



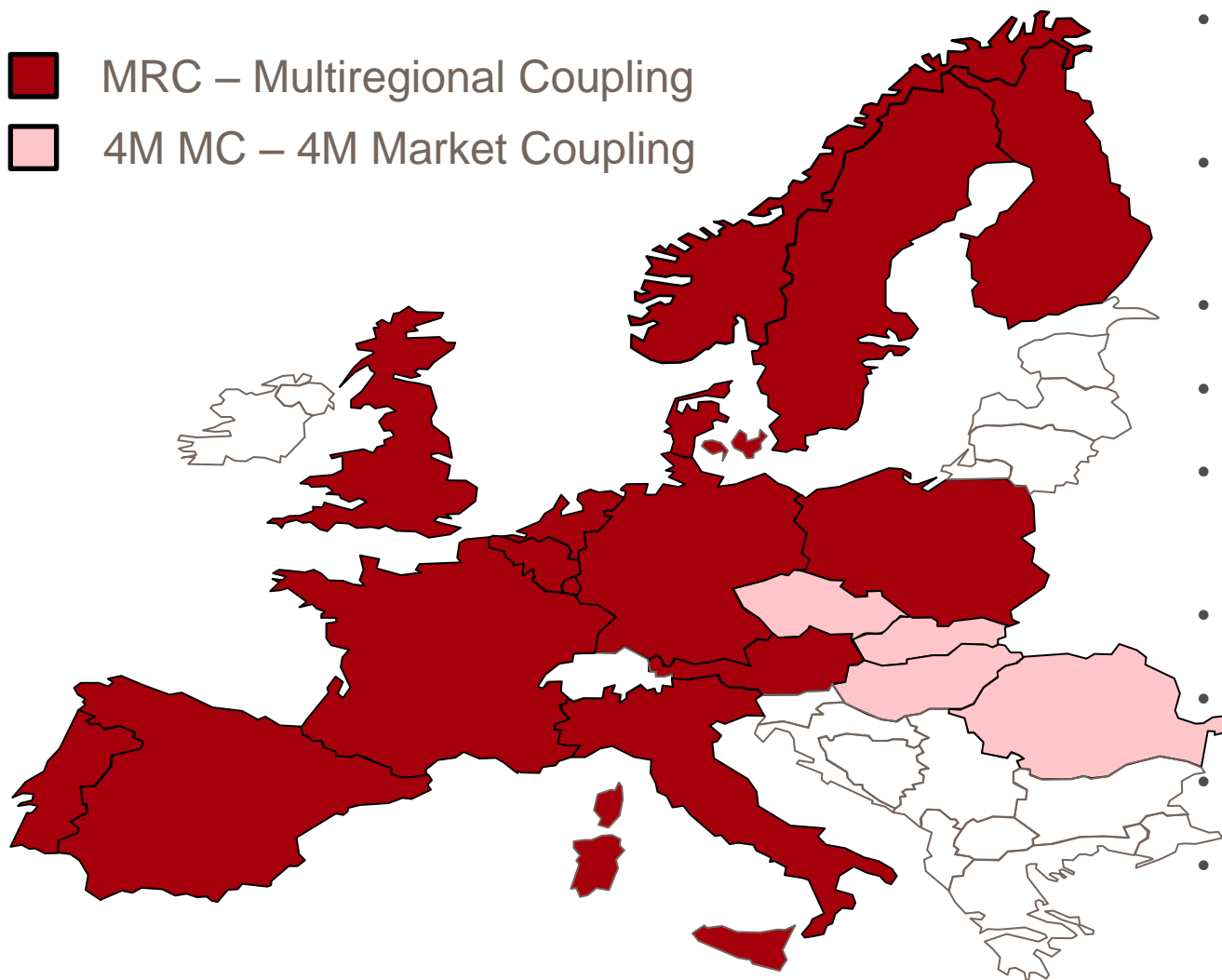


# Progress of Market Coupling in Europe

Manfred Pils

# Status Day-Ahead Market Coupling

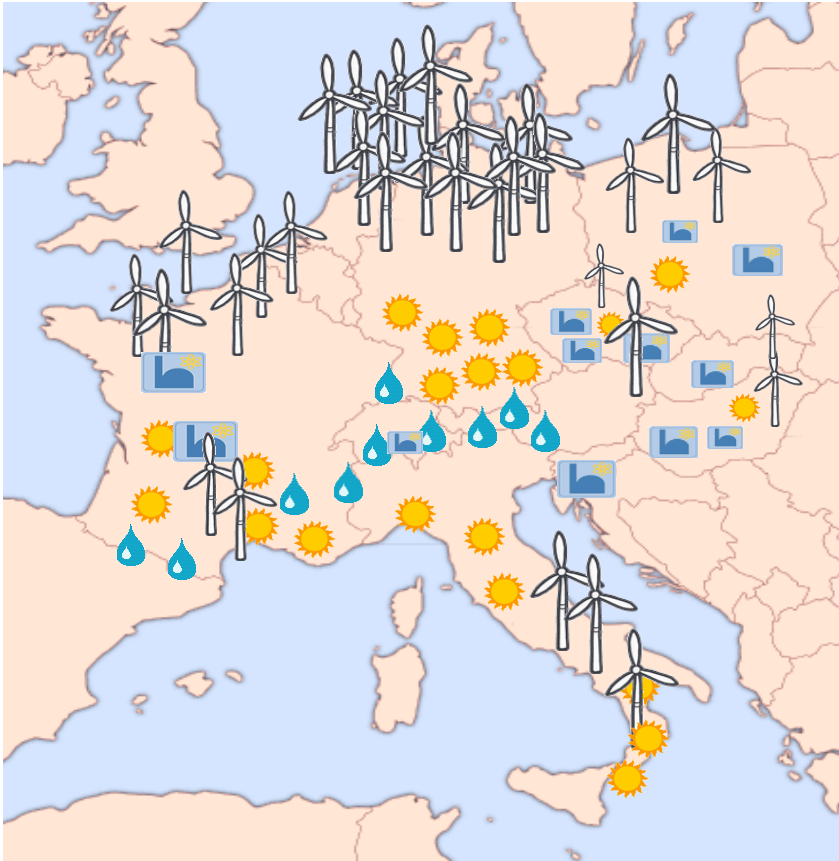
-  MRC – Multiregional Coupling
-  4M MC – 4M Market Coupling



