

Abstract

Impact of the bidding area configuration in the French Electrical Network

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At the beginning, European electricity transmission interconnection networks have been developed to reduce the operational risks. These interconnections are also used in the purpose of exchanging electricity from one country to another. They have a central role in the construction of an integrated European electricity market: they allow electricity supplier to sell energy to a customer in another EU country. This allows market players to trade electricity depending on opportunities and prices in various bidding areas in Europe. So, the interconnections contribute to the effectiveness of the European electricity market and to the optimization of the power plants between for example renewable and conventional energy sources.

The volume of trade is however limited by the physical limitations of the transmission lines, which are determined by the TSOs (cross border capacity calculations) and assigned to the actors based on different market mechanisms (capacity allocation).

The fast development of renewable energy sources introduced new local imbalances between supply and demand and intermittency of the supply. This leads to increase constraints on transmission lines, including on neighbouring countries network. In order to manage this problematic situation, the modification of the bidding areas configuration is often considered as a solution.

This report presents the study of the impact of a new bidding zone configuration in France from a market point of view. The study will use as an input previous European bidding zone or loop flow studies and market simulation results. The analysis of the current situation in France is presented and new boundaries for the wholesale electricity market will be proposed.

The RTE market simulation tool is based on supply/demand balance. The assumptions taken into account to define the production and the consumption as input are presented. These simulations enable to identify the commercial exchanges evolution and the electricity prices. Due to confidentiality of the data used for the simulation, the results that are presented in the report are based on a set of fictitious data.

Different scenarios, trajectories of foreseen evolutions of the market, are considered to quantify and analyze the impact of area pricing in France taking into account both economic and technical considerations.