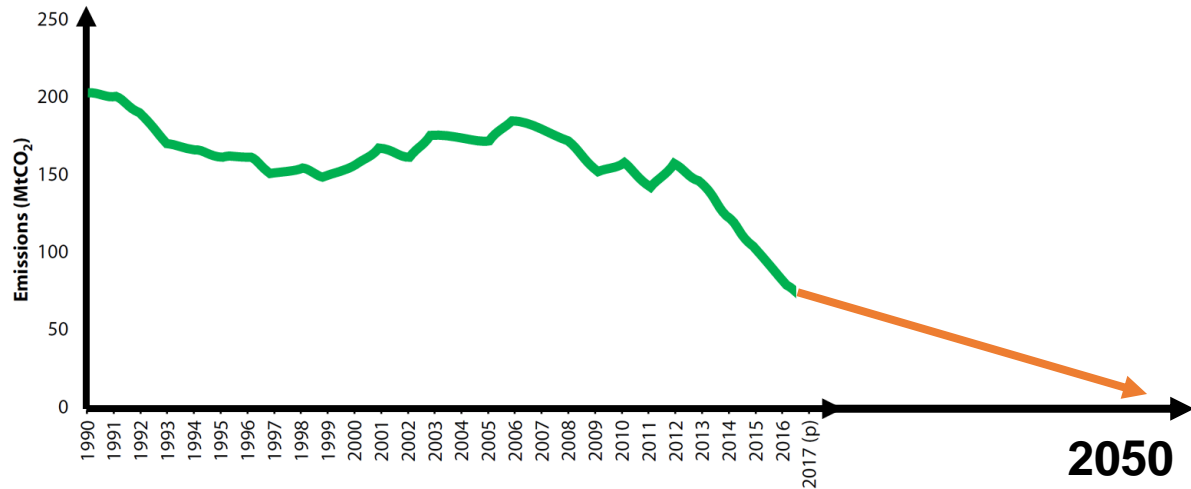
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# Decarbonising through electrification

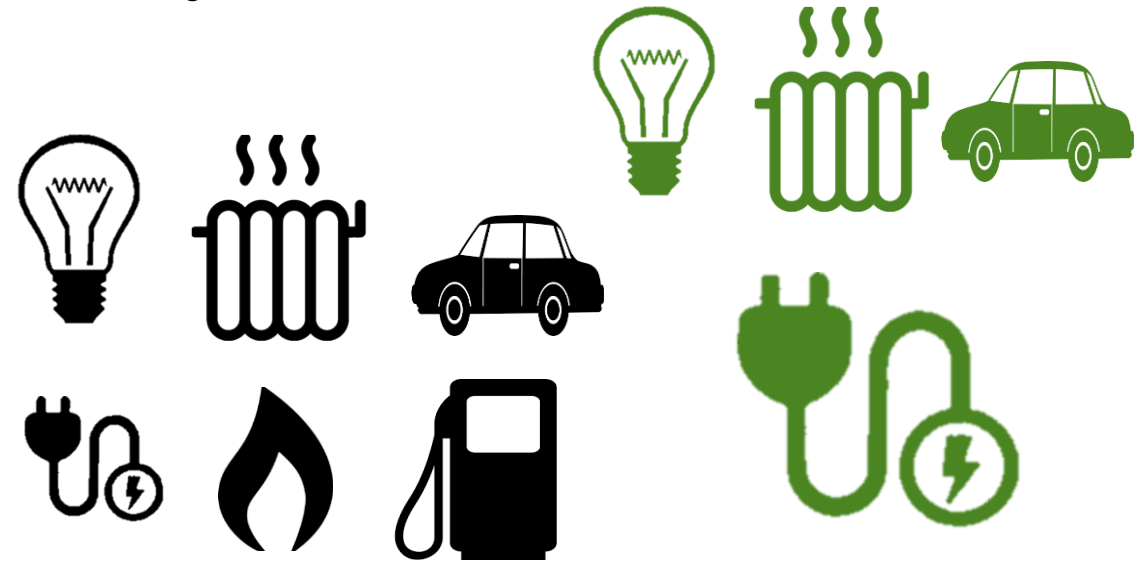
## Power sector emissions need to be minimal to meet net zero

- It is likely that residual emissions from the power sector need to be very close to zero for us to meeting our 2050 net zero target.
- Other sectors may be more difficult to decarbonise / hold more residual 2050 emissions. Therefore, focusing on minimising emissions from the power sector is likely to be efficient relative to other sectors, and can help decarbonise other sectors.



