

# Old Markets - New Markets: an Internal Energy Market beyond 2014?

**ENERDAY, Dresden**

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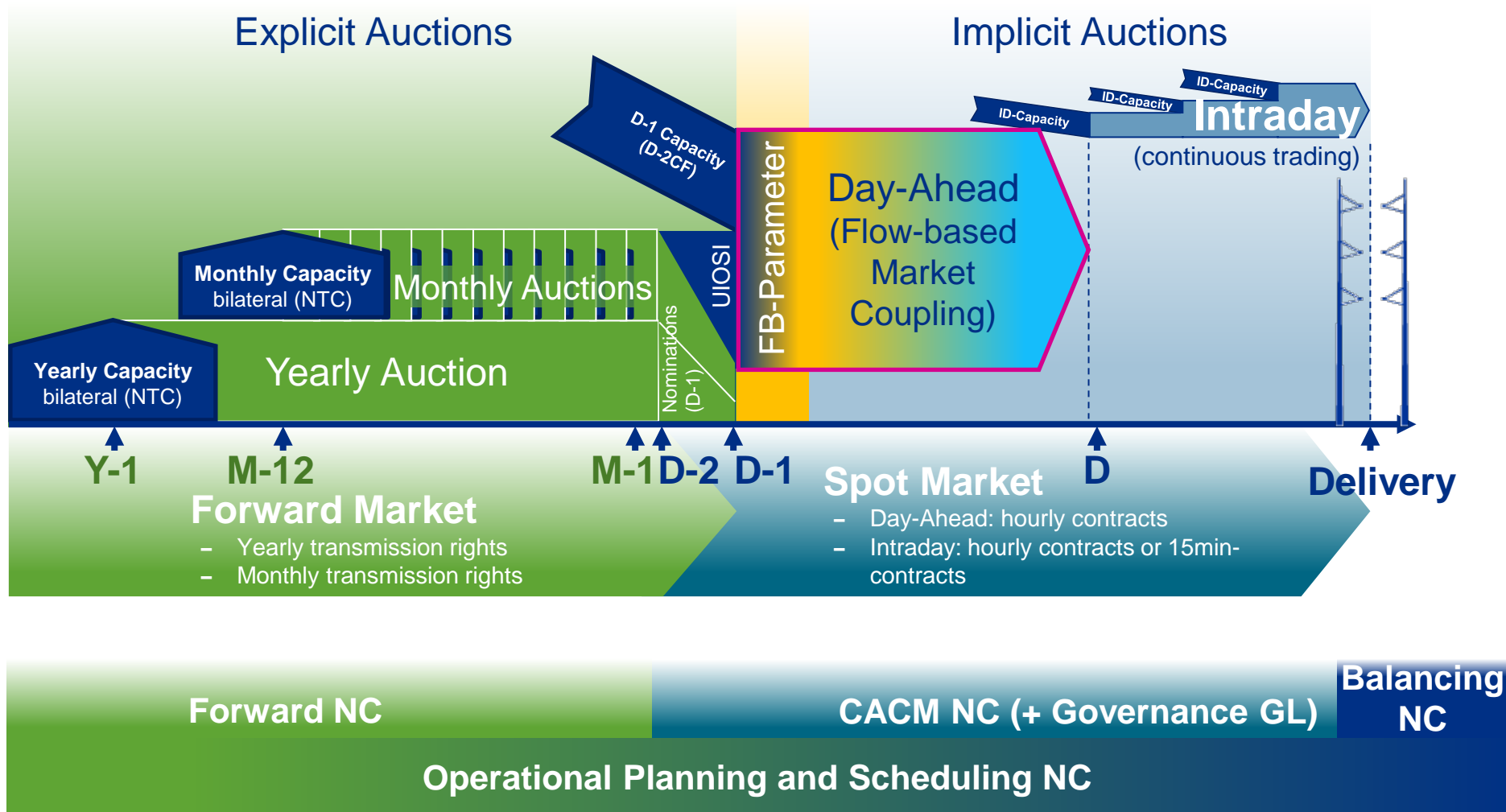
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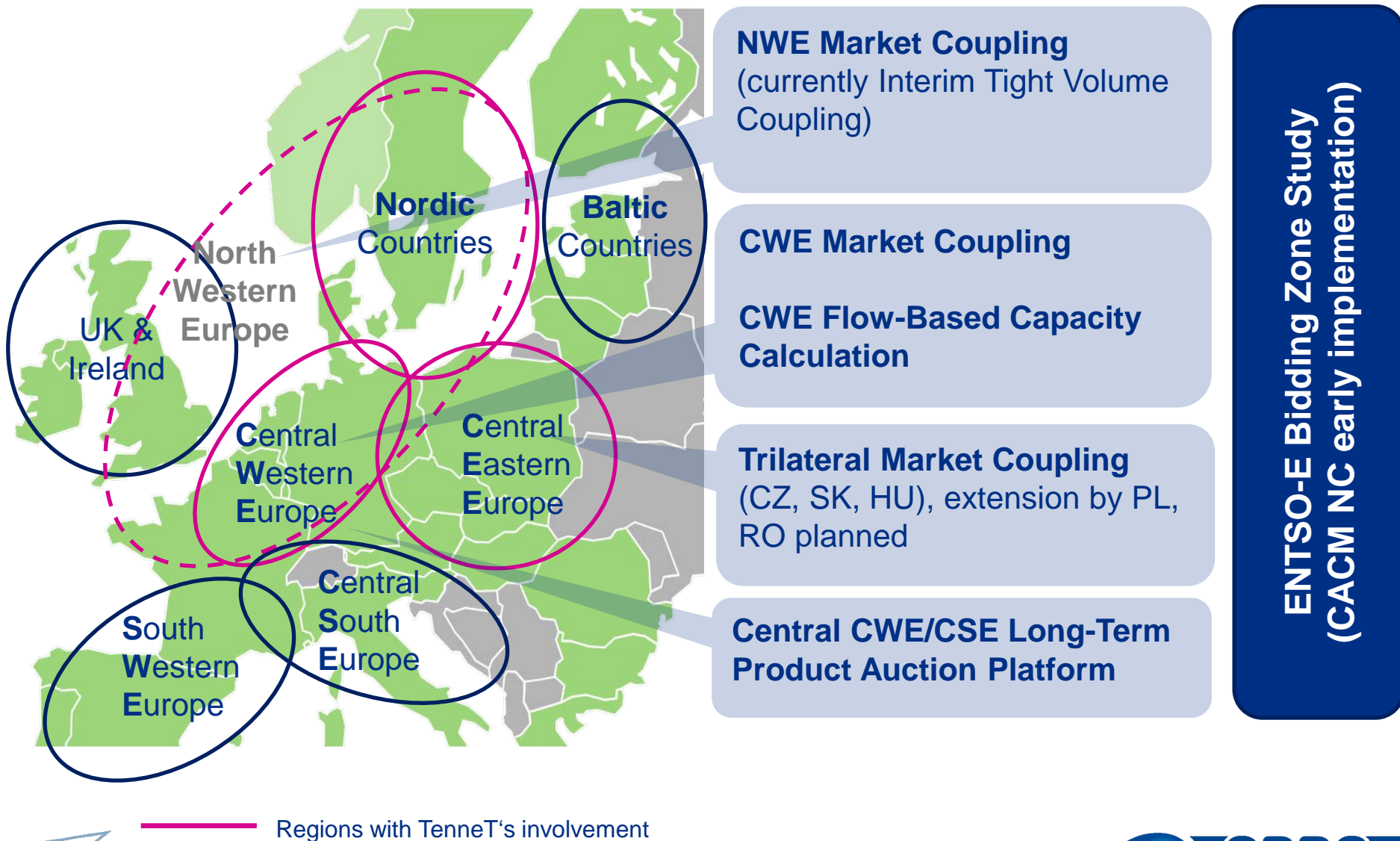
# First, Second, and Third Best...

