

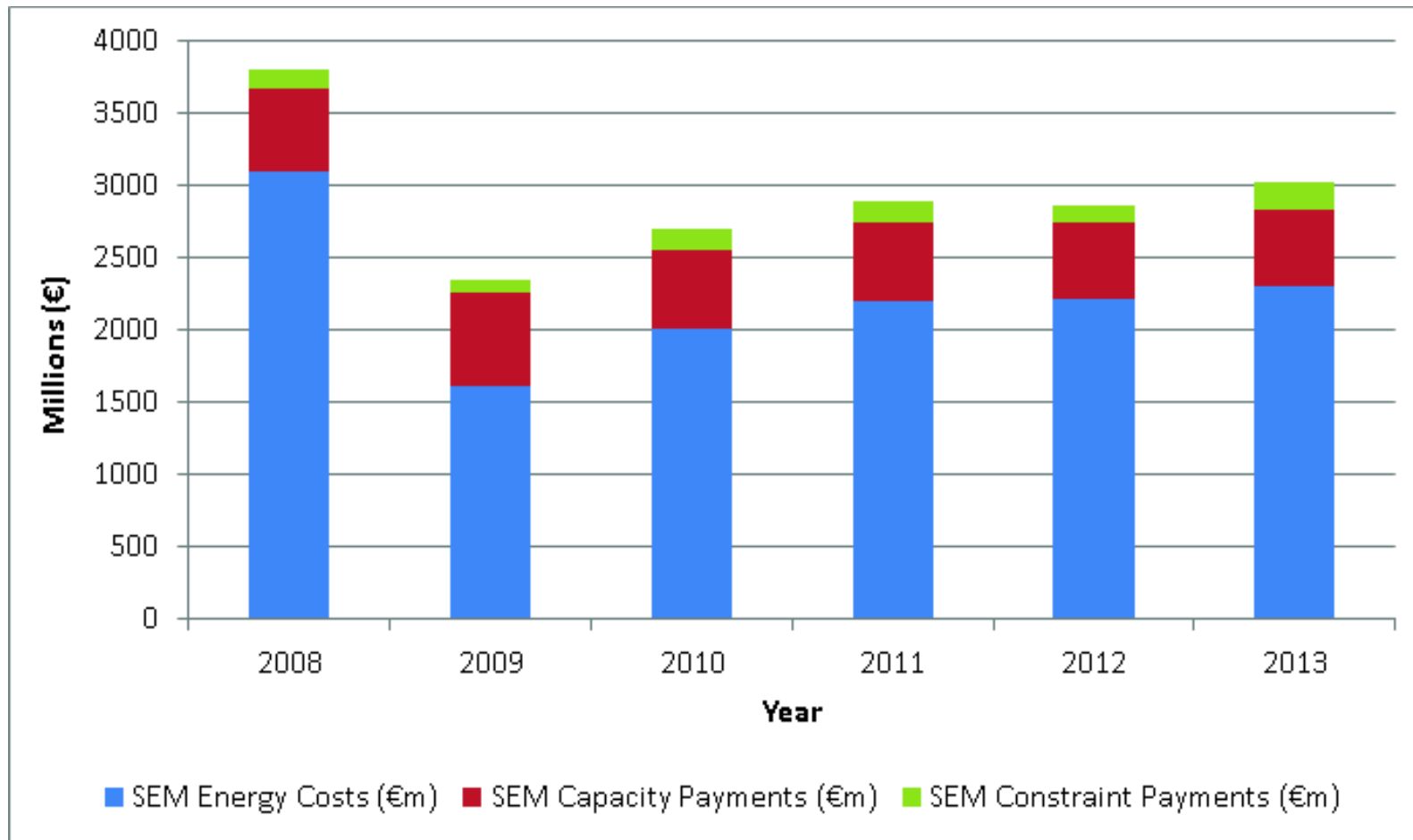
Integrated Single Electricity Market

Key Challenges and Issues

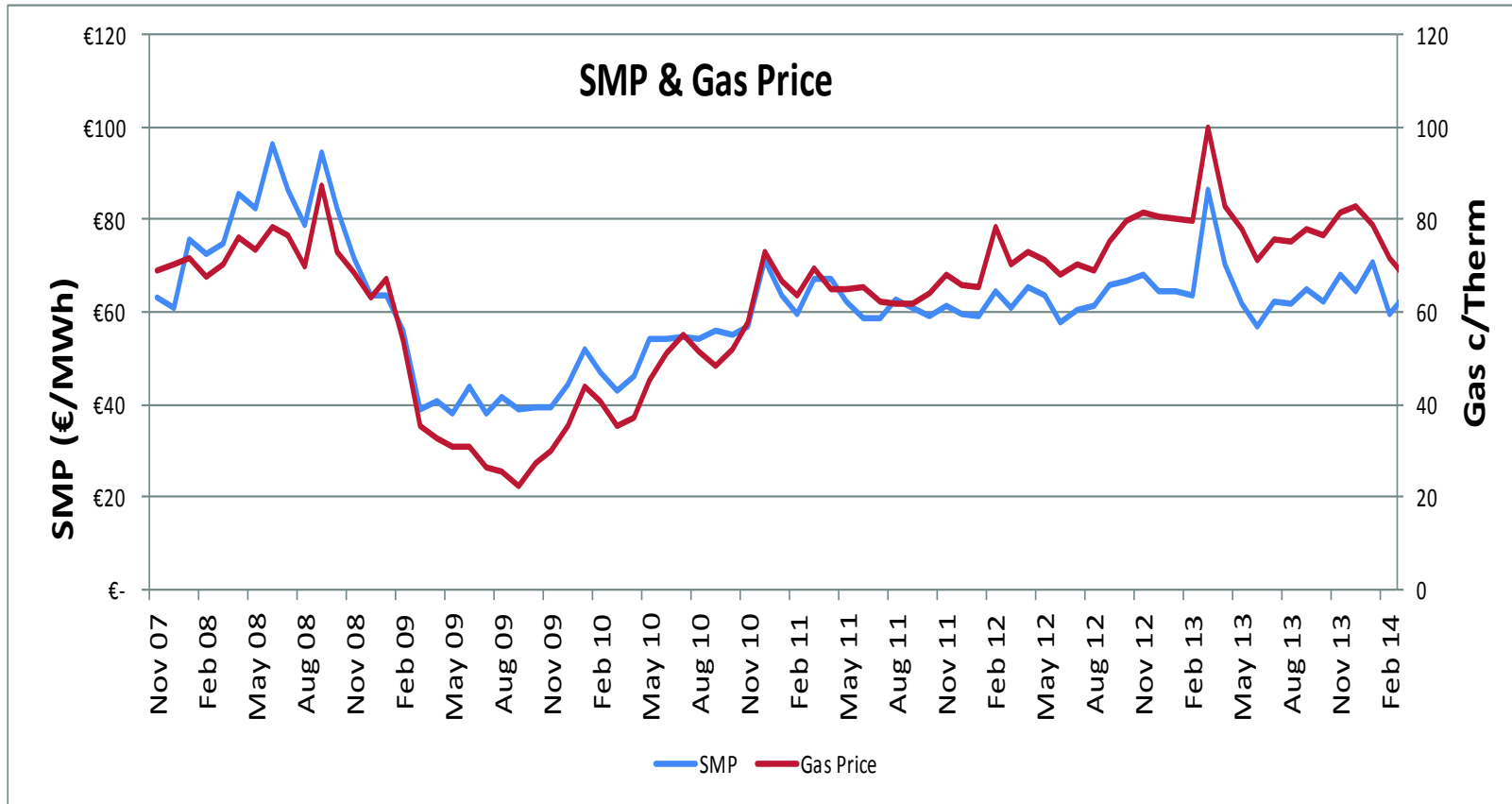
Background

- SEM established 2007
- Single Electricity Market for ROI and NI
- Revenues
 - SMP for supplying energy
 - Capacity Payment Mechanism (CPM)
 - Constraint payments
 - Ancillary Services

