Hinkley Point C Value for Money

1) The decision taken by the Secretary of State for the Department of Business, Energy and Industrial Strategy on whether to direct the Low Carbon Contracts Company to offer a Contract for Difference (CfD) in relation to the Hinkley Point C (HPC) project was informed by consideration of the project's value for money.

2) This consideration was developed and agreed by the Department's Chief Economist. This analysis comprised several aspects:

A

3) Whether the CfD package offers a fair return to investors in HPC without overcompensating them given the true costs and risks faced by the project.

4) **Conclusion:** On the basis of the agreed strike price, information provided on the costs of the project, the risk/reward allocation and benchmarks based on market data, our analysis, in relation to which external advice was obtained, indicates that EDF's forecast return on investment from the HPC project is reasonable from a financial point of view to the Secretary of State. The Secretary of State Investor Agreement ensures that the LCCC will receive its share of returns in excess of certain prescribed levels that are generated by EDF.

B

5) Whether HPC is cost-competitive to other options for delivering power. It compares the Strike Price of HPC with the equivalent cost per MWh of alternative technologies capable of delivering power generation at scale in the 2020s.

6) **Conclusion:** HPC is within the range of the costs of alternative large-scale low-carbon generation technologies in the 2020s. The HPC Strike Price (£92.50/MWh) is:
   - towards the bottom of the comparable cost range of first-of-a-kind commercial carbon capture and storage (£77-249/MWh) for delivery in 2025;
   - towards the bottom of the comparable cost range of offshore wind (£81-132/MWh);
   - towards the top of the comparable cost range of gas Combined Cycle Gas Turbines (CCGT) (£47-96/MWh); and,
   - above the comparable cost range of large-scale solar Photovoltaics (PV) (£65-92/MWh) and onshore wind (£49-90/MWh).

7) In order for large-scale solar and onshore wind to produce the same amount of electricity provided by HPC, there would be significant upgrades to the grid required (such as connection and planning costs) as well as increased costs to keep the system in balance.

8) Further, it is important to note that this does not fully capture the cost of a like-for-like replacement of HPC as a provider of firm or 'reliable' capacity out from the 2020s to the 2080s, the value of diversity in the generation base, and the option value for further new nuclear that HPC unlocks.

C

9) Whether HPC brings social benefits by reducing the total cost of the British electricity system out to 2050. The social benefits are assessed by comparing total electricity system cost scenarios where HPC goes ahead, to various electricity system cost scenarios where HPC is not delivered or significantly delayed while we continue to work towards our legally required low carbon targets. This considers additional impacts to society such as the supply-chain of alternative technologies, security of supply, balancing and network costs.

10) **Conclusion:** HPC is expected to bring net welfare benefits to 2050 compared to most scenarios considered. This involves comparing a delay to the nuclear programme with different large-scale technologies filling the gap. The table below sets out the net welfare benefits for the different scenarios considered:

Counterfactual – what delay to nuclear, and what alternative generation **£m 2012 prices, discounted to 2012**	**Net social benefit of no delay to HPC, cumulative to 2030**	**Net social benefit of no delay to HPC, cumulative to 2040**	**Net social benefit of no delay to HPC, cumulative to 2050**
Three-year delay – more offshore wind and CCS	**£7,300**	**£18,000**	**£19,400**
Ten-year delay – more offshore wind and CCS	**£17,000**	**£43,700**	**£52,300**
Three-year delay – more gas plant	**-£3,200**	**-2,900**	**-£830**
Three-year delay – more onshore wind and large-scale solar PV	**£3,600**	**£10,900**	**£11,700**

11) If HPC is delivered on time it will deliver the greatest net welfare benefits compared with the viable alternatives, except gas generation. However, relying on gas alone would increase the risk of missing 2050 carbon targets. In addition,

analysis here does not take into account some significant benefits of HPC, particularly post-2050, specifically avoiding the costs of replacing the gas fleet and avoiding the rising carbon costs of gas generation post-2050.

D

12) Whether HPC is affordable to UK electricity consumers. Affordability is assessed by estimating the impact of HPC on household electricity bills and comparing this to the impact of building alternative types of generation.

13) **Conclusion:** The support payments for HPC will depend on the level of future wholesale prices, which will fluctuate. The total cost over the whole CfD has been estimated at £11-21bn (2012 prices, discounted to 2012). Our most realistic projections mean that around £12 from energy bills will go towards supporting the plant in 2030.

14) It is not just HPC which will receive support from consumer bills; other clean technologies such as offshore wind receive the same kind of support. These payments are only one part of a consumer's electricity bill and only partially reflective of the costs of decarbonisation. For example, if HPC is delayed by three years and offshore wind and Carbon Capture and Storage (CCS) are needed to fill the gap, it would lead to a £24 annual increase on household electricity bills on average from 2026 to 2030 (2012 prices). Similarly, if onshore wind and large-scale solar PV were to fill the gap, consumer bills would increase annually by £21. Gas plant coming on to fill the gap would see bills £6 cheaper per year, but this would undermine the UK's ability to meet legally binding decarbonisation targets.

Conclusion

15) Having considered the analysis the Secretary of State for Business, Energy and Industrial Strategy was satisfied that offering a Contract for Difference represented value for money.