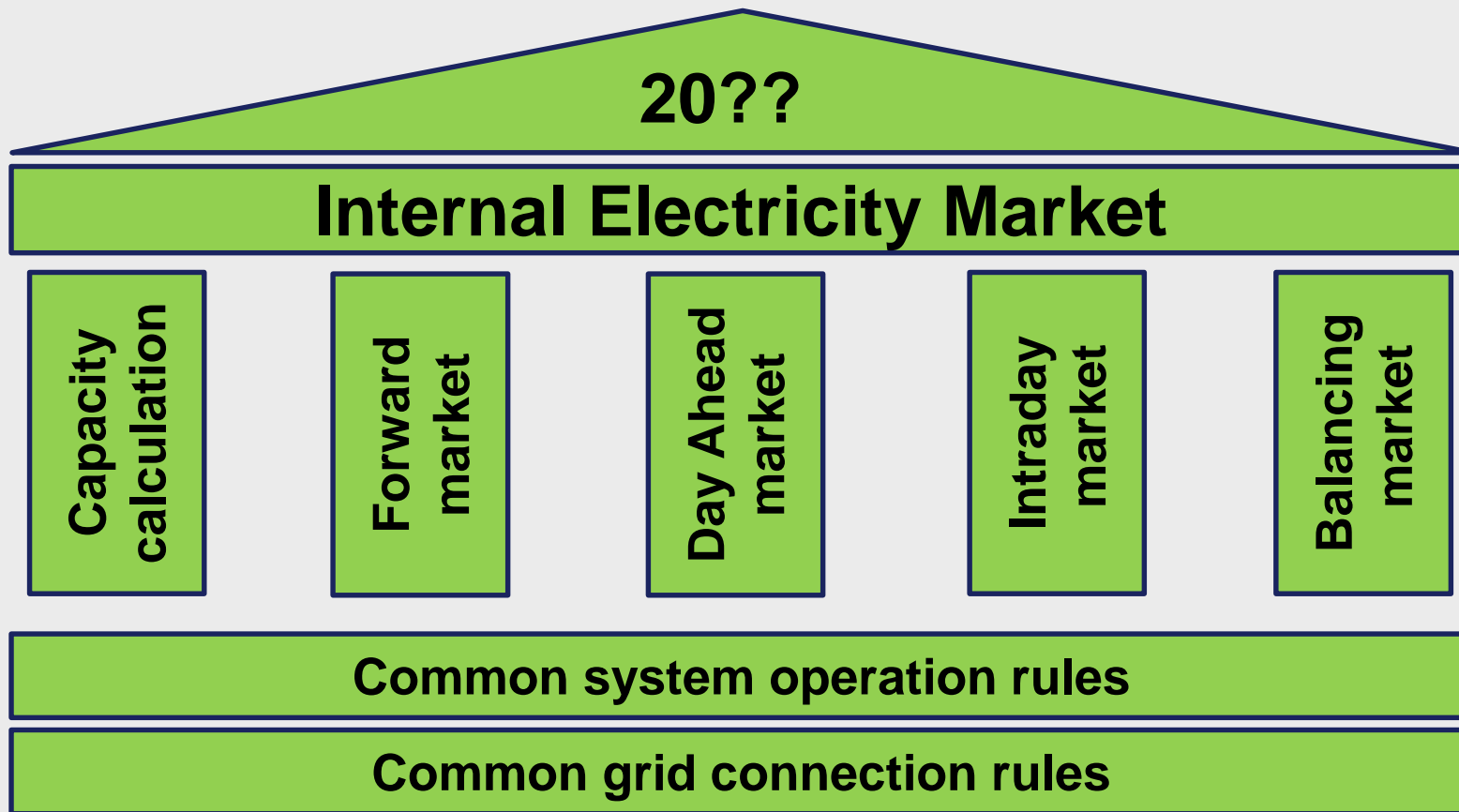




## Regulatory perspective on the CACM requirements and implementation

Martin Povh  
Team Leader – Network Codes  
Electricity Department / ACER



# *Market design – target model development*

***2003: Second legislative package***

***2006: Congestion Management Guidelines, Electricity