



Internship Proposal: The Impact of Wind Power Distribution on Market Prices in France

Background

Irex Consulting is a business engineering consultancy company specialized in the energy & utility sectors. We are experts in tackling operational business challenges across the entire value chain – production, sourcing & trading, grids, and supply.

Assignment

The rapid expansion of wind energy in France presents significant economic challenges, particularly concerning electricity market prices. Due to its intermittent nature, the increased integration of wind power can lead to cannibalization effects, where excessive supply during peak production periods depresses electricity prices, ultimately impacting the profitability of investments in the sector.

This internship aims to analyze how the geographical diversification of wind power installations could mitigate the observed cannibalization effect on market prices. By leveraging hourly electricity generation data by energy source, forecasts, and installed capacities, the goal is to model the impact of regional wind production levels on France's spot electricity prices.

The study will include the calculation of capture ratios by region, evaluating the economic efficiency of wind power production relative to market prices. Using statistical models to compare these ratios on both national and regional scales, the objective is to determine whether a more balanced distribution of wind capacities across the country could contribute to price stabilization and maximize the economic benefits of this energy source.

By adopting this approach, the research aims to provide strategic recommendations for future wind energy developments in France, aligning economic interests with the imperatives of the energy transition. The findings could help policymakers identify best practices for the placement of new wind installations, optimizing benefits while minimizing adverse impacts on the electricity market.

Objectives

- Conduct analysis of the impact of regional wind power production on electricity market prices in France.
- Calculate/compare capture ratios for various regions assessing economic efficiency of wind production.
- Develop statistical models to determine if more diversified geographic distribution of wind capacity could mitigate market cannibalization effects.
- Provide insights and recommendations for optimizing wind power deployment to stabilize market prices and improve investment returns.
- Produce complete report summarizing findings, methodologies, and potential policy recommendations.
- Deliver final presentation outlining key takeaways and strategic implications for wind energy development in France.

Preparation Material

- <https://www.enerdata.net/publications/reports-presentations/ires-cannibalisation-impacts.html>
- Relevant Irex training material will be provided

Schedule Beginning of July -- End of August

Contact

Patrick Larin
Contact patrick.larin@irex-consulting.com

Website <http://www.irex-consulting.com/>