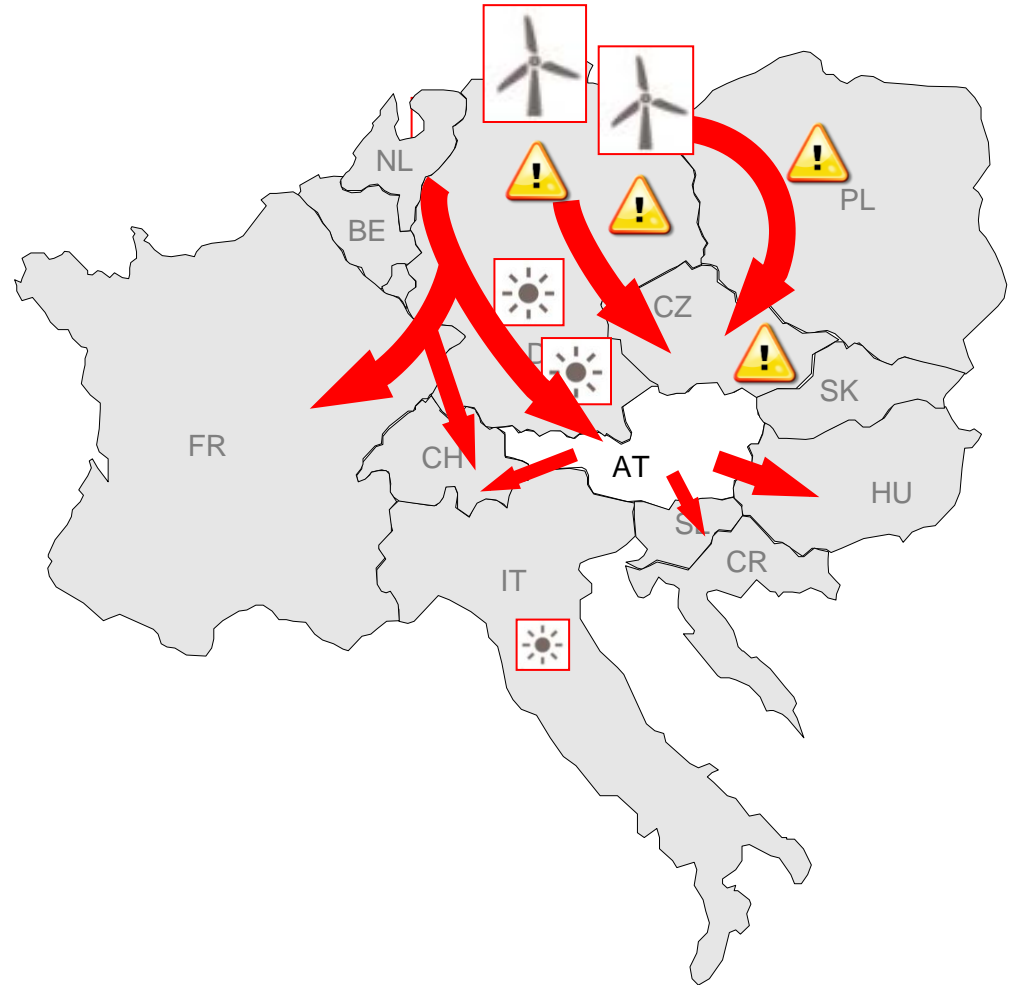
- 2006 Trilateral Market Coupling (BE-NL-FR)
- 2010 CWE MC (+DE/AT/LUX)
- 2010 SWE MC (ESP-P)
- 2012 3M MC (CZ, SK, HU)
- 2014 NWE MC (CWE + GB, N, S, FIN, DK PL, Baltic)
- 2014 MRC (NWE + SWE)
- 2014 4M MC (+RU)
- 2015 MRC (+ IT, SLO, AT)
- 2015 CWE Flowbased within MRC