- **Theory:**
  - first best solution according to textbook economics
  - nodal pricing, energy only market
- **Policy:**
  - second best solution: European Target Model
  - zonal electricity markets & energy only market (?)
- **Practice – the devil's in the detail:**
  - a third best solution: market and system interact!
  - national market designs and the “single” Internal Energy Market
  - Quo vadis energy market?

# The European Target Model and Network Codes



# Regional Implementation – Where are we?

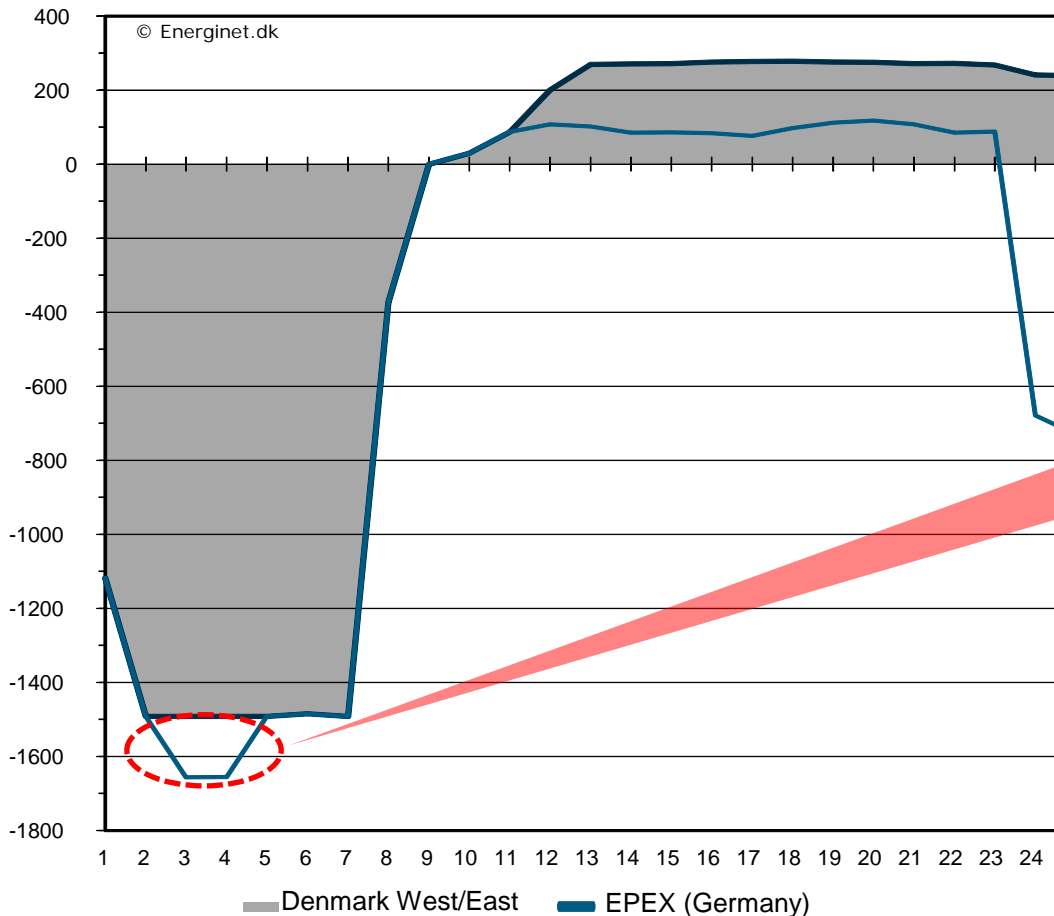


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# Market Coupling! ...and Harmonization?

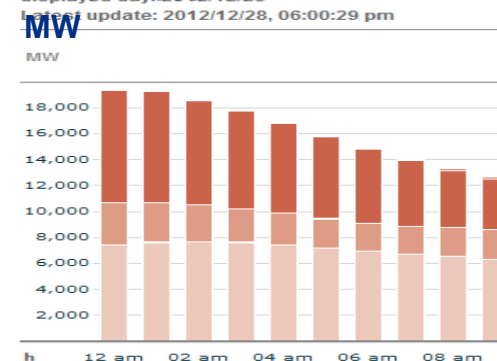
Nord Pool Spot / EPEX Spot  
Day Ahead Prices 2012/12/25 in DKK/MWh



- minimum price DK:  
-1500 DKK/MWh (200 €/MWh)
- minimum price EPEX:  
-3000 €/MWh