Regional initiatives***

***2008: Project Coordination Group: development of the target model***

***2009: Third legislative package***

***2010-2012: Development of framework guidelines***

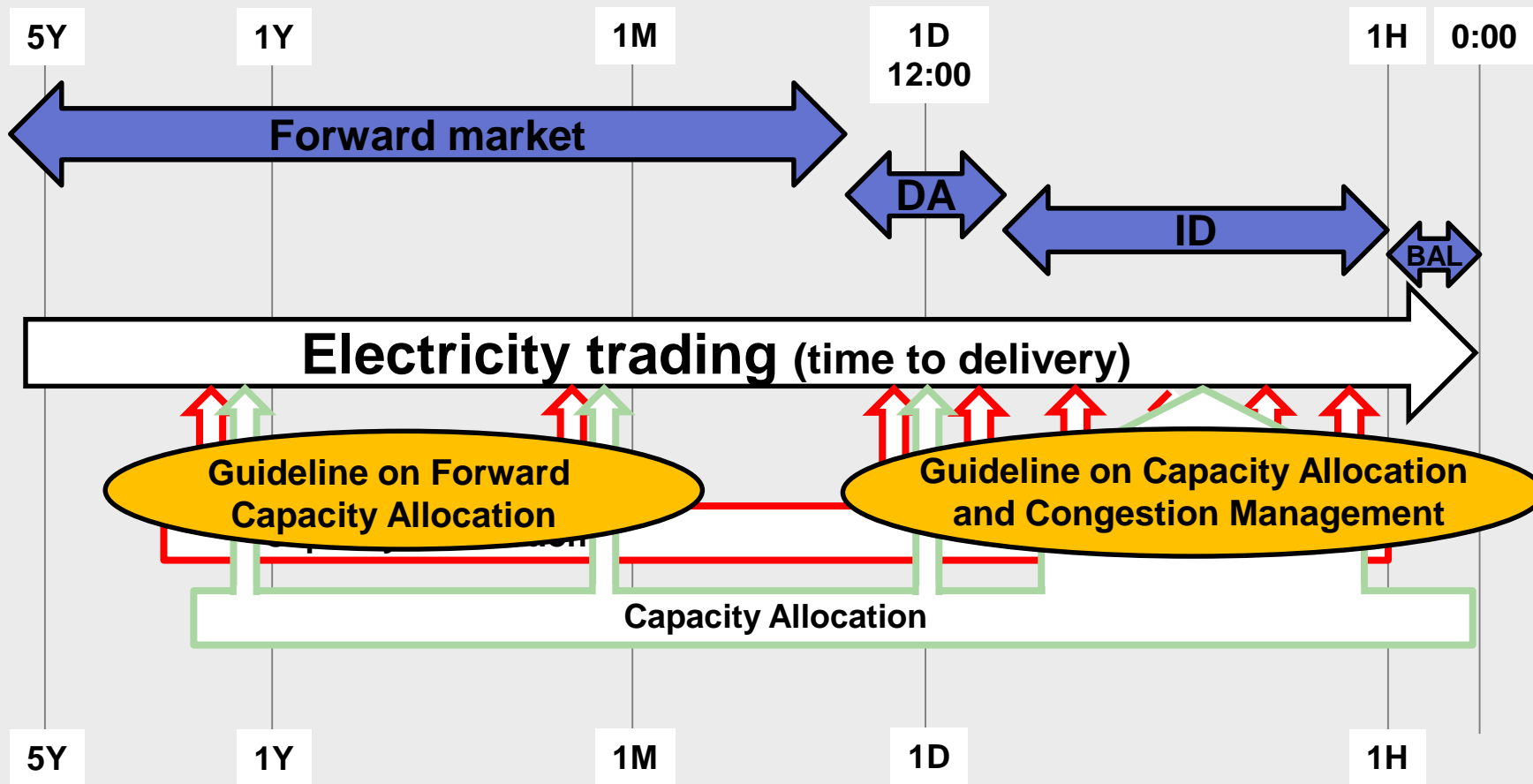
***2012-2015: Development of the network codes***

***2014- 2017: Adoption of the network codes***