# Dramatic change in energy mix causes problems in the European grids

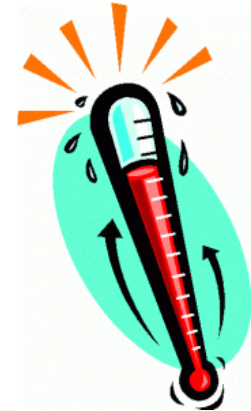
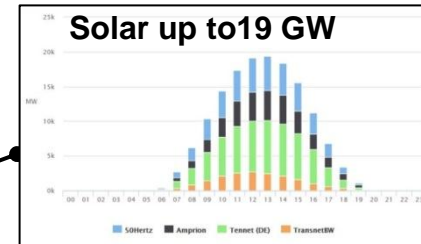
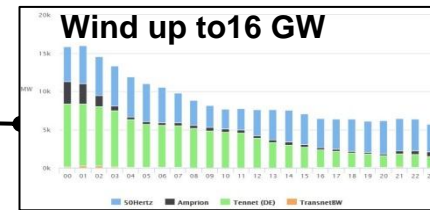
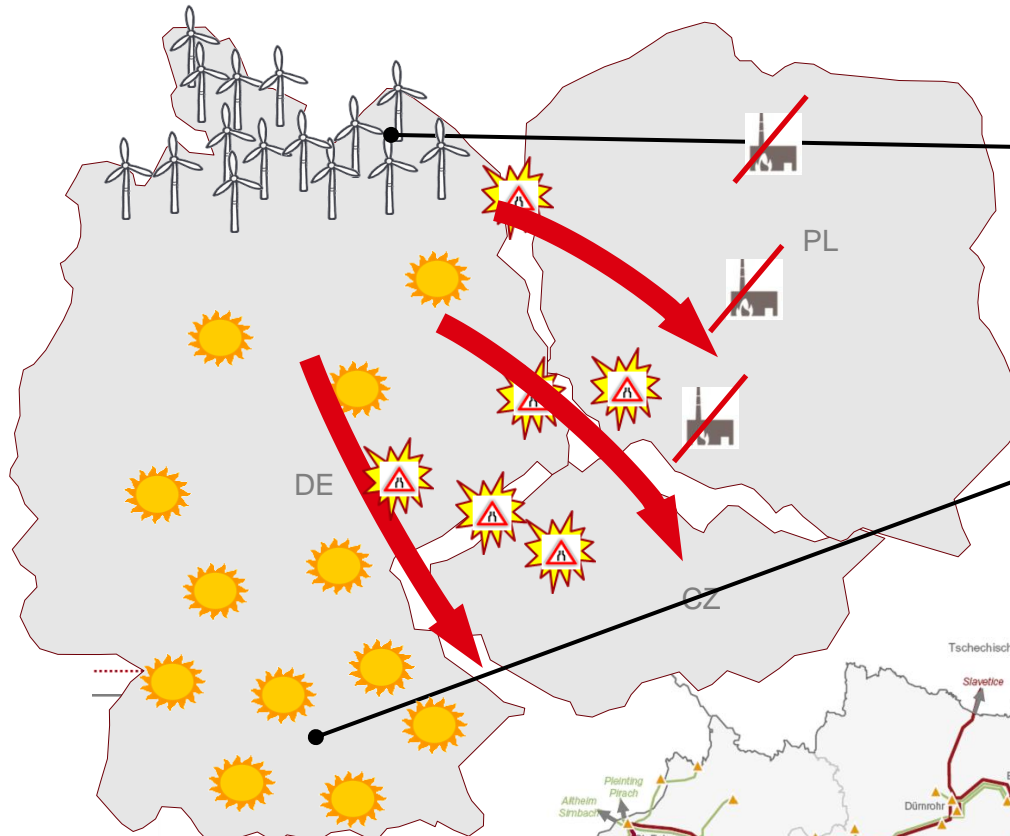
Change in energy mix



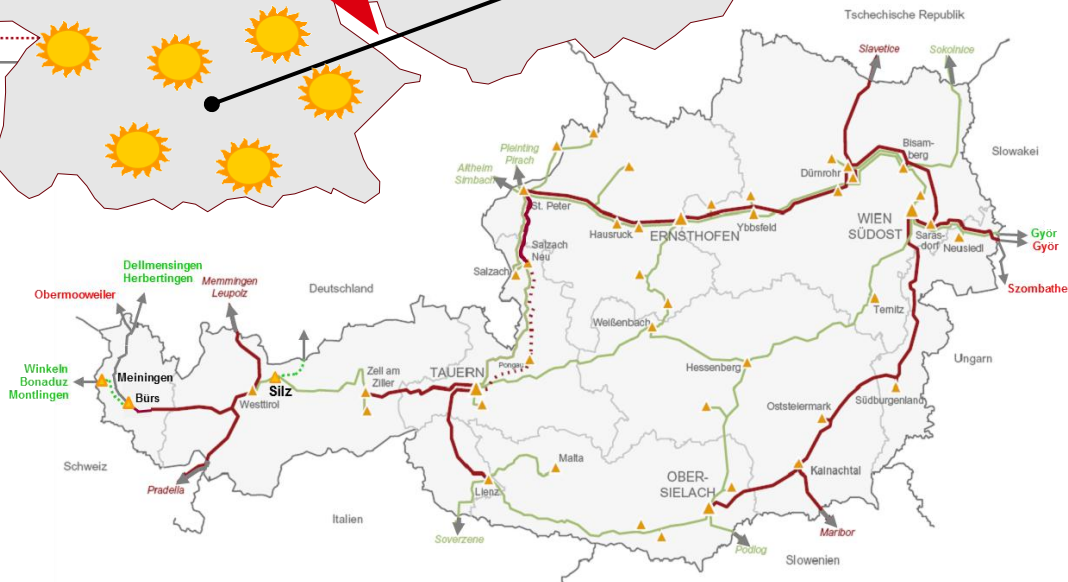
Distributed loadflows due to lack of transmission lines



