



# **CEER workshop on Wind integration**

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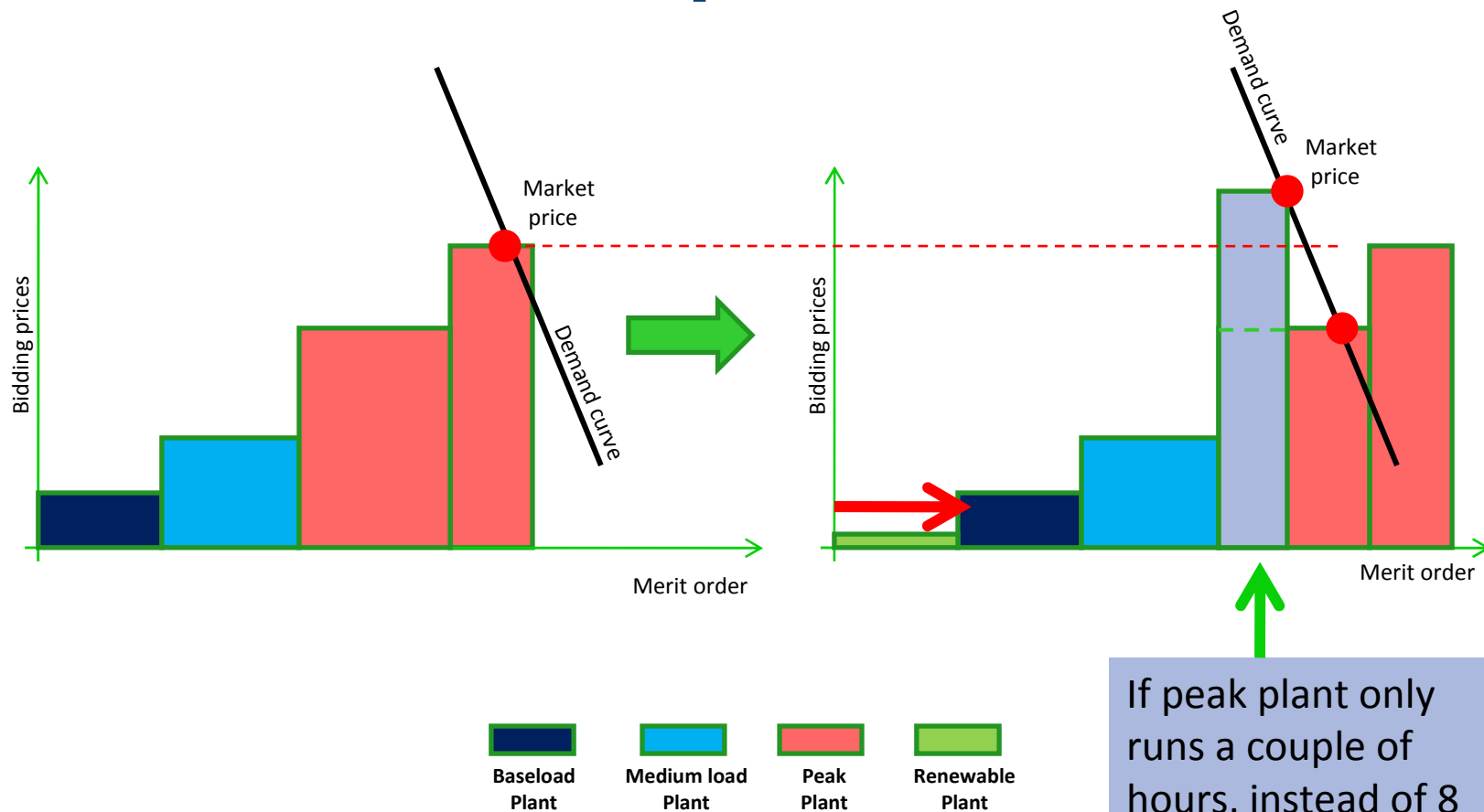
**Brussels, 11 February 2010**



## RES & Market: 1 world or 2 different worlds?

- CEER (p.31):
  - *“It is no longer practical to consider renewables and electricity markets as 2 separate topics: it is essential to consider their interaction and to promote the integration of renewable in the wholesale market”*
  