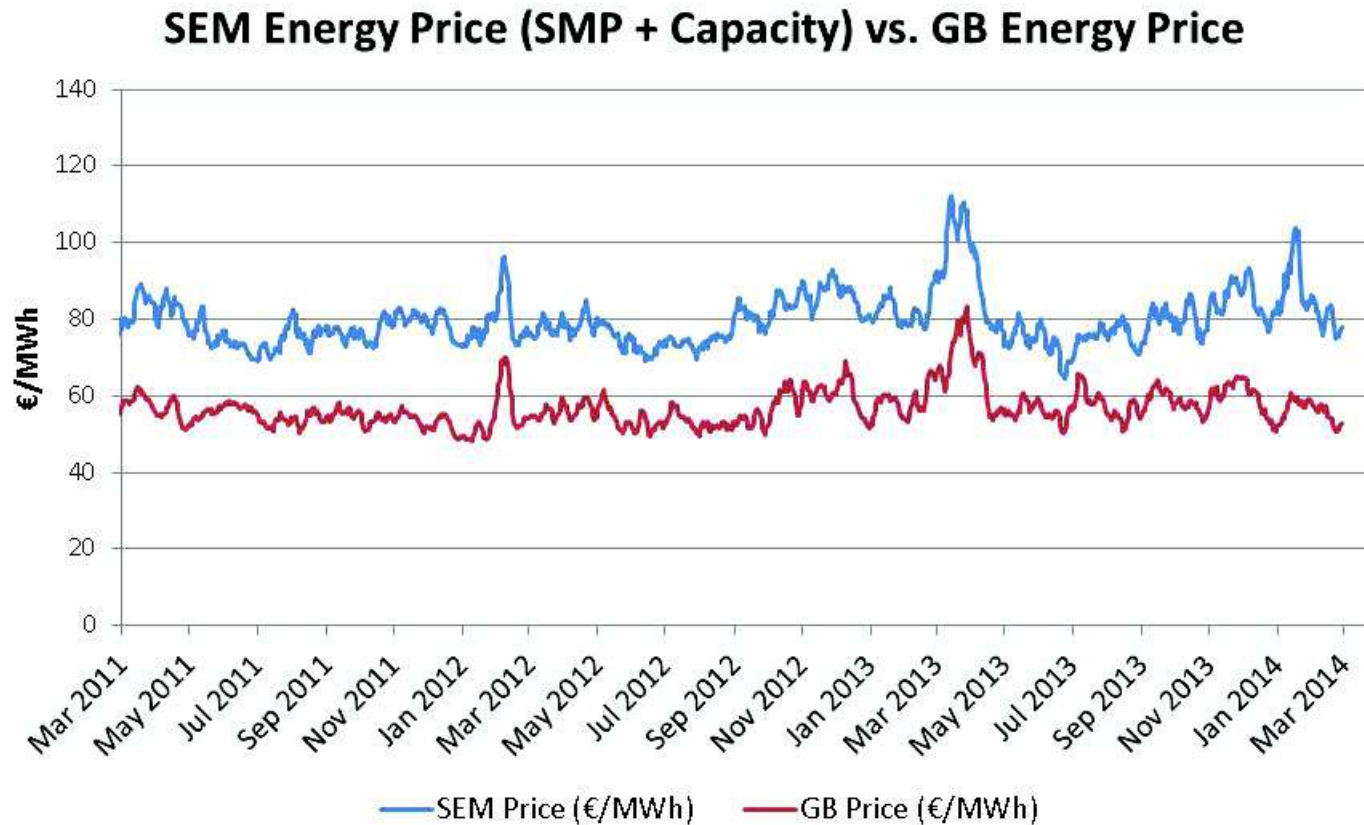
SEM is a €3 Billion Market



Gas Generation Marginal Fuel Source



SEM Prices Track GB Prices



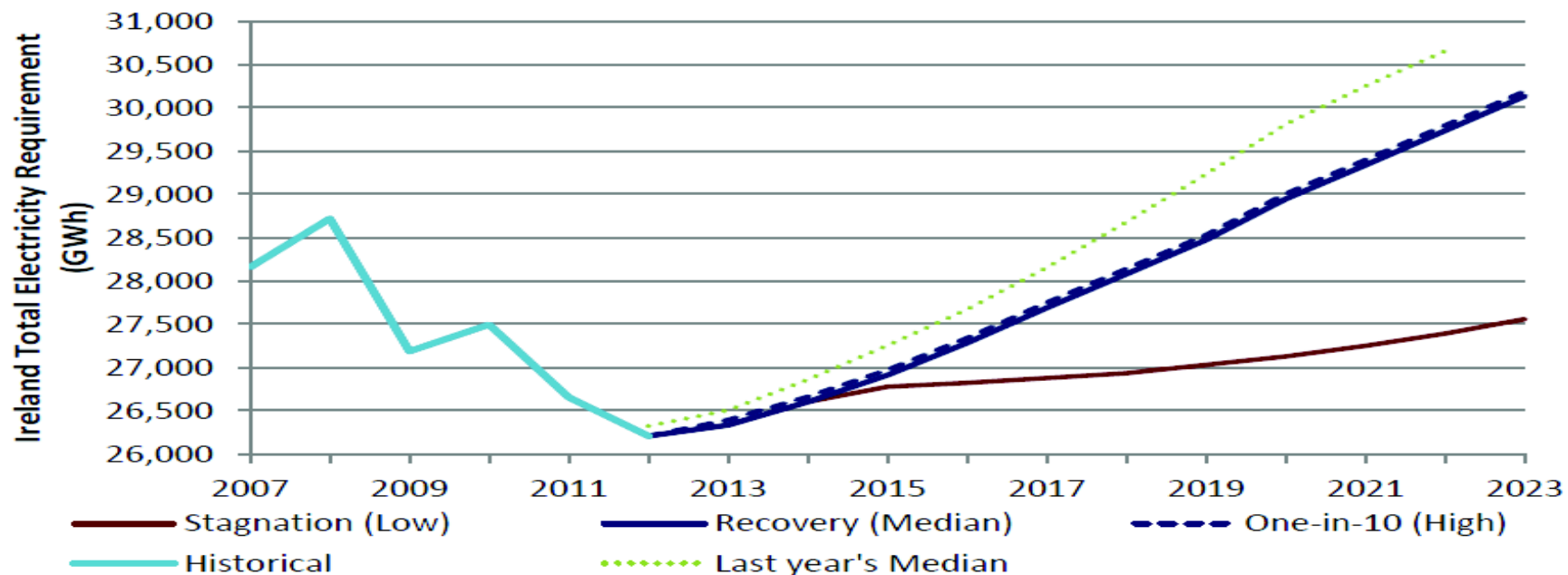
Success of the SEM

- 2000 MW of new/refurbished conventional generation:
 - CCGTs – Aghada, Whitegate, Great Island
 - OCGTs – Kilroot, Edenderry
- Refurbishment of Turlogh Hill
- New CHP
- 100MW of demand side response

BUT.....