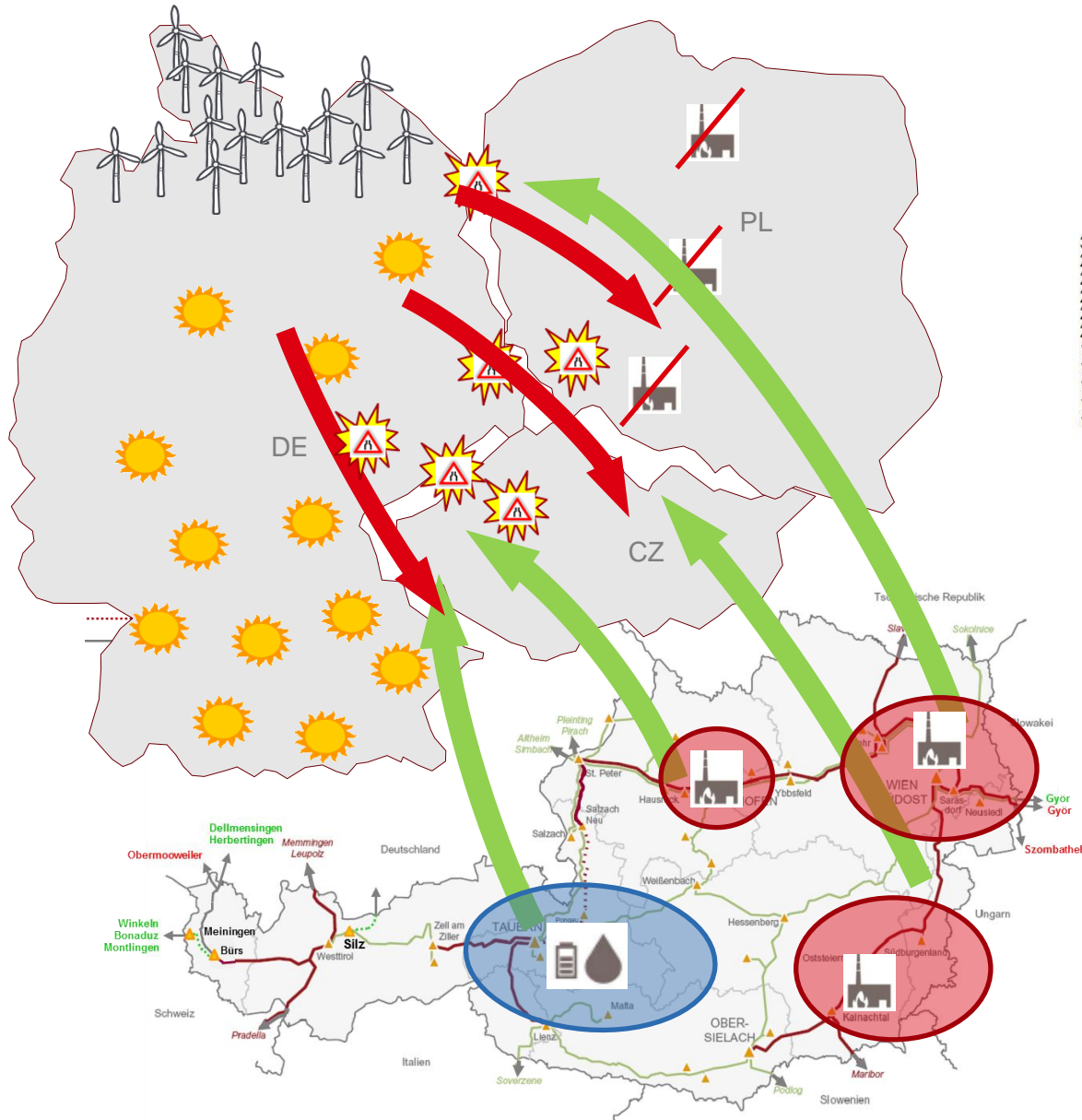
# Critical situation in Poland on 14/8/2015



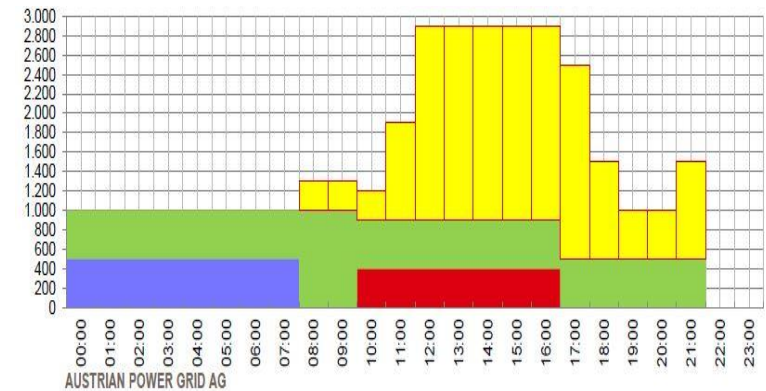
- High temperature leads to disconnection of power stations in Poland (lack of cooling water)
  - and to lower capacities on transmission lines
- ➔ **massive load shedding in Poland (up to 2 GW)**