**Curtailment of  
Danish must-run  
capacities**

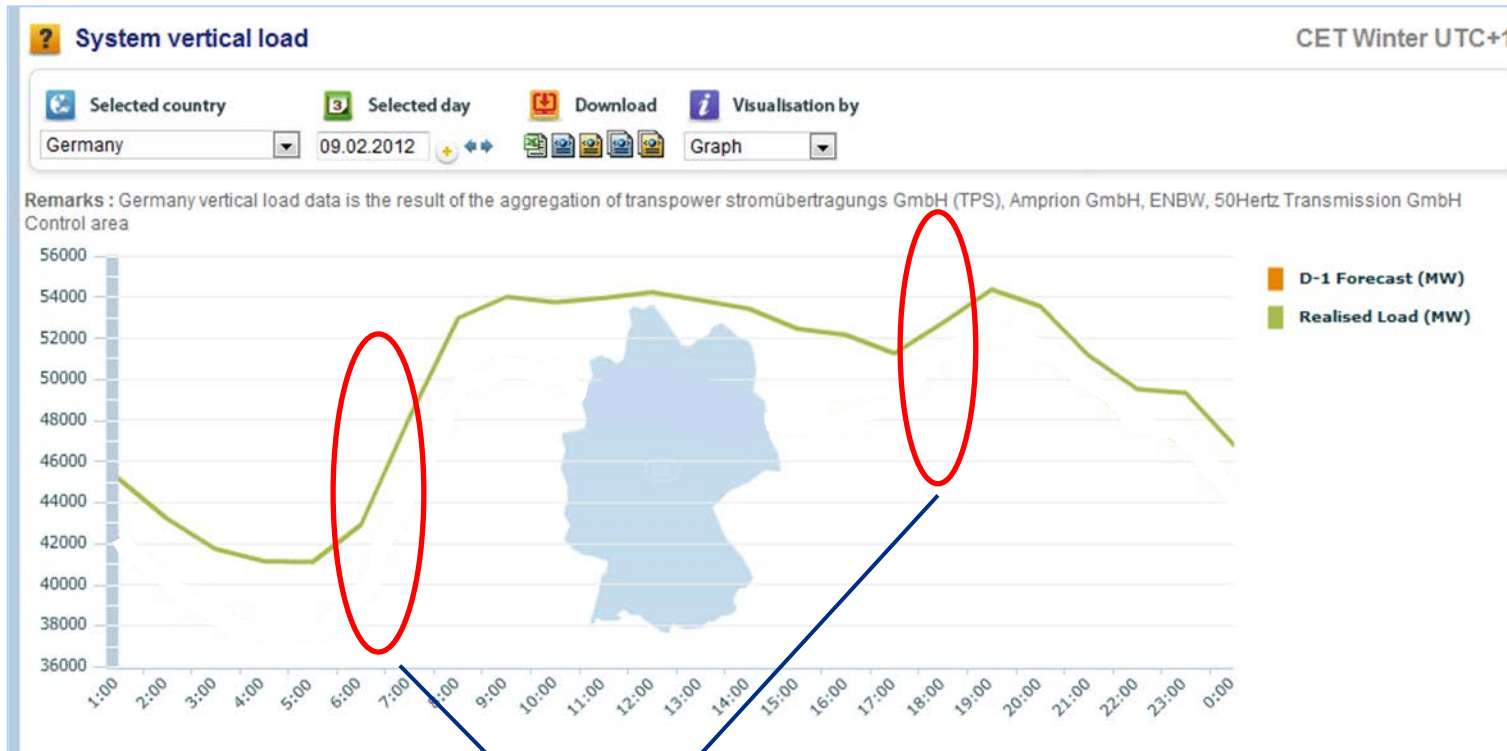
Wind infeed DE in  
MW



➔ **Must-run capacities curtailment by functioning of the Price Coupling Algorithm**  
Reason: unharmonized price caps in local markets.