From Shortage to Surplus

- Demand lower due to economy
- Generation capacity surplus – lack of clear exit signals

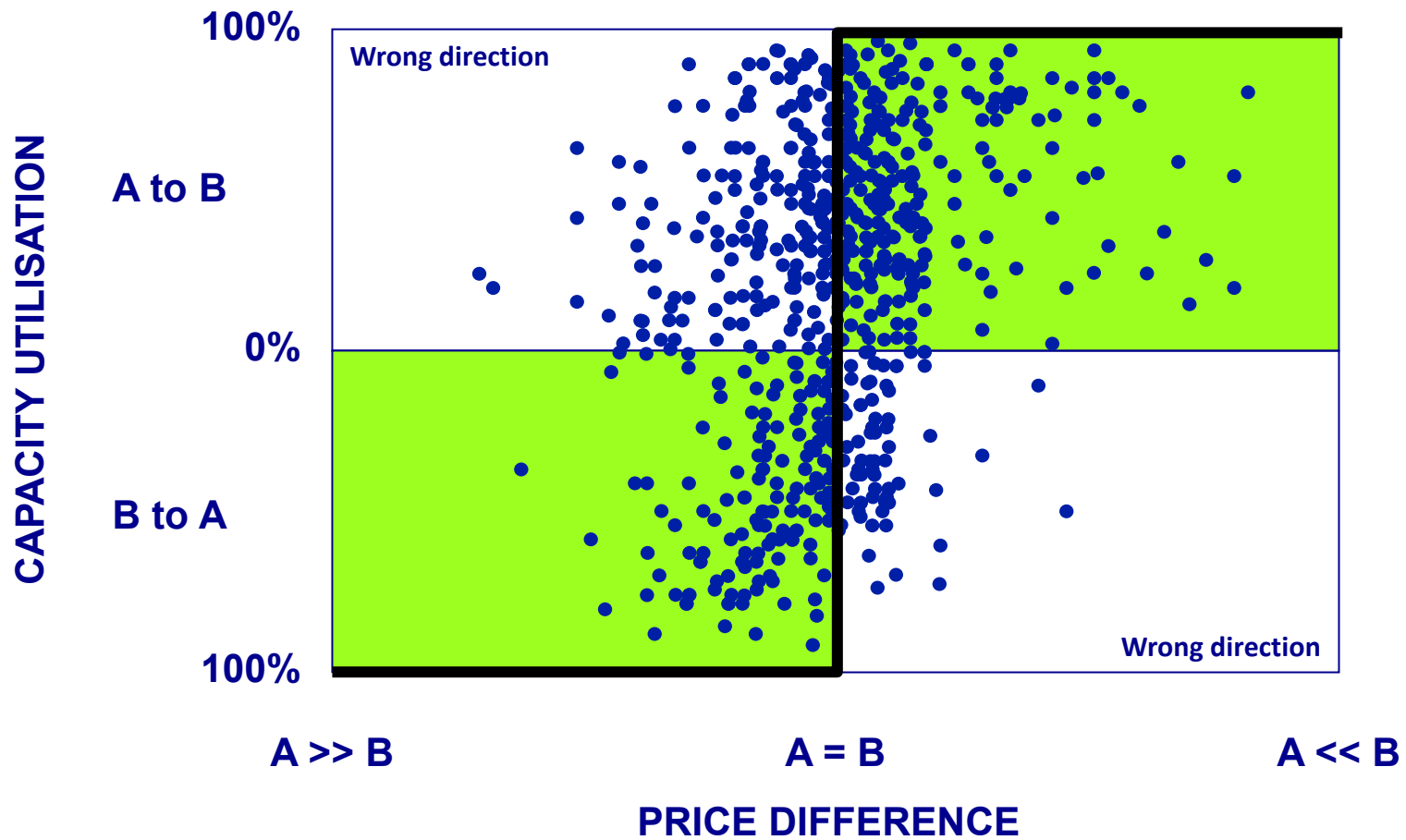