# Critical situation in Poland on 14/8/2015



*Re-dispatch - profile:*



**Austria contributed with re-dispatch capacity up to 2900 MW (35,7 GWh energy finally delivered)**

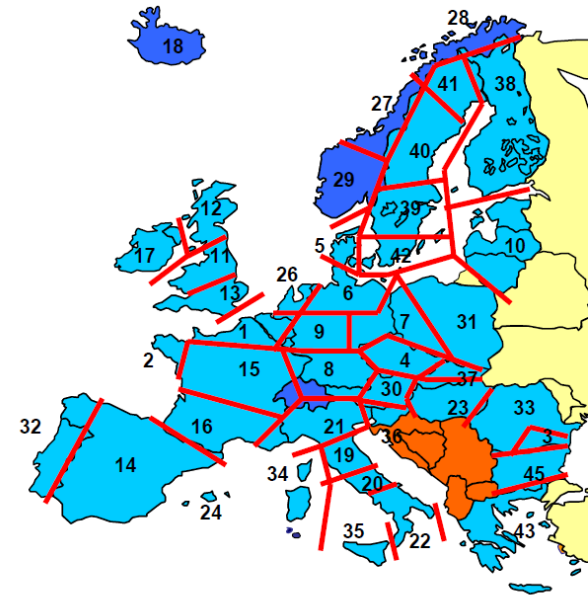


# CACM Guideline since 14 August 2015

- New Governance (Majority Voting)
- Consultations
- Nominated Market Coupling Operator
- Bidding Zone Review
- Capacity Calculation Method and Calculation Process
- Capacity Calculation Regions
- Coordinated Re-dispatching and Countertrading
- Price-Coupling Algorithm
- Intraday
- Data, Reporting, Monitoring
- Congestion Income Distribution
- Cost Sharing Re-dispatching
- Cost sharing TSOs and NEMOs

# Do we have the right bidding zone structure?

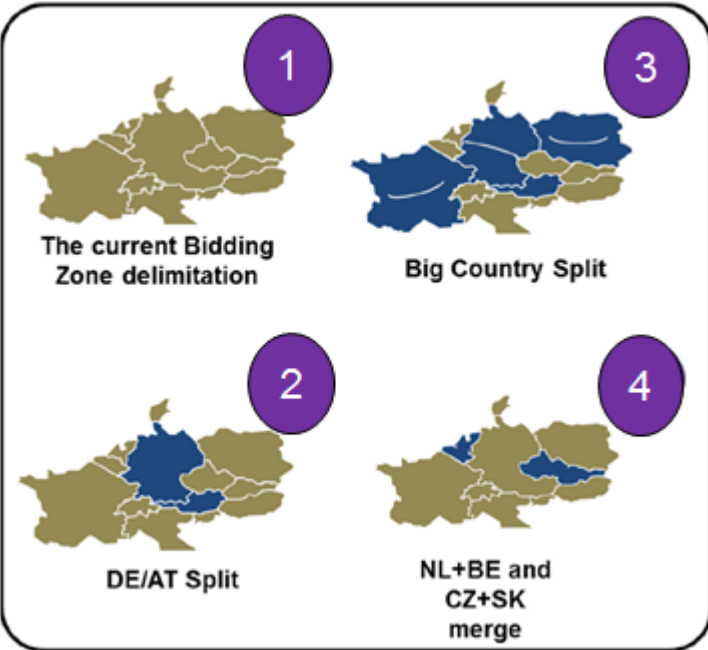
- Decision in Europe to go for zonal pricing instead of nodal pricing
- Areas with almost no congestion should be one bidding zone
- Currently (with exemption of AT and GE) all countries are one bidding zone – does obviously not cope with the request “no congestion within bidding zones”
- Conflict of interest to have at least on national level an uniform energy price versus idea of congestion management: different price levels give correct signals for investment.
- Concerns about the big DE/AT/LUX zone feeds since years discussions.
- Opinion of ACER to split this zone at least on the border between Germany and Austria
- But Bidding zone study ongoing



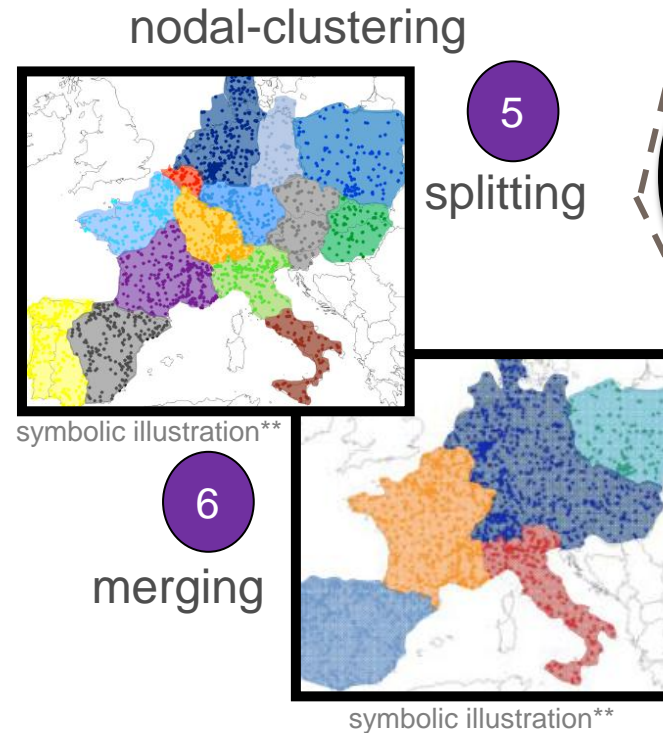
Proposal for prize zones: Supponen, 2011: „Influence of National and Company Interests on European Electricity Transmission Investments“.