- EURELECTRIC would like to complete this statement:
  - *integration of RES in the wholesale market can only be successful if the wholesale market is integrated: we should “hurry up” with implementation of the EU target models, especially Day-Ahead, Intraday and Balancing”*

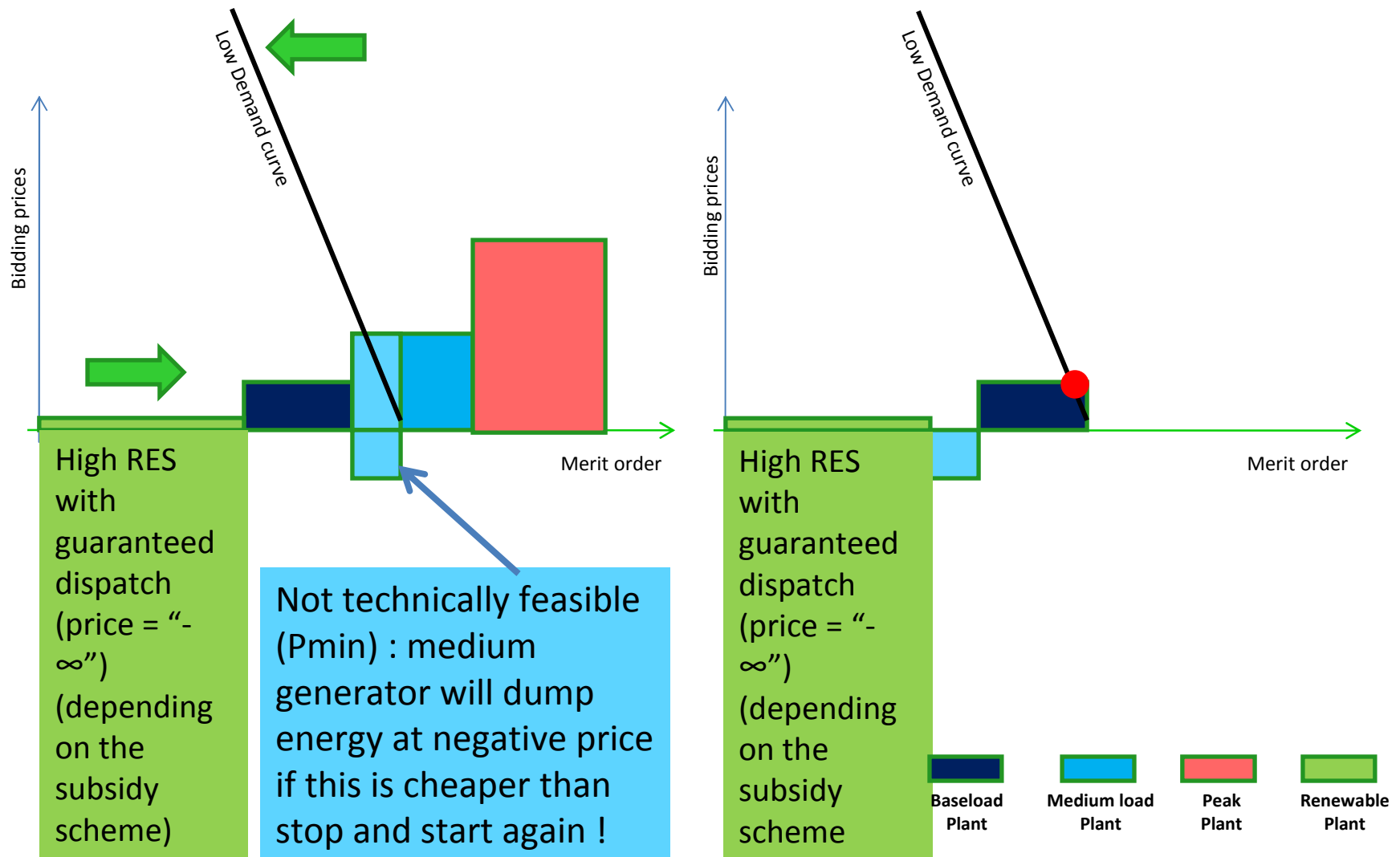
# Prices: up or down ?



