



**UNIVERSITY OF
CAMBRIDGE**

Department of Engineering

CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT

The European Supergrid - Blue sky to reality: Lessons learned from current market developments

This thesis examines existing and future European market coupling arrangements in the context of the European Supergrid. The analyses undertaken focus on the Central Western Europe (CWE) region, the hub of power trading in Europe. The constituent fuel mixes and the scale and pace of renewable energy deployment in Germany provides a solid and scalable base for understanding current and future market developments that will pave the way for the European Supergrid.

With regard to the existing market coupling methodology, a historical time series analysis is undertaken to understand if and to what extent German renewable penetration has inverted the trend of price convergence through market coupling in the CWE, utilising spot price data for France and Germany from the years 2011 to 2013. This analysis differs from previous studies by utilising spot price data post market coupling and comparing the descriptive statistics with pre coupling data from 2006 to 2010.

Concerning the implementation of Flow Based Market Coupling, a time series analysis comparing the availability of parallel run data from the Central Auction Office for cross-border transmission capacity (CASC.EU), with high resolution supply, fuel mix and demand data for the constituent countries in the CWE region is undertaken.

The results from the analyses indicate that an opportunity has been missed to implement nodal pricing as the methodology of choice across Europe, paving the way for the European Supergrid.

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