# Bidding Zone Study - Scenarios

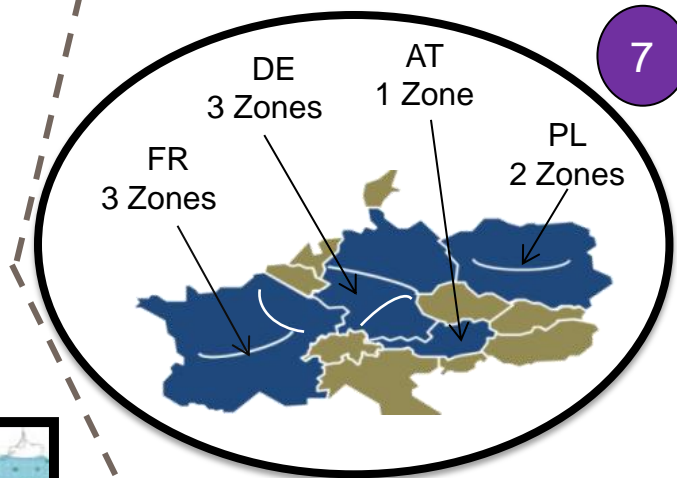
## 4 expert scenarios



## 2 model-based scenarios



## ACER scenario



\*desired ACER scenario in case of CACM formalization of BZ-Study

1 - 7

Each for:

- **2 grids** (minimal & planned expansion)
- **2 horizons** (2020 & 2025)
- **3 Visions** (TYNDP2016 Vision1 & 4, SOAF scenario B)

**84 scenarios**

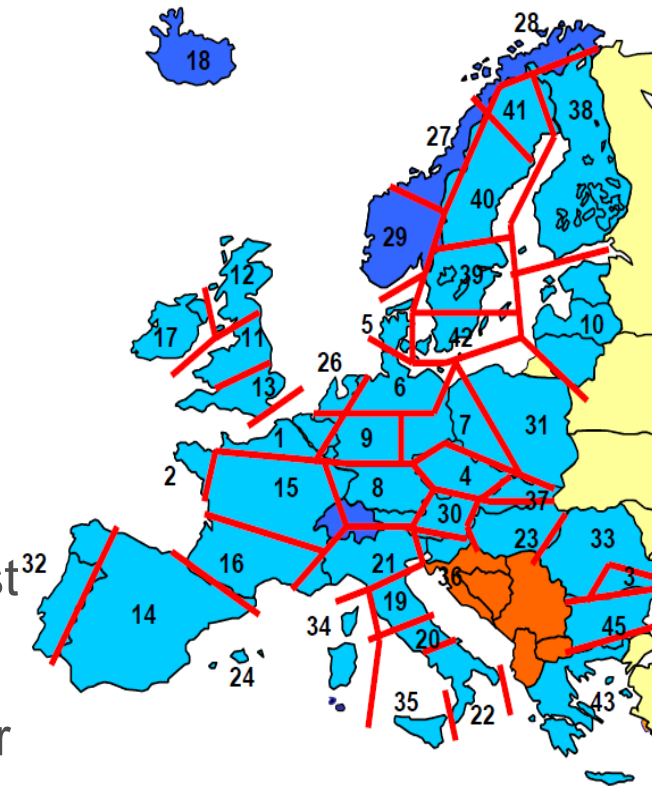
\*drawing of demarcations are indicatively