Source: All-island GAR, 2014 – 2023, EirGrid/SONI

Ireland Has Highest Wholesale Electricity Prices in Europe 2014



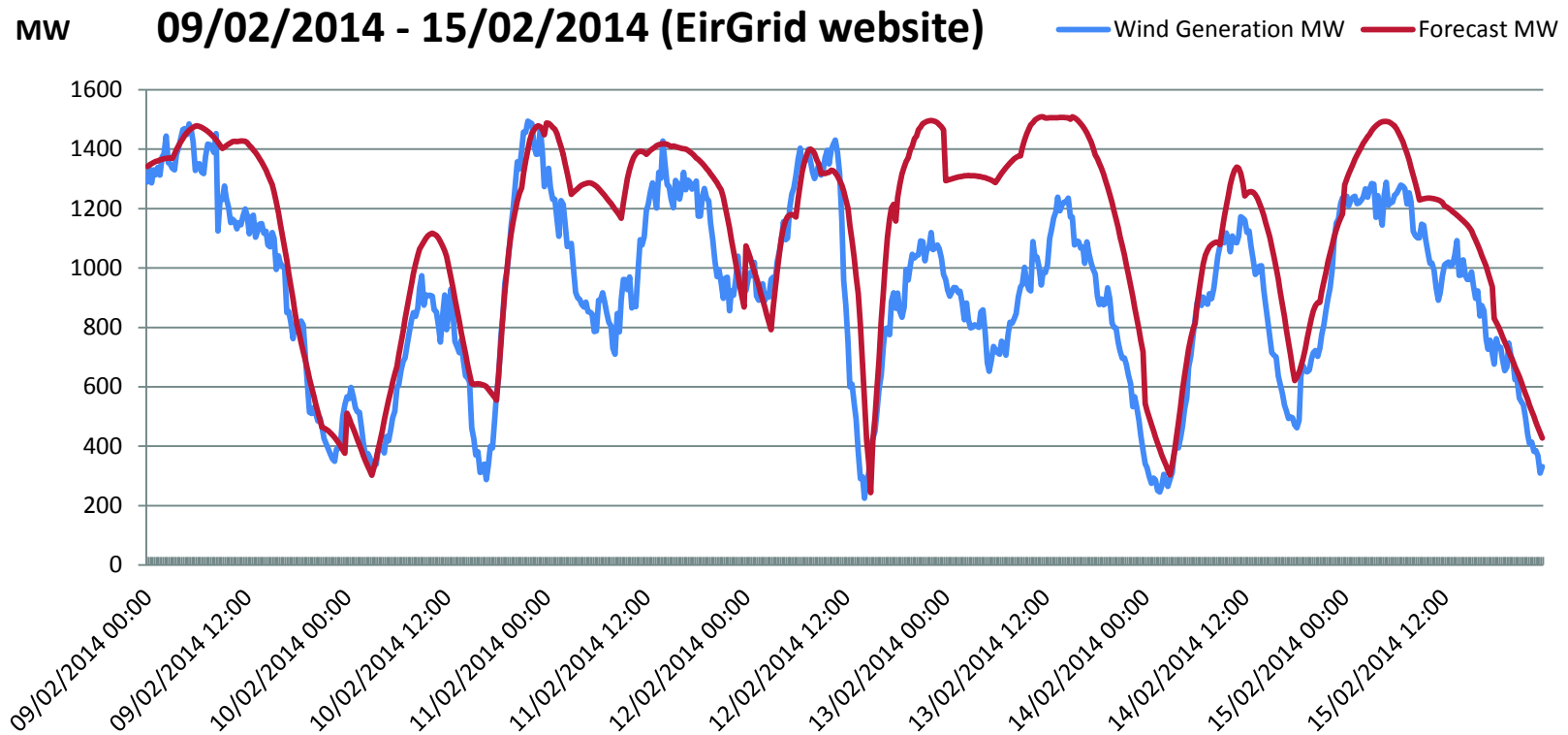
SEM Cross Border Trade Can Be Inefficient



