

# Market Integration, Efficiency, and Interconnectors: The Irish Single Electricity Market

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The establishment of a competitive wholesale electricity market is a priority for many electricity markets in Europe. The drive towards a competitive and common internal market for electricity has led to the creation of organized wholesale spot markets (power exchanges) and increased cross-border wholesale electricity trade across many European countries. Coinciding with the overall policy changes in the EU; the Northern Ireland Authority for Utility Regulation (NAIRU) and the Commissions for Energy Regulation (CER) have since November 1, 2007 started jointly regulating the all-island Single Electricity Market (SEM) encompassing both Northern Ireland and the Republic of Ireland. SEM as all-island small electricity market encompasses approximately 2.5 million electricity customers, 1.8 million in the Republic of Ireland and 0.7 million in Northern Ireland. However, the isolation of the island economy from continental Europe has resulted in just one interconnector link (the Moyle interconnector) connecting SEM with Britain amounting to almost 4.7% of total SEM generation capacity.

Interconnections are an effective way to increase competition in wholesale electricity markets in particular for smaller markets with limited number of participants. The aim of this paper is to primarily assess the current state of SEM and examine the possibilities and potentials to benefit from increased interconnections. For this purpose, we analyze the wholesale spot electricity price development of SEM with other large, mature and interconnected wholesale electricity markets in Europe using a time-varying Kalman filter approach for hourly day-ahead electricity prices.

Our results suggest that at the current state, market integration of SEM with other wholesale markets around Europe is low. High market liquidity in SEM has not necessarily meant higher market efficiency



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unlike Elspot where the average hourly wholesale prices are the lowest. Thus, the all-island wholesale market cannot be deemed competitive. Thus, the proposals to expand the interconnections network through the East-West interconnector (Ireland-Wales) apart from the existing Ireland-Northern Ireland interconnector (Louth-Tandragee) and the existing 500 MW Northern Ireland-Scotland interconnector is certainly desirable. Apart from benefits of price differences due to growing market size and economies of scale, low market integration would also imply connecting to international markets and benefit from increased security of supply and reduced price volatility as economic theory suggests.

Thus, it is desirable that the process of interconnecting SEM to larger wholesale markets in Europe is intensified with investments in interconnector capacity and transmission networks. Equally important will be the appropriate regulatory framework and market design that incentivizes wholesale traders to actively engage in cross-border electricity trade and generate adequate investments in transmission infrastructure.

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