\*\* taken from Breuer, C. & Moser, A.; IEWT 2015



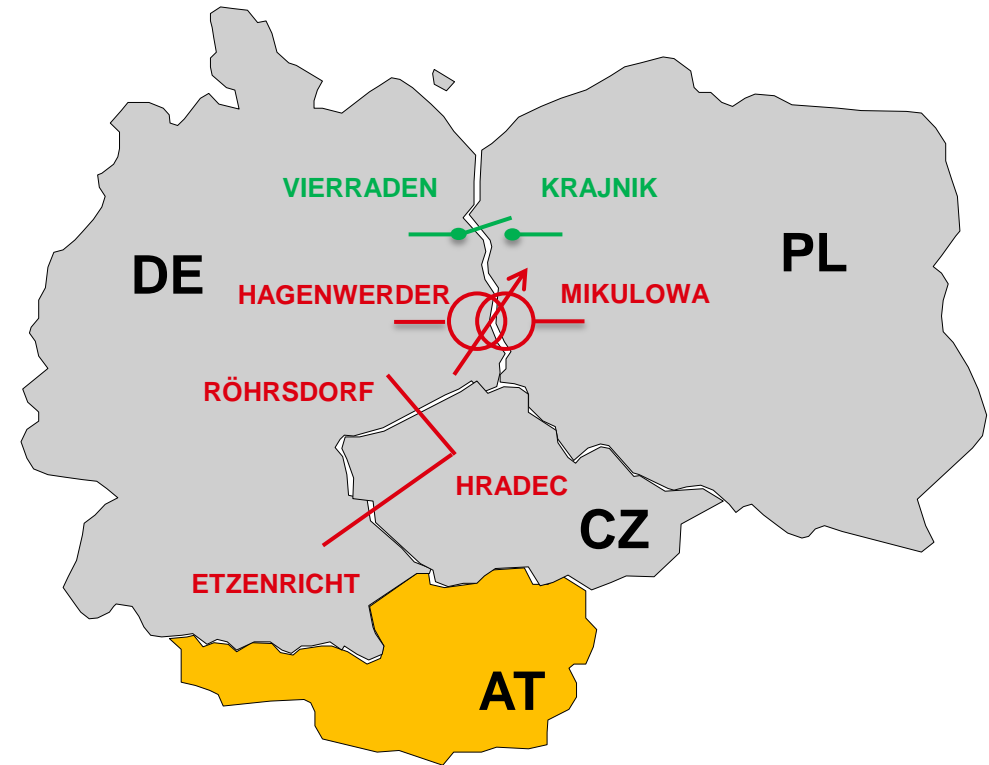
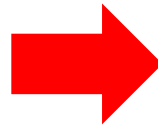
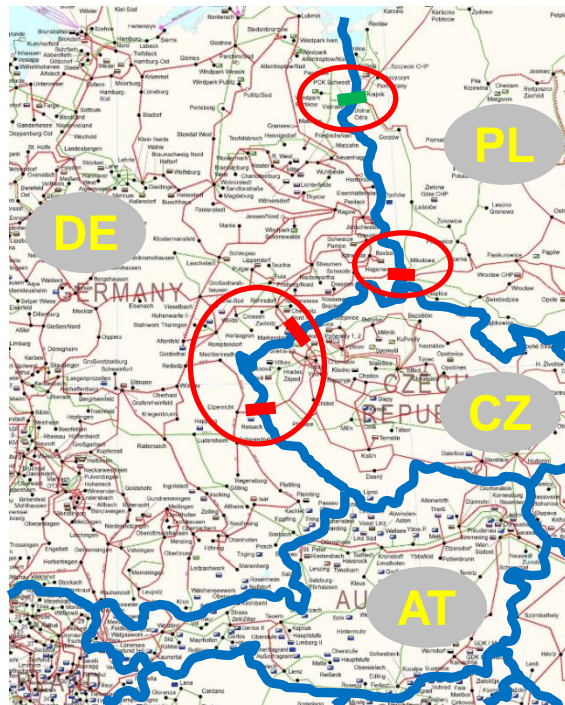
# Do we really need smaller bidding zones

- Smaller bidding zones may not result in higher investments into the grid (congestion rent sometimes take as income for the respective country).
- Volatile and changing flow-pattern with RES will also lead to different bottlenecks in the grid
- Does it make sense to segment the market for just a few spikes?
- Should we not rather put incentives for storage for RES and give them full balancing responsibility?
- Temporary bottlenecks rather to be solved with re-dispatching and technical measures (e.g. PST)



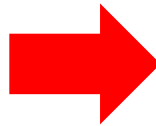
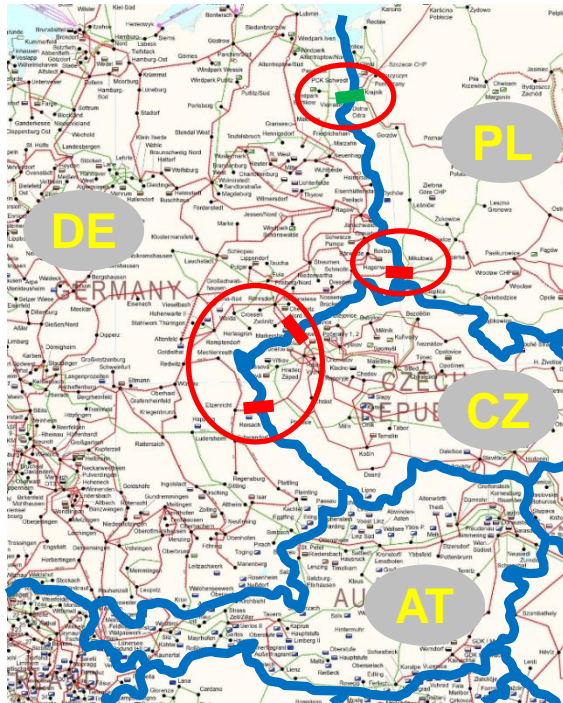
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# Planned measures in the CEE Region beginning June 2016



