



Department for  
Energy Security  
& Net Zero

Department for Energy Security &  
Net Zero  
55 Whitehall  
London  
SW1A 2HP

[www.gov.uk](http://www.gov.uk)

Andrew Montford  
Director Net Zero Watch Limited

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Prof. Gordon Hughes  
Emeritus Professor, University of Edinburgh  
By email: [ola.rathbone@thegwpf.org](mailto:ola.rathbone@thegwpf.org)

15 November 2024

Dear Mr Montford and Prof. Hughes,

Thank you for your letter of 16 September to the Permanent Secretary, about offshore wind costs in the Generation Costs Report 2023, and relation to other cost data for offshore wind. Your correspondence has been passed to me for response. Please accept my sincere apologies for the delay in doing so.

The Levelised Cost of Electricity (LCOE) reflects a high-level metric that is published by DESNZ to provide a simple way to compare the cost to developers across technologies. This metric is not directly used to inform the cost of Net Zero. Instead, the Department uses full power sector modelling to consider costs of the whole power system. This factors in the role that different technologies have within the system and associated costs.

LCOE such as you quote for offshore wind, is the discounted lifetime cost of building and operating a generation asset, expressed as a cost per unit of electricity generated (£/MWh). It covers all relevant costs faced by the generator, including pre-development, capital, operating, fuel, and financing costs. Strike prices are the fixed price per unit of electricity (£/MWh) awarded through Contracts for Difference (CfD) auctions, typically over a 15-year contract.

LCOE cannot be directly compared with strike prices. Strike prices represent the price needed over the CfD contract for a project to be commercially viable over its useful life, factoring in how much revenue it might receive on the wholesale market 'post-CfD'. Strike prices also consider market and policy considerations, and other technology-specific factors that LCOEs do not factor in. Further information on the considerations that factor into setting renewable auction parameters, including discussion of the impact of recent macroeconomic pressures can be found within the auction publication series<sup>1</sup>.

The Generation Costs Reports provide a transparent record of cost and technical assumptions. Assumptions are based on regularly reviewed primarily external evidence. The Generation Costs Reports describe appropriate usage of levelized costs of electricity (LCOE) and caveats associated with these. You refer to costs associated with historical projects but LCOEs represent a high-level comparison of costs across technologies for a generic future plant and may differ from costs associated with an individual project. In your

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<sup>1</sup> <https://www.gov.uk/government/publications/contracts-for-difference-cfd-allocation-round-6-administrative-strike-prices-methodology-note>.

letter you refer to a decline (load factors) or increase (operating costs) across the lifetime of projects. Note that the figures presented in the Generation Costs Report reflect an average across the lifetime of the plant.

To respond to your point on load factors in the Generation Costs Report and annual operation of current wind farms being different, this is expected. To enable comparison across technology classes it is standard for LCOE estimates to be calculated assuming that they operate at their technical maximum. This differs from actual annual operation that accounts for all reasons for wind plants to be operating at less than maximum capacity. This will include periods of maintenance and curtailment for example, which varies across years and across projects. Another factor is that the Generation Costs Report considers new turbines where improvements in turbine design and larger turbines (higher hub height) enable increases in load factors. Hence, we expect a higher load factor for the newer models assumed in the Generation Costs Report than for the range of turbines in the existing fleet that you refer to in your letter.

Thank you again for taking the time to write.

Yours sincerely,

Jenny Inwood  
Generation Costs G7  
Energy Infrastructure and Markets Analysis