## A growing power sector

- Electrification of transport and possibly heat means much more of our energy will come from electricity.
- This could result in demand for electricity in the UK more than doubling.



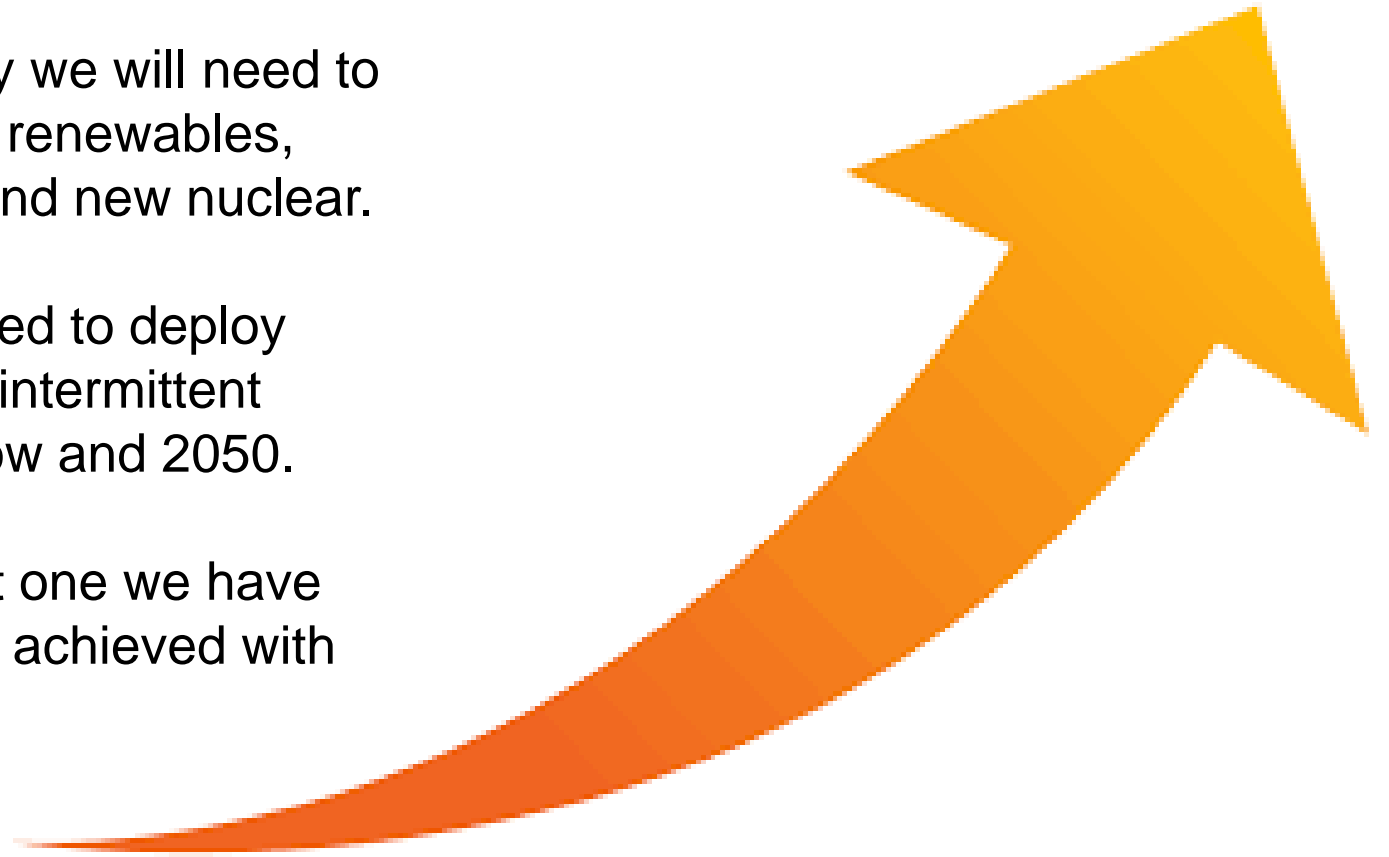
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# What does net zero mean for renewables?

- In the context of net zero it is likely we will need to accelerate the deployment rate of renewables, alongside also rolling out CCUS and new nuclear.
- The CCC suggested we would need to deploy between 5-8 GW per year of new intermittent renewable generation between now and 2050.
- This is a high level of ambition but one we have achieved before and know can be achieved with our current policy landscape.



# Key components of the UK's world-leading offshore wind sector

- **Ambition:** committed to 30GW by 2030 with 40GW by 2030 in the recent manifesto
- **Location:** excellent natural resource and geographical position positions the UK as the anchor for offshore wind in Europe
- Investable **market:** low-tax base; high skills-base; strong R&D expertise
- Existing **skills** base: UK home to high-skilled workforce with renowned engineering expertise
- **Bankability:** the CfD delivers stable returns
- **Cooperation:** the sector and government work closely together, for instance, through the OFW sector deal
- **Supply chain** capability: will continue to build on existing growth through the sector deal, and a stronger supply chain policy to drive 60% UK content by 2030 and a 5-fold increase in exports



# Pot 1 announcement for established technologies

- Recognising the scale of low-carbon generation needed for net zero the government announcement Pot 1 technologies (such as large-scale solar and onshore wind) will be eligible for allocation round 4.
- These technologies represent some of the cheapest forms of generation and will help us achieve net zero whilst providing lower energy prices for consumers, with little or no cost (subsidy) to the taxpayer.



# Covid-19 impacts – a green recovery

## Impacts on energy sector as a whole

- Companies across the sector have faced **financial pressures** due to Covid-19. These have been most acute for energy suppliers due to cashflow impacts of potentially high levels of consumer defaults.
- **Operational impacts** due to social-distancing measures and impacts of Covid-19 on the workforce has been manageable, and in the UK construction of essential projects has been able to continue in close to an uninterrupted manner.
- **Energy demand has decreased**, largely owing to the decrease in energy use from industrial and commercial consumers being greater than any increase in domestic demand as people stay at home. Average UK electricity demand in April this year was about 14% lower than what we would normally expect to see.
- We are working closely with industry to manage these impacts – so far, Minister Kwarteng has engaged in over 100 calls with energy sector stakeholders.

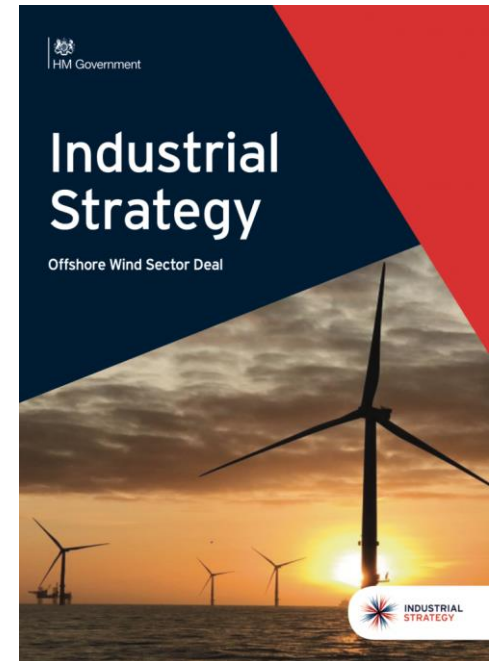
## A green, resilient recovery

- The Secretary of State has committed to a sustainable economic recovery, striving to deliver a UK and world economy which is stronger, cleaner, more sustainable and more resilient after this crisis.
- We know that decarbonisation and growth can be combined – since 1990, the economy has grown by 75% while emissions down by 43%.



# Next steps

- We're continuing to run allocation rounds around every 2 years.
- The next allocation round is planned for 2021.
- The Offshore Wind Sector Deal builds on the UK's global leadership position in offshore wind, maximising the advantages for UK industry from the global shift to clean growth.





Thank you