# Hourly Products & Balancing Power Peaks

## - Background



Source: Transparency Platform entsoe.net

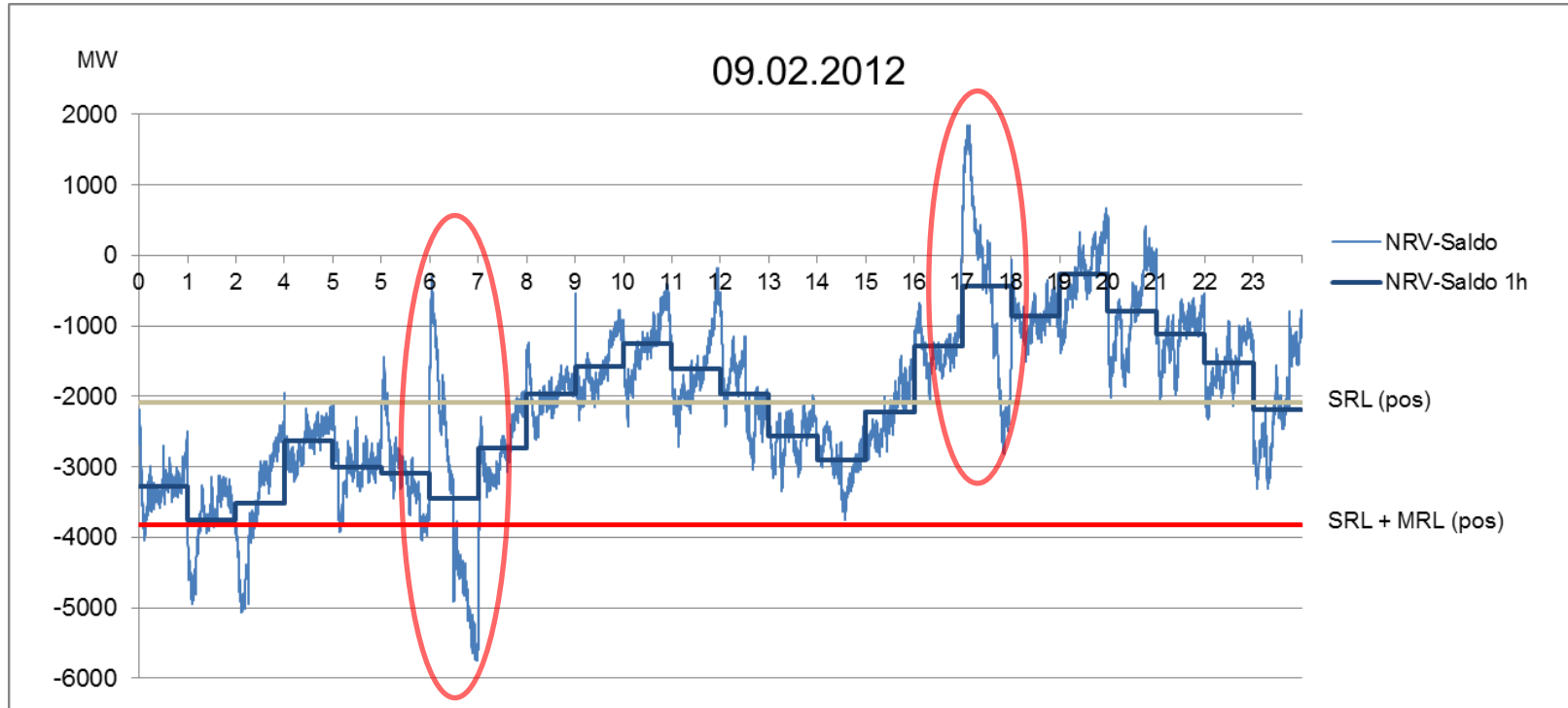
**Major market  
volume based on  
1h-products**