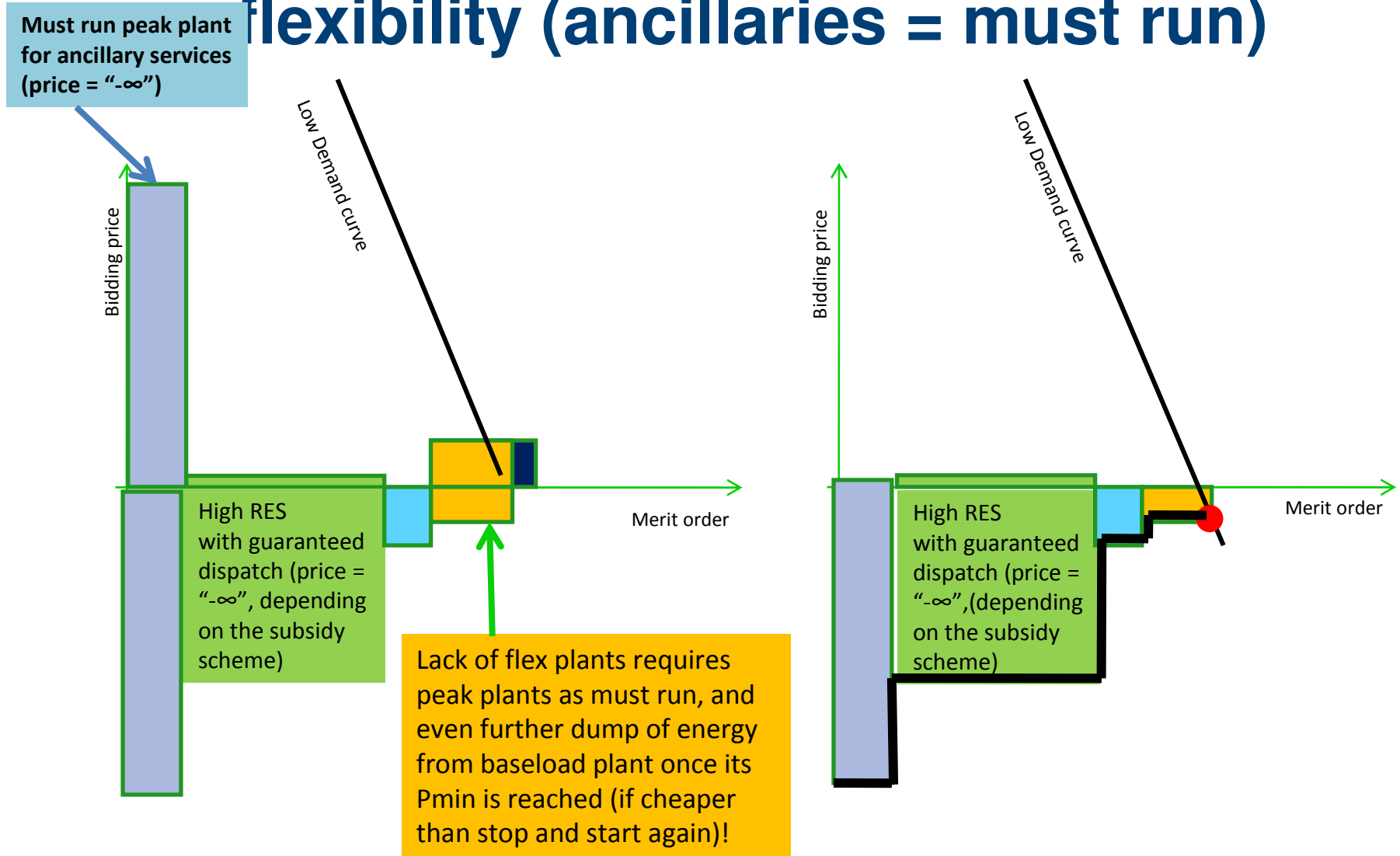
If peak plant only runs a couple of hours, instead of 8 hours, its marginal cost will be higher (start up costs)



