

OECD NUCLEAR ENERGY AGENCY REPORT: THE PARIS AGREEMENT AND THE NEED FOR LOW-CARBON ELECTRICITY SYSTEMS

The Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD) recently published its much heralded report, the Costs of Decarbonisation: System Costs with High Shares of Nuclear and Renewables.

[Click here to read the OECD report](#)

Clean Electricity Generation

In 2015, in the well-known [Paris Agreement](#), some 174 countries and the EU agreed to limit the global average temperature rise to well below 2°C. In this context, as electricity generation is responsible for 40% of global CO2 emissions, it makes sense to switch from polluting generating sources to cleaner and more sustainable methods. However, this will require a carbon emissions target of 50 g/kWh. Thus, countries are inevitably trying to meet their climate change obligations through the adoption of low-carbon but capital intensive electricity generation, through solar, wind, hydro and also nuclear.

However, as the report recognises, this has resulted in large inefficiencies within the electricity supply system, to the point where *“the challenge is almost impossible to overcome in the current low-price environment...”*. New, more robust energy market policies are now required to provide stability and confidence, whilst it is necessary to realign systems and markets to ensure security of supply and system reliability.

OECD Report

The study looked at the costs of low-carbon electricity systems that would work towards the goals of the Paris Agreement, through eight different scenarios which allowed for different shares of variable renewable energy (i.e. wind and solar), hydro and nuclear in a large, well-interconnected system.

The report concludes that the generation mix which meets electricity demand at a minimal cost primarily relies on dispatchable low-carbon generation technologies, such as nuclear power and hydroelectric power, and notes that the cost of electricity generation increases with the share of VRE enforced in the system.

In its final paragraph, the report states that OECD countries should move together on the design of low-carbon electricity systems. There is, it says, a high likelihood that the orientations provided by competitive markets for short-term dispatch, carbon pricing, centralised mechanisms for infrastructure provision, long-term stability for investors in low-carbon capacity and the internalisation of system costs will remain the appropriate reference for the design of low-carbon electricity systems in decades to come.

Conclusion

The report is not without its detractors. One commentator remarked that unrealistic and outdated numbers were used and that other studies counter the report's assertion that more Variable Renewable Energy means a higher cost of electricity.

However, the report does make a strong case for the use of nuclear power in any energy mix going forwards, yet comes at a time when nuclear newbuild projects in the UK are collapsing at a high rate.

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About the Author

Prospect Law is a multi-disciplinary practice with specialist expertise in the energy and environmental sectors with particular experience in the low carbon energy sector. The firm is made up of lawyers, engineers, surveyors and finance experts.

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