**systematic shortage in last two  $\frac{1}{4}$ -h**

**systematic overshoot in first two  $\frac{1}{4}$ -h**

# Hourly Products and Balancing Power Peaks



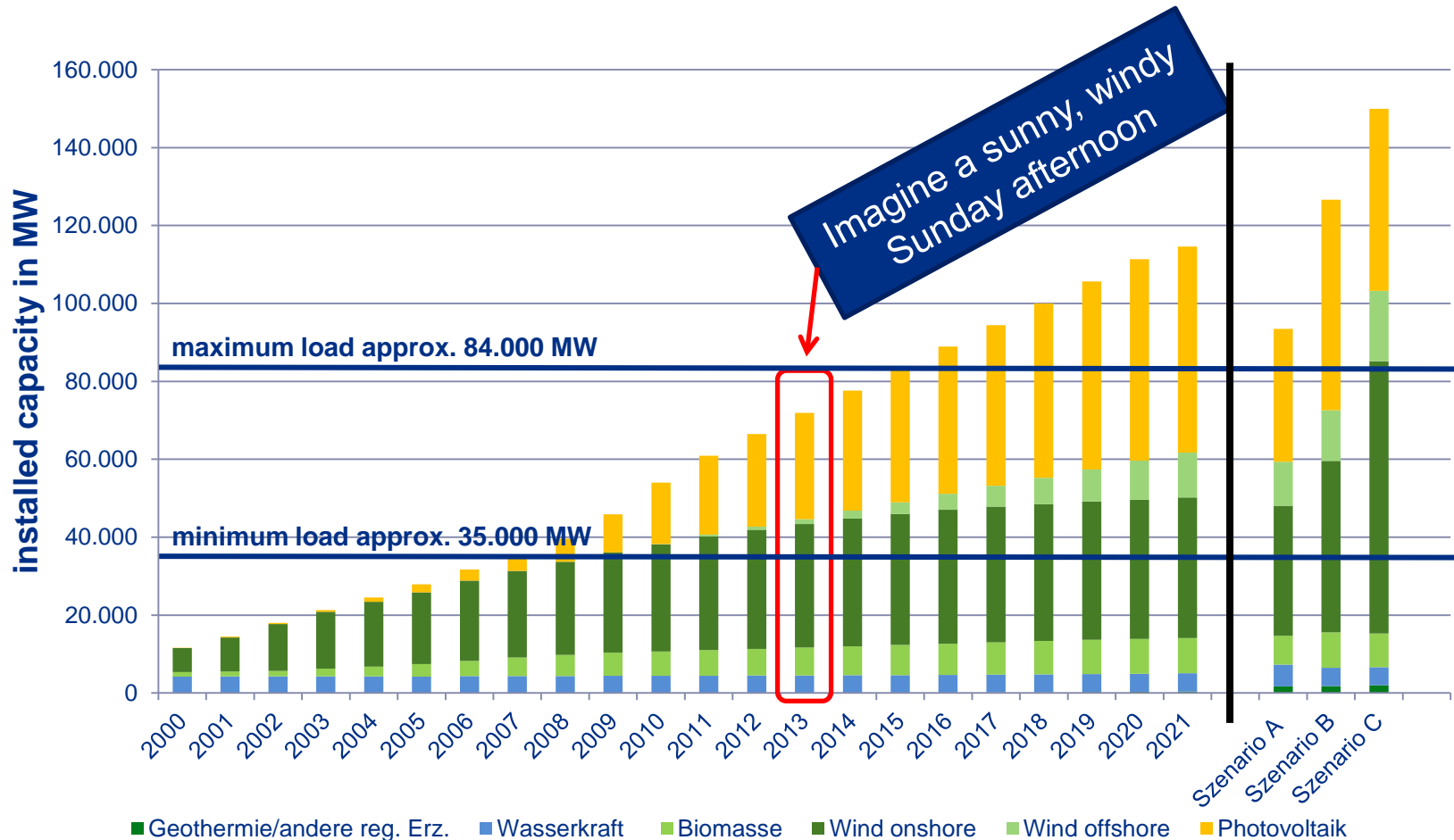
Source: TenneT

- ➡ Major market volumes based on hourly products (long term, day ahead), leading to strong need for balancing power.
- ➡ TenneT strongly promotes further liquidity in ¼-hour products (Intraday, OTC).



# Outside the market:

## Forecasted RES development in Germany

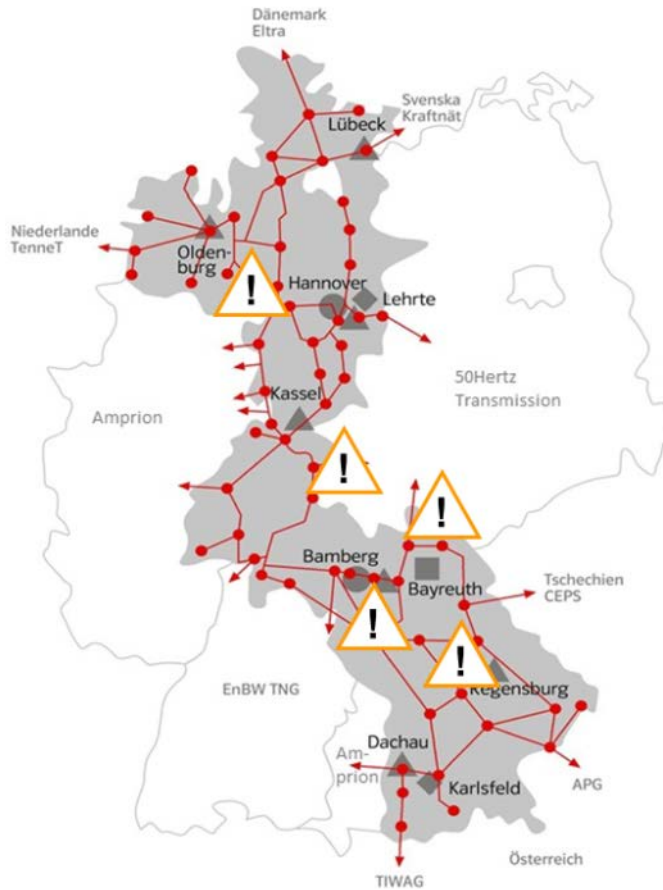


→ (Flows) currently not TSO-influencable with market mechanisms

Sources: BMU, Langfristszenarien und Strategien für den Ausbau Erneuerbarer Energien in Deutschland, 2009  
Szenariorahmen B für den Netzentwicklungsplan 2012