# Oversupply leading to very low prices

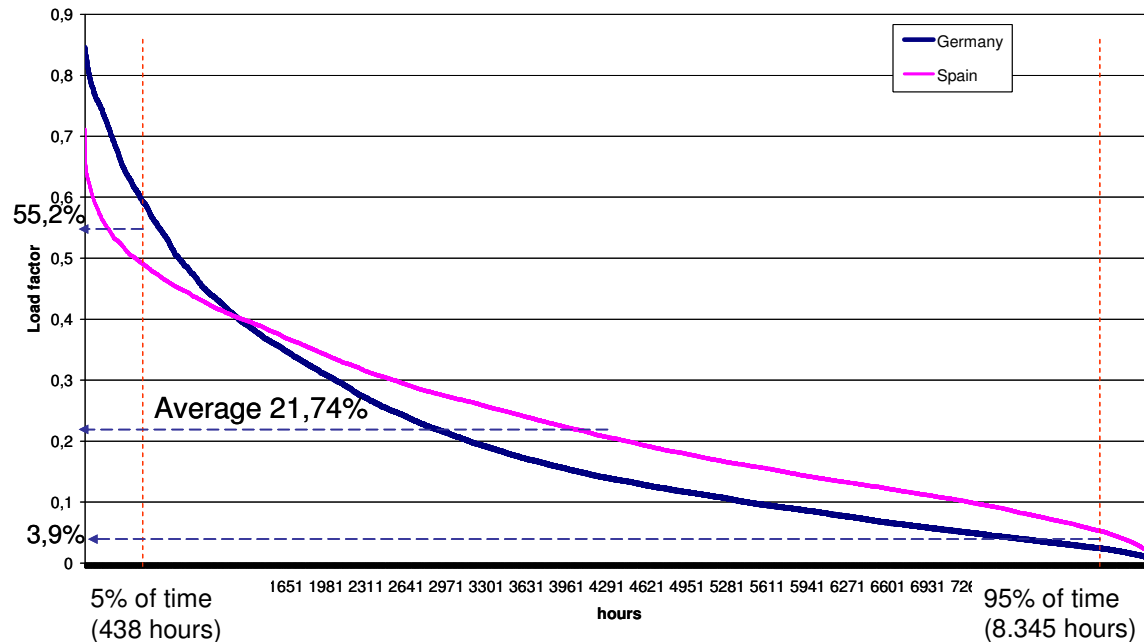


# Additional oversupply due to need for flexibility (ancillaries = must run)



# Back-up capacity needs

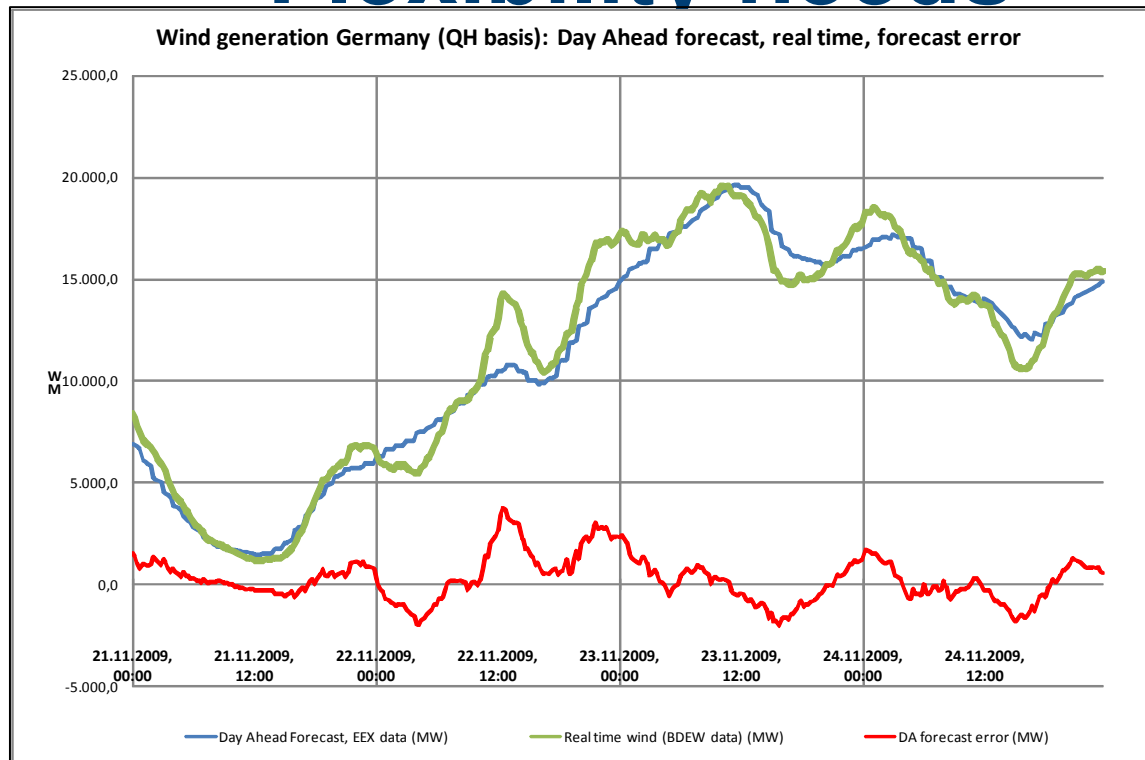
LOAD FACTOR DURATION CURVE OF WIND GENERATION - 2008 (Germany and Spain)