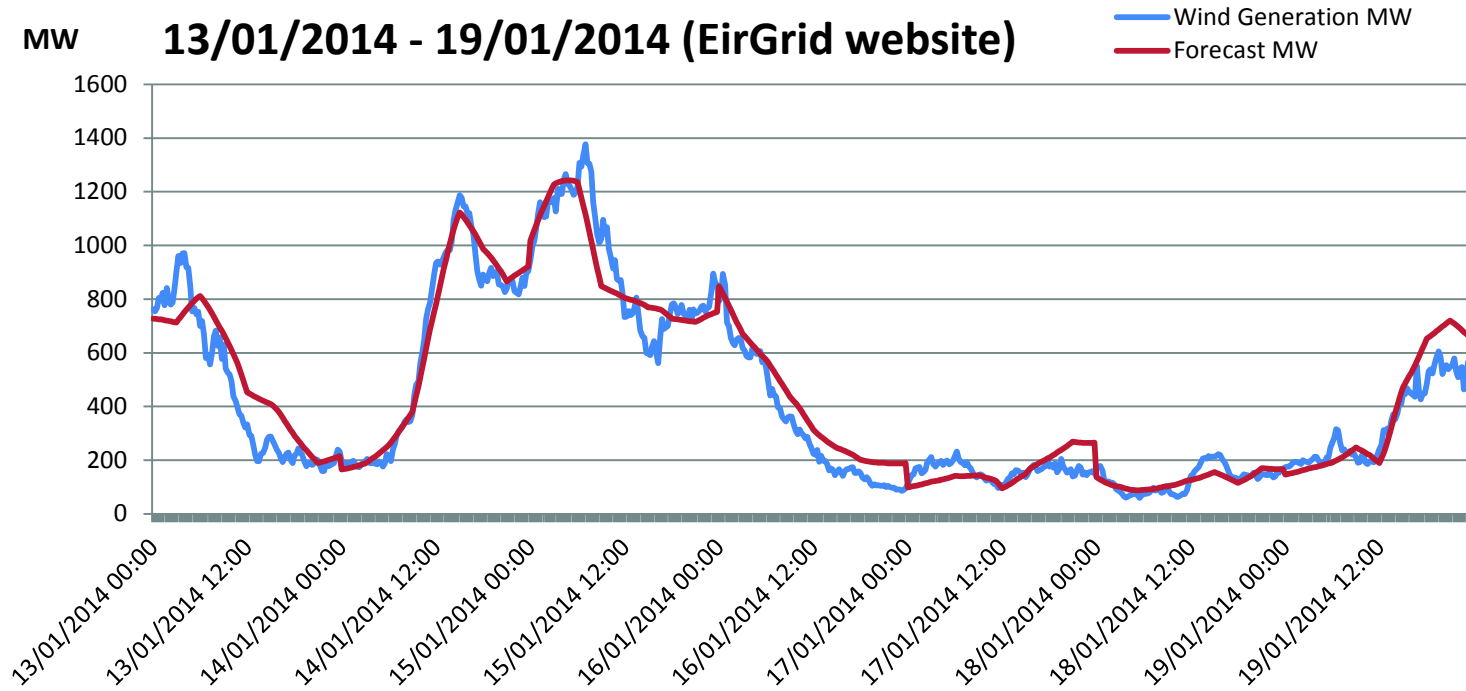
I-SEM Design Seeks to Address SEM Challenges

- Need to integrate 40% renewables on system by 2020
- Increased competition from interconnectors
- Flow on interconnectors consistent with Europe wide energy prices
- Encourages innovation and investment in demand side flexibility, energy storage technologies, etc.
- Achieves full compliance with European trading rules
- Encourage efficient exit of old plant.

