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# **Increasing the share of variable renewable energy System costs in the European Union**

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## Abstract

To make the transition to a low-carbon economy, the European Union (EU) has been encouraging the deployment of variable renewable energy sources (VRE). However, VRE lack of competitiveness and their technical specificities have substantially raised the cost of the shift. Economic evaluations show that VRE life-cycle costs of electricity generation are still today higher than those of conventional thermal power plants. Member States have consequently adopted dedicated policies to support them. In addition, Ueckerdt et al. (2013) show that when integrated to the power system, VRE induce supplementary not-accounted-for costs. This paper first exposes the rationale of EU renewables goals, the EU targets and current deployment. It then explains why the LCOE metric is not appropriate to compute VRE costs by describing integration costs, their magnitude and their implications. Finally, it analyses the consequences for the power system and policy options. The study shows that the EU has greatly underestimated VRE direct and indirect costs and that policymakers have failed to take into account the burden caused by renewable energy and the return of State support policies. Indeed, induced market distortions have been shattering the whole power system and have undermined competition in the Internal Energy Market. EU policymakers can nonetheless take full account of this negative trend and reverse it by relying on competition rules and redesigning the architecture of the European electricity system.