# The TSO's dilemma: The grid is not a copper plate

Redispatch frequency increases:



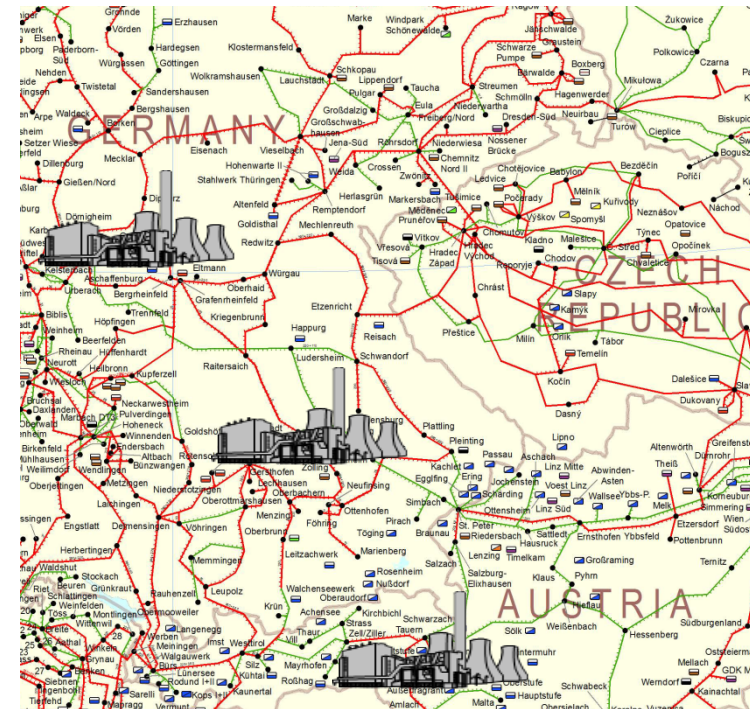
Year	Days	Redispatch Actions
2003	2	2
2004	14	15
2005	51	51
2006	105	172
2007	185	387
2008	144	228
2009	156	312
2010	161	290
<b>2011</b>	<b>308</b>	<b>998</b>
<b>2012</b>	<b>344</b>	<b>970</b>

Nuclear  
phase out  
Germany

# Quo vadis energy market?

From a market with some regulation to regulation with a bit of market ...

- triggered by the “Energiewende”, TenneT as an unbundled Transmission System Operator has contracted eight power plants with ca. 2,000 MW generation capacity and in addition has been involved in
  - arranging fuel storage
  - structuring gas procurement and gas contracts
  - coordination of power plant revisions, including financing power plant maintenance and repairs