Importance of Wind Forecasting on Prices

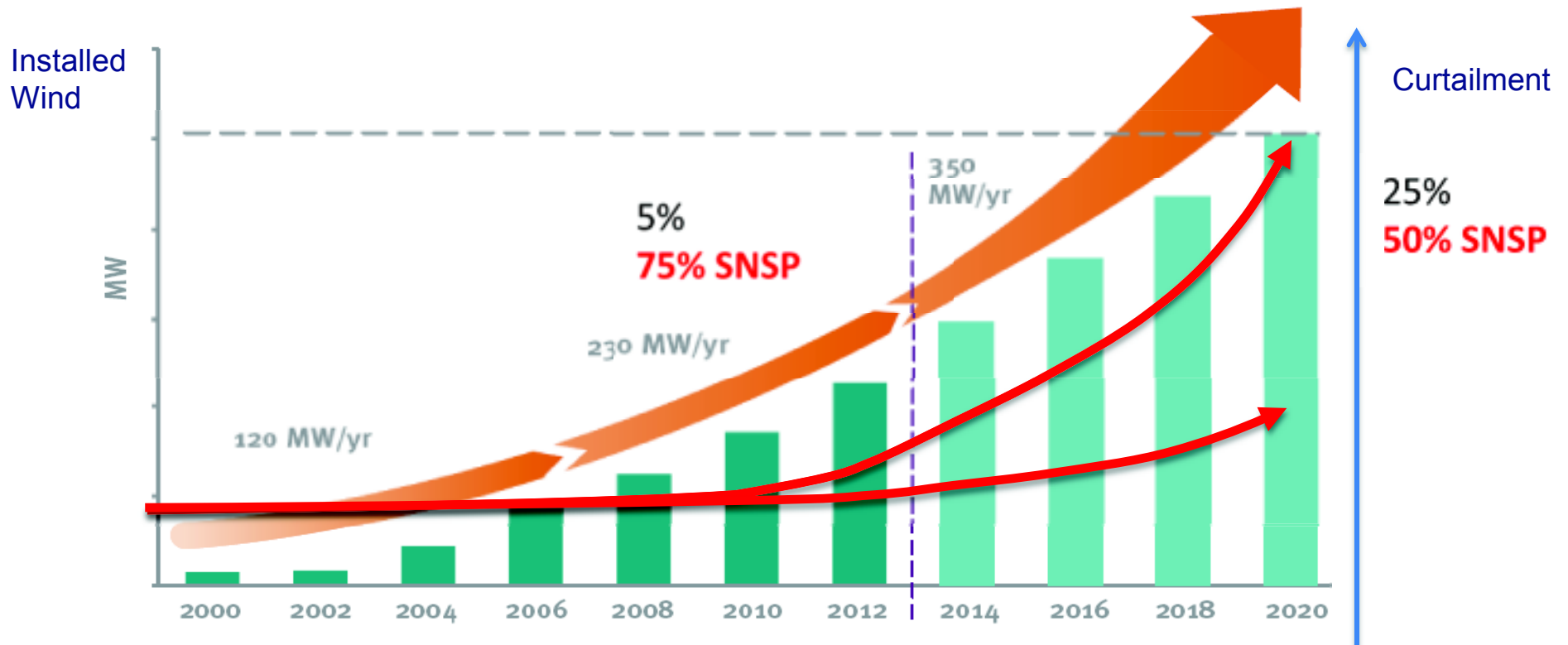


High Variability in Wind Output



Wind Curtailment

- New wind installation increasing by 350MW/yr
- System Non-Synchronous Penetration (SNSP) cannot exceed 50% without increasing curtailment or higher levels of system services



What does this mean for thermal Generators?

- Decreased running hours
- Need a mechanism to compensate for the flexibility that thermal generators provide to the system.
- Absent a capacity payment mechanism, would generation exit the market?

I-SEM

- I-SEM will integrate SEM into EU Target Model by end 2017
- Objectives:
 - Efficient use of interconnectors;
 - Price signals for efficient entry and exit
 - Renewables integration
- Where will Generator Revenues come from
 - Energy Trading Arrangements
 - Capacity Remuneration Mechanism
 - DS3 – System Services compensation for flexibility

