



CROCODILE

Cross-border Coordination of Offshore Grids under Different Designs
for Day-Ahead and Ancillary Service Markets

D3.1 Market Inefficiencies in Renewable Support Policies: Evidence from Offshore Wind Contracts for Difference in Great Britain

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Abstract: Inefficient market responses to renewable support schemes can increase costs and undermine decarbonization efforts. We study two-way Contracts for Difference (CfDs), which stabilize generator revenues but may distort generation incentives. Exploiting variation across support schemes and CfD design rules for offshore wind farms in Great Britain, we apply difference-in-differences to hourly unit-level data to provide the first ex-post evidence on CfD-induced inefficiencies in day-ahead and balancing markets. Market-based wind farms reduced output by 69-83% during negative-price hours; CfD-backed units showed a similar reduction when payments were suspended after six or more consecutive negative-price hours. CfDs also distort the balancing market: generators curtail output by 28% less when they receive payments that cover the negative imbalance price; when they must repay, they curtail 19% more when the imbalance price drops below the payment. From 2019–2024, day-ahead market distortions resulted in 2.9 TWh excess generation, costing £176 million in support.

Link: <https://ideas.repec.org/p/rug/rugwps/25-1124.html>