

Cross-border transmission cost allocation: can we combine ex-ante benefits with ex-post adjustments based on usage?

Nathan Giovannini¹, Leonardo Meeus^{2,1}

¹KU Leuven, Leuven, Belgium. ²Florence School of Regulation (EUI), Florence, Italy

Extended Abstract

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Abstract Summary

Cross-border transmission projects require an agreement on how the costs will be shared between countries. Cost sharing approaches can follow, among others, the territorial principle, a beneficiary pays principle, or a user pays principle. The current EU framework promotes an ex-ante cost allocation based on the expected benefits. However, it has been less successful than imagined, with the cost of most projects still allocated with the territorial principle. Moreover, in a context of high uncertainty, which country benefits more can differ strongly among different scenarios. In the last Grid Package, the European Commission proposed to combine the ex-ante cost sharing agreement with ex-post adjustments. The contribution of this paper is to check how effective usage-based metric could be as ex-post adjustments. We perform an energy system analysis where the Ten-Year Network Development Plan (TYNDP) scenario is compared with alternative scenarios. In this framework, the TYNDP represents the reference scenario upon which an ex-ante cost allocation is agreed, while the alternative scenarios represent potential variations that lead to a different benefit allocation compared with the initial expectations. Building on previous literature on flow allocation methodologies, we assess the correlation between the variation in marginal benefits and the variation in usage for a selection of projects. The study is on-going and preliminary results and conclusions will be presented.

Presenting Author Biography

Nathan Giovannini is a second year PhD candidate at KU Leuven, under the supervision of Prof. Leonardo Meeus. He holds a BSc in Mechanical Engineering and an MSc in Energy Engineering from the University of Florence. Prior to starting his PhD, he was affiliated as a researcher for RSE (Ricerca sul Sistema Energetico). His PhD project focuses on how to design regulatory measures to share the costs, benefits and risks of offshore wind development in the North Sea. His general research interests include the development of a future energy system characterized by security of supply, affordability, and sustainability.