

AUCTIONS IN THE GB MARKET

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AGENDA

1. Some History
2. The Contract for Difference
3. The Allocation Framework – a hybrid auction
4. The auction process
5. The results of the first allocation round

THE HISTORY

- In 2002, the then Labour administration introduced the Renewables Obligation, a quota-and-trade support mechanism, which started the large-scale renewable electricity market in GB
 - Over time this evolved into a quasi-fixed premium
- In 2010, the incoming Conservative-Liberal Democrat coalition determined that a new low-carbon mechanism was required, covering renewables, nuclear and fossil-fuelled plant with CCS
- The Electricity Market Reform process delivered the Contract for Difference and the Capacity Market, both of which were intended to be competitively allocated, though the original plan had competition for CfDs coming later

UK GOVERNMENT'S INTENTION

Attracting low cost investment to:

- Deliver long-term decarbonisation
- Do so cost-effectively

The means to this end:

- Providing certainty over returns

Auctions were not the prime objective of the policy, they were the fallout from a limited budget for decarbonising the power sector, plus clear signals from the European Commission that State Aid clearance would require competition

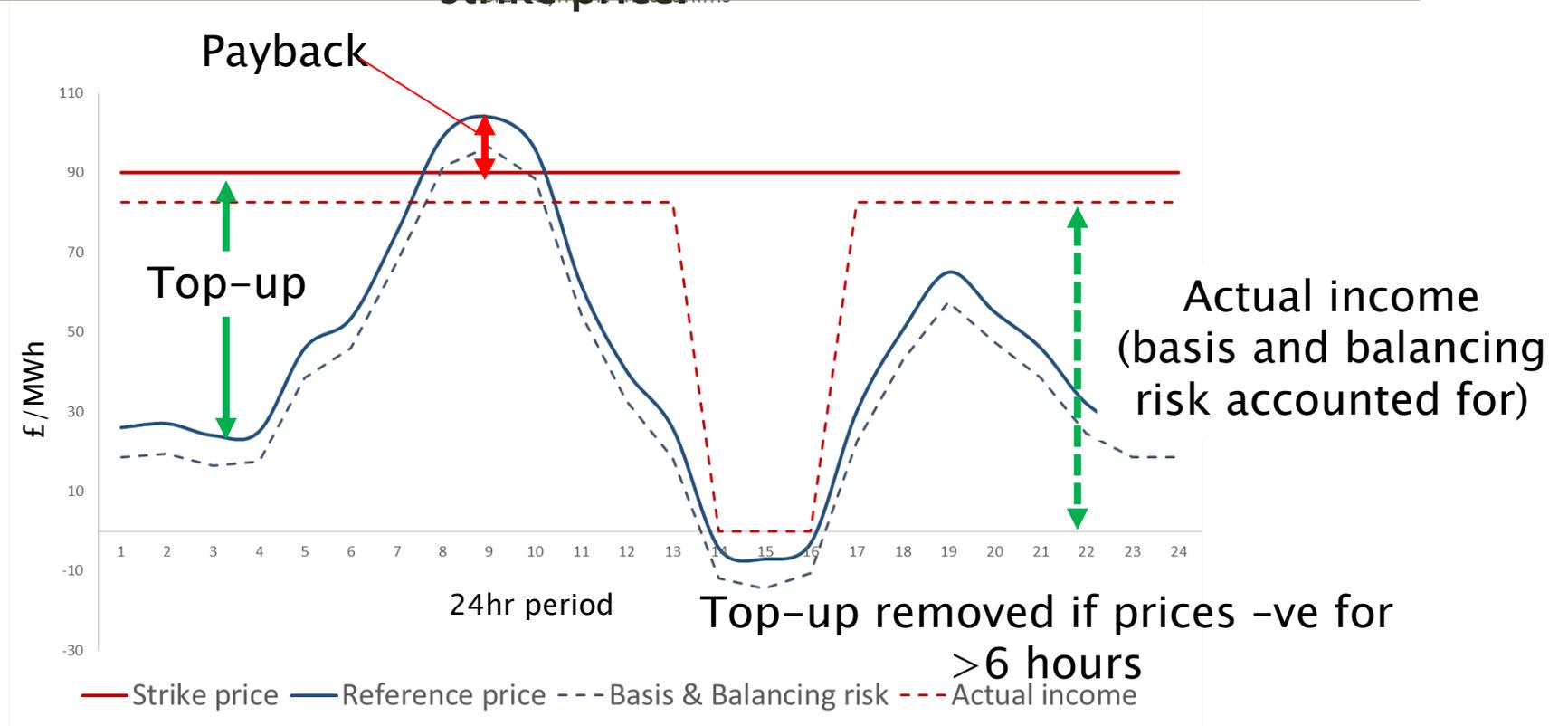
THE CONTRACT FOR DIFFERENCE

The generator sells power in the market but also receives a “top-up” payment to a pre-agreed “strike price”. Generator pays back when prices are above the strike price.

Reference price is the day-ahead market price

- Basis risk
- Balancing risk
- Still require a PPA

The top-up is currently regarded as a ‘subsidy’



WHAT IS A CFD?

15yr common law contract

- Protects counterparties of the contract
- 'Eliminates' political uncertainty

Counterparty is an arms-length Government-owned entity called the Low-Carbon Contracts Company (LCCC)

- Able to pay generators from a mandatory levy on electricity suppliers

Modelled on Private Finance Initiative contracts so includes:

- Change in law clauses
- CPI indexation
- Force Majeure
- And more...

ALLOCATING CFDS

- Government had originally envisaged four stages of allocation, which would be moved through as budget became scarcer:
 - First-come, first-served at administratively-set strike prices
 - Allocation rounds where all projects received contracts at the administratively-set strike prices
 - Allocation rounds where renewable projects competed for contracts
 - Allocation rounds which were completely technology-neutral among all low-carbon sources
- It eventually became clear that the available budget would be swamped with applications if there was a first-come, first served period, and that allocation rounds would immediately be competitive
- In order to manage competition, budget was allocated to separate 'pots' to ensure diversity of technology in the outcome

TYPES OF CFD AND POTS

FID-ER Investment Contracts	Generic CfD			Directed CfD
	Pot 1 “Established”	Pot 2 “Less-established”	Pot 3	
Dudgeon 402MW £150/MWh	Landfill gas £55/MWh	Scottish Isles Onshore £115/MWh	Biomass conversion £105/MWh	Hinkley C £92.5–89.5/MWh Delivery 2025
Beatrice 664MW £140/MWh	Sewage gas £75/MWh	Dedicated bio. £125/MWh		
Walney Extension 660MW £150/MWh	EfW with CHP £80/MWh	Geothermal £145–140/MWh		Swansea Tidal Lagoon 320 to 240MW? ?£/MWh – 2018?
Burbo Extension 258MW £150/MWh	Onshore wind £95–90/MWh	Anaerobic Digestion £150–140/MWh		
Hornsea Njord & Heron 1,200MW £140/MWh	Hydro £100/MWh	ACT £155–140/MWh		Peterhead CCS 385MW ? £/MWh Delivery ?
Drax Unit #1 645MW £105/MWh	Large solar PV £120–100/MWh	Offshore wind £155–140/MWh		
Lynemouth 420MW £105/MWh		Wave & tidal £305/MWh		White Rose CCS 426MW ? £/MWh Delivery ?
Teesside 229MW £125/MWh				

ADMINISTERED STRIKE PRICES

Table 3: CfD Strike Prices (£/MWh, 2012 prices)³¹

Technology	2014/15	2015/16	2016/17	2017/18	2018/19
Advanced Conversion Technologies ³² (with or without CHP)	155	155	150	140	140
Anaerobic Digestion (with or without CHP) (>5MW)	150	150	150	140	140
Biomass Conversion ³³	105	105	105	105	105
Dedicated Biomass (with CHP)	125	125	125	125	125
*Energy from Waste (with CHP) ³⁴	80	80	80	80	80
Geothermal (with or without CHP)	145	145	145	140	140
*Hydro ³⁵ (>5 MW and <50MW)	100	100	100	100	100
*Landfill Gas	55	55	55	55	55
*Sewage Gas	75	75	75	75	75
Offshore Wind	155	155	150	140	140
*Onshore Wind (>5 MW)	95	95	95	90	90
*Solar Photo-Voltaic (>5MW)	120	120	115	110	100
Tidal Stream ³⁶	305	305	305	305	305
Wave ³⁷	305	305	305	305	305
Scottish Islands – onshore wind (>5MW)	-	-	-	115	115