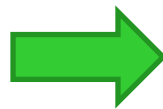
- Only 3.9% installed wind capacity has same (95%) firmness/availability as “conventional” plants
- Close to 45% of installed wind capacity has a level of firmness lesser than 5% and need permanent backup
- Between 3.9% and 55.2% of installed wind capacity needs backup on intermittent basis

**→ it will be necessary to invest in backup capacity**

# Flexibility needs



Between day ahead and real time, there are still huge differences, that only can be solved via more availability of flexible plants



But **MORE Flexibility** will have to be provided amongst other by:

- **Gas** procurement, gas storage as well as grid access
- **Electricity** storage solutions
- **Demand** side management

# Generation investments

- Backup and flexibility needs will require conventional generation investments (peak plants, hydro, storage)
- However, RES plants will push out conventional plants of the merit order, important load duration reductions already experienced, putting investments at higher risk.
- Generators will invest when market prices give the right ROI : EURELECTRIC believes the market will perform adequately subject the right regulatory framework is in place. Therefore:
  - **“Energy only”** market design: **Caps and Floors to be avoided** as they distort the incentives for investment in peak plants and storage facilities
  - **Evaluation if, how,** and on **what regional scale “capacity investment incentives”** might be implemented





## Market integration: the “software” solution

- Bringing flexibility together through Europe requires the appropriate market design
- PCG target models are in our view the right way forward: now progress on the roadmaps needed
- Speeding up the implementation of the target model, **in particular Day-Ahead, Intraday and Balancing is paramount for the integration of the market and for the integration of RES** which will require much more flexibility throughout Europe



## Grid investments: the “hardware” solution

- Wind plants connected in the middle of the sea to several markets create an additional dimension to the regulatory overview that was not foreseen in the 3<sup>rd</sup> package published in the same year as the RES directive!
- Regulatory models and incentives whereby one TSO invests and other TSOs (benefiting market) contribute have to be introduced
- A North Sea grid is not enough, also a massive “**Continental**” expansion and reinforcement has to be planned → **high expectations on the ENTSO-E TYNDP**

## ***EURELECTRIC Conference***

# Building a Secure & Sustainable Electricity Future: How Can Market Integration Contribute?

**17 March 2010**

Hôtel Renaissance, Brussels

**Speakers from:** DG TREN, ERGEG, ENTSO-E, EuroPEX, EFET, IFIEC, EWEA, Poyry Consulting, IESE, etc.

### **Key Topics:**

- Integration of Renewables: how to cope with wind intermittency?
- Grid Investments: what role for the 10Year Network Development Plan?
- Regional Markets: how to balance top-down and bottom-up integration?