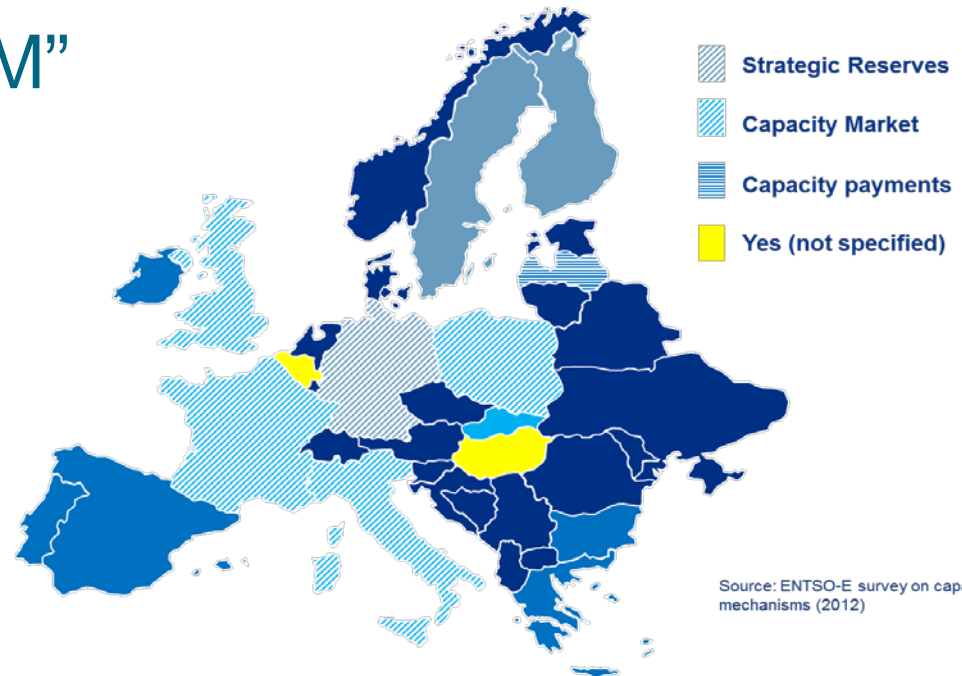
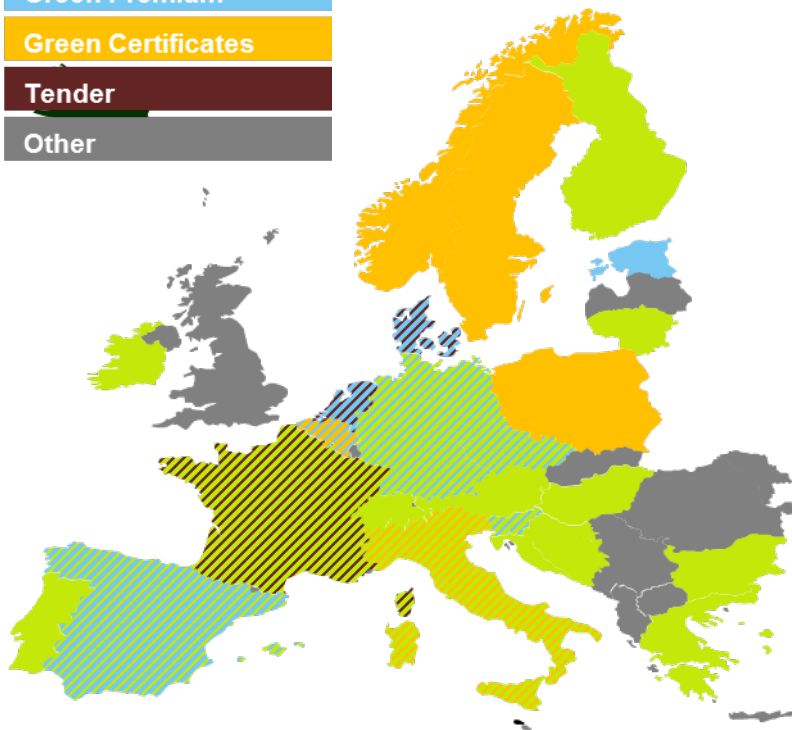
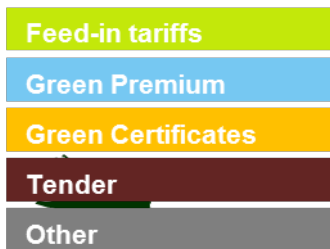


➡ Are we back to the future of market design?

# Quo vadis energy market?

## Patchwork or “Single IEM”

### RES Schemes



Source: ENTSO-E survey on capacity mechanisms (2012)

### Capacity Markets

... Remedies to heal adverse effects of other remedies ...

# Current market design issues ...

- What “Market” if the market share is decreasing ?
- How to attract investments in conventional generation ?
- How to incentivise market parties to contribute to Security of Supply in the operating planning phase ?
- How to grant back-up and reserve for intermittent generation ?
- How to smooth the problem of grid expansion not keeping pace with changes in the generation pattern ?
- How to reconcile diverging (national) repair actions to save the IEM ?
- How to bring back on track various unstable regulated components ?

➔ **Now's the time to set the course for a post-2014 clean, secure, competitive and European energy system with a functioning IEM**

# Thank you for your attention

TenneT is Europe's first cross-border grid operator for electricity. With approximately 20.000 kilometres of (Extra) High Voltage lines and 36 million end users in the Netherlands and Germany we rank among the top five grid operators in Europe. Our focus is to develop a north-west European energy market and to integrate renewable energy.

**Taking power further**

[www.tennet.eu](http://www.tennet.eu)

