

Market design for a high-renewables European electricity system

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**David Newbery, Michael Pollitt, Robert Ritz,
Wadim Strielkowski**

Abstract

This paper presents a set of policy recommendations for the market design of a future European electricity system characterized by a dominant share of intermittent renewable energy supply (RES), in line with the stated targets of European governments. We discuss the market failures that need to be addressed to accommodate RES in liberalized electricity markets, review the evolution of the EU's RES policy mechanisms, and summarize the key market impacts of RES to date. We then set out economic principles for market design and use these to develop our policy recommendations. Our analysis covers the value of interconnection and market integration, electricity storage, the design of RES support mechanisms, distributed generation and network tariffs, the pricing of electricity and flexibility as well as long-term contracting and risk management.

Keywords: Electricity markets, wholesale market design, renewable energy, interconnection, electricity storage, long-term contracts, capacity markets

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Contact
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Robert Ritz – rar36@cam.ac.uk
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www.eprg.group.cam.ac.uk