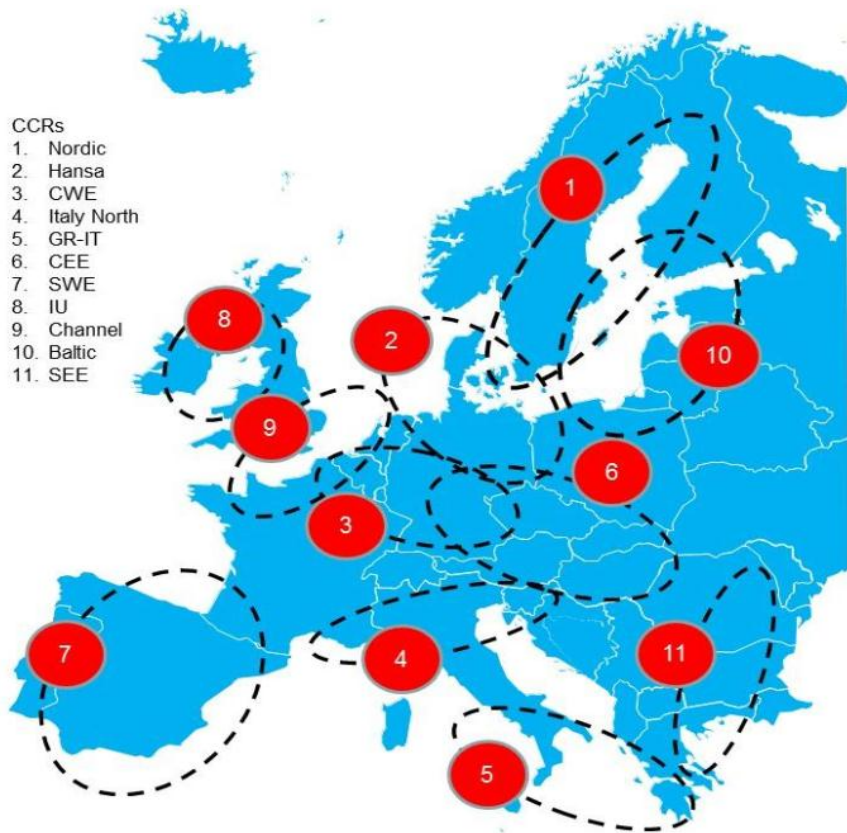
- Start operation of PST Mikulowa (PL)
  - Opening of 220-kV-line Vierraden (DE) – Krajnik (PL)
  - Special switching of lines Röhrsdorf (DE) – Hradec (CZ) – Etzenricht (DE) – so that they become a sort of corridor line for Germany
- Reduces loop flows in the Polish and Czech transmission grid**

# Further measures by end 2016



- Start operation of PST Hradec – Röhrsdorf

# ,All TSOs' proposal for Capacity Calculation Regions (CCR)



- Basis for coordination of load-flow based capacity calculation
- New border AT-GE introduced (decision against AT and DE TSOs)
- Austrian Regulator did not approve it – asked for amendment
- Now ACER has to decide within 6 month (or could ask for an amendment)
- Blocks progress in CACM implementation
- CEE and CWE TSOs have signed MoU for development of joint FB CC tool

# Designated NEMOS – leads to Multiple-Nemo-Arrangements

Country	NEMO	Monopoly
AT	EPEX SPOT EXAA Nord Pool Spot	No
BE	Belpex Nord Pool Spot	No
BG	IBEX	Yes
CR	CROPEX	No
CZ	OTE	Yes
DK	Nord Pool Spot	No
EST	Nord Pool Spot	No
FIN	Nord Pool Spot	No
FR	EPEX SPOT Nord Pool Spot	No
DE	EPEX SPOT Nord Pool Spot	No
GR	LAGIE	Yes
H	HUPEX	Yes

Country	NEMO	Monopoly
IRL	EirGrid	No
IT	GME	Yes
LAT	Nord Pool Spot	No
LIT	Nord Pool Spot	No
LUX	EPEX SPOT	No
NL	APX Nord Pool Spot	No
PL	TGE	No
P	OMIE	Yes
RO	Opcom	Yes
SK	OKTE	Yes
SLO	BSP	
ESP	OMIE	Yes
SW	Nord Pool Spot	No
UK	APX Nord Pool Spot SONI	No



# CEE and CWE flow-based

- CWE flow-based already in operation
- CEE flow-based
  - still in discussion modus (main problem loop flows which have to be taken into account and reduce available capacities for some CEE countries)
  - Also blocked by pending CCR proposal
  - CEE-NWE FB project should make investment decisions for own IT and flow-based CC – but could also work together with CWE in order to improve and adapt CWE FB CC method

# MRC Extension to 4M MC and SEE

- Priority of ENTSO-E to create one single market coupling in Europe at least on NTC basis – MRC TF for extension create
- CEE Region
  - Potentially three parallel projects:
    - MRC 4M MC extension on NTC basis
    - CEE-NWE FB project
    - Joint project CEE-CWE FB
  - Open Poland and Croatia (also part of CEE)
  - Potential need to reduce NTCs and increase of re-dispatching – questions the overall welfare of a NTC based MC in CEE
  - Does not fulfil legal requirements
- SEE Region
  - NEMOs are now there – next step decision to go on

# Summary

- **High progress in market coupling in Europe – MRC and 4M MC cover all countries – only SEE is lacking behind**
- **Dramatic change in European Electricity System leads serious security problems in the European Transmission Grid**
- **Bidding Zone Study ongoing – but we need to consider that volatile production leads to volatile congestion – social welfare calculation needs to look also on transition costs!**
- **Grid investment the no-regret solution – otherwise we will face a further fragmentation of the European Electricity markets**
- **Multiple NEMO arrangements: higher costs, complicated governance – will it really increase competition?**
- **Yes to MRC extension – one step to flow-based should be the preferred option**

# **Thank You!**

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