

Cost trajectories of low carbon electricity generation technologies in the UK:

A study of cost uncertainty

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Abstract

Cost uncertainty has latterly come to be presented in the UK's Department of Energy and Climate Change (DECC) Levelised Cost of Electricity (LCOE) estimates using sensitivities; 'high' and 'low' figures presented alongside central estimates. This presentation of uncertainty is limited in its provision of context, and of an overall picture of how costs and uncertainty vary over time. Two analyses are performed using the published DECC cost estimates for three electricity generation technologies – nuclear, offshore wind and Carbon Capture and Storage (CCS). The first analysis analyses cost trajectories from selected DECC LCOE estimates and presents them alongside contextual data, resulting in contextual cost landscapes. The second evaluates the associated temporal estimate uncertainty in the decade 2020-2030; an approach aimed at capturing the temporal consistency of estimates, alongside variations in magnitude. Nuclear estimates are found to be both the most consistent and lowest in magnitude. Offshore wind and CCS suffer from comparatively large cost and uncertainty premiums. The implications for the direction of policy are then discussed in the context of conflicting past experience and hidden costs.

Keywords : cost projections; nuclear; wind power; carbon capture and storage

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