CPI Indexed

Delivery period
(financial years)

Strike price defined by
stated Target
Commissioning Date
(TCD)

Degression

These are
technology
specific

THE AUCTION PROCESS

- Important to realise that the auction is for budget not capacity
 - Budget is expressed as annual spend above the reference price
- Each Pot is allocated a budget envelope
- If the envelope is breached in any year, no project that is more expensive can be awarded a contract in that year
- The auction is “pay-as-clear” with different clearing prices in each year for each pot
- Government has the power to set “maxima” and “minima” if it wants to cap or encourage certain technologies
 - In effect, technologies subject to these have technology-specific auctions

VALUING PROJECTS

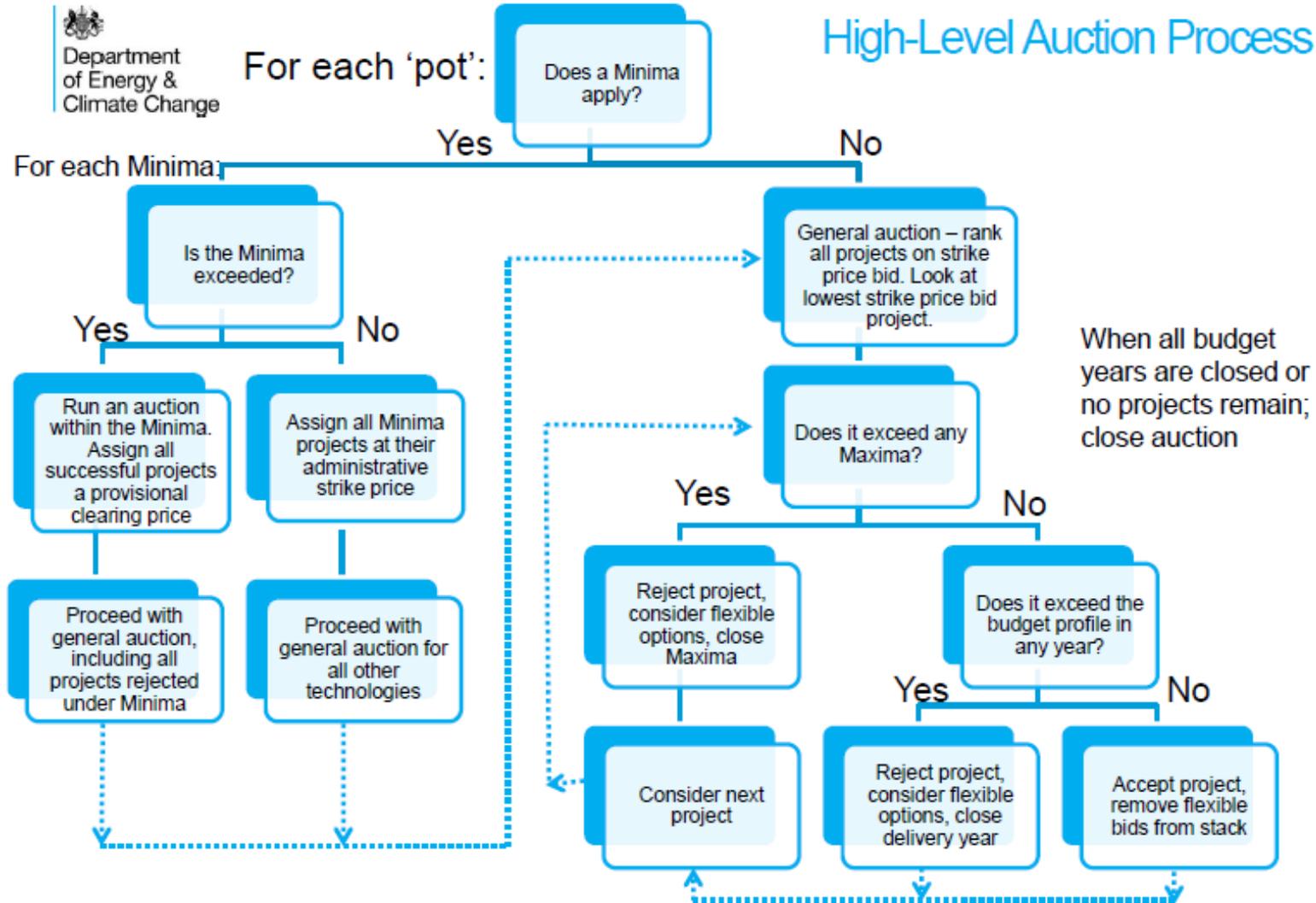
- Budget “draw” is calculated by using the “valuation formula”:

$$\text{Budget impact}_{s,yr,p} = (\text{Strike Price}_{cy,t} - \text{Reference Price}_{yr}) \times \text{Load Factor}_{t,yr} \times \text{YR1F}_{s,c,p} \\ \times \text{Capacity}_{s,p} \times (\text{Days}_{yr} \times 24) \times (1 - \text{TLM}_{yr}) \times \text{RQM}_t \times \text{CHPQM}_s$$

- Note the reference prices used in the first allocation round (in 2012/13):

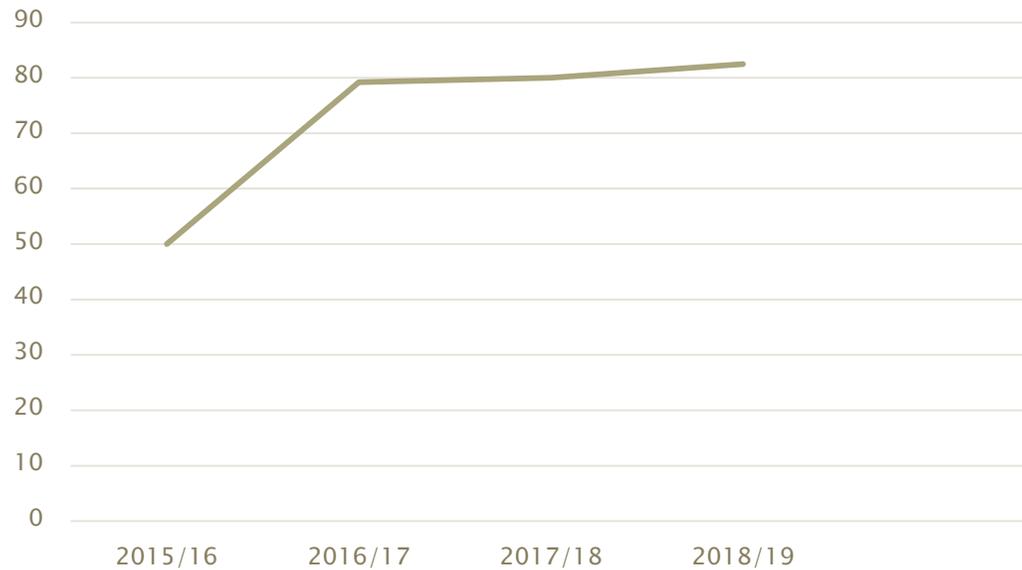
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Reference price £/MWh	51.06	52.88	50.52	48.93	49.32	53.43

RUNNING THE AUCTION

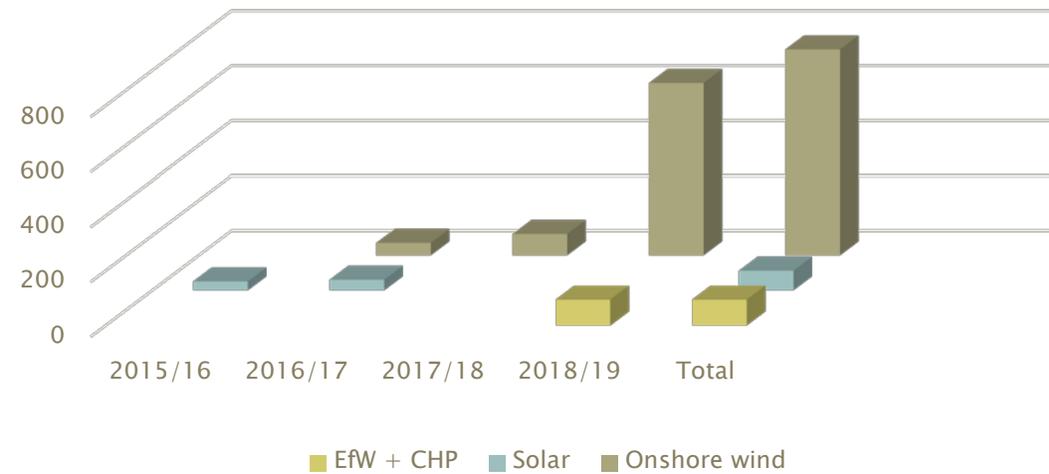


RESULTS OF THE FIRST ALLOCATION ROUND – POT 1

Pot 1 Clearing price (2012£)



Pot 1 result (MW)

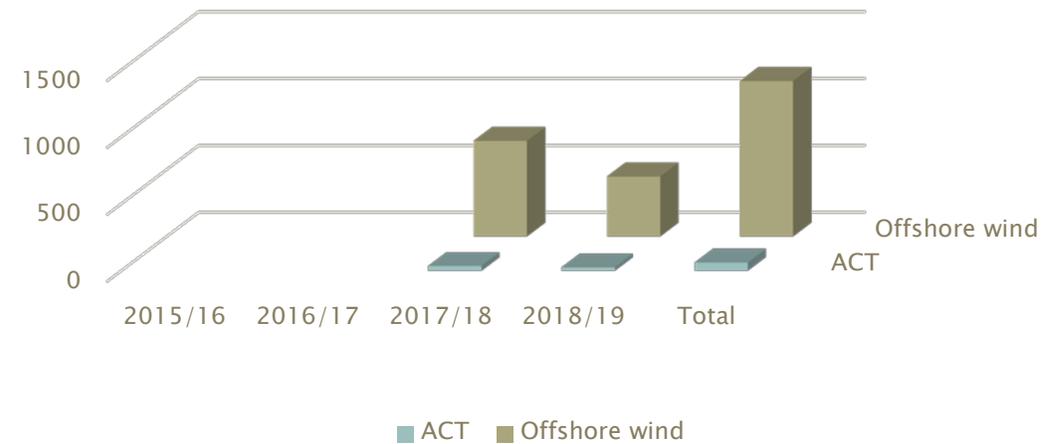


RESULTS OF THE FIRST ALLOCATION ROUND – POT 2

Pot 2 Clearing price (2012£)



Pot 2 result (MW)



WHO WERE THE WINNERS?

- Pot 1 winners were quite diverse:
 - Only one of the 'big six' power suppliers won onshore wind contracts (RWE Innogy)
 - Otherwise independent generators were the winners
 - No community-owned schemes secured contracts
 - No data was released on unsuccessful bidders
- Fewer winners in Pot 2 as offshore projects much larger:
 - One of the 'big six' (Scottish Power/Iberdrola) and one independent (Mainstream) won contracts for offshore wind projects

CURRENT AND FUTURE AUCTIONS

- Currently a Pot 2 auction under way
 - £290m budget, for projects commissioning in 2021/22 or 2022/23
 - Maximum of 150MW of fuelled technologies (dedicated biomass, anaerobic digestion, ACT) allowed
 - Likely to clear much lower than the strike price for Hinkley Point C
 - Possibly 2GW of offshore wind capacity could secure contracts
- For political reasons, Pot 1 auctions unlikely in the foreseeable future
 - Conservative Party manifesto leaves door open for these but difficult when political focus is on Brexit
- Government should be implementing recommendations from the Competition and Markets Authority that budget allocation to Pots and technologies within them should be subject to clear analysis and consultation
 - Has not happened yet

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