

Revisiting support policies for RES-E adulthood: towards market compatible schemes

S. Huntington, P. Rodilla, I. Herrero, C. Batlle

Abstract— The past two decades of growth in renewable energy sources of electricity (RES-E) have been largely driven by out-of-market support policies. These schemes were designed to drive deployment on the basis of specific subsidies sustained in time to allow for the larger costs as well as to limit investor risk. While these policies have proven to be effective, the way they have been designed to date has led to costly market distortions that are becoming more difficult to ignore as penetrations reach unprecedented levels.

In the context of this growing concern, we provide a critical analysis of the design elements of RES-E support schemes, focusing on how they affect this trade-off between promoting and efficiently integrating RES-E.

The emphasis is on the structure of the incentive payment, which in the end turns to be the cornerstone for an efficient integration. We conclude that, while needed, a well-designed and further developed capacity-based support mechanism complemented with ex-post compensations defined for reference benchmark plants, such as the mechanism currently implemented in Spain, is an alternative with good properties if the major goal is truly market integration. The approach is robust to future developments in technology cost, performance and market penetration of RES-E.

Index Terms— RES-E support schemes; Electricity market design; Market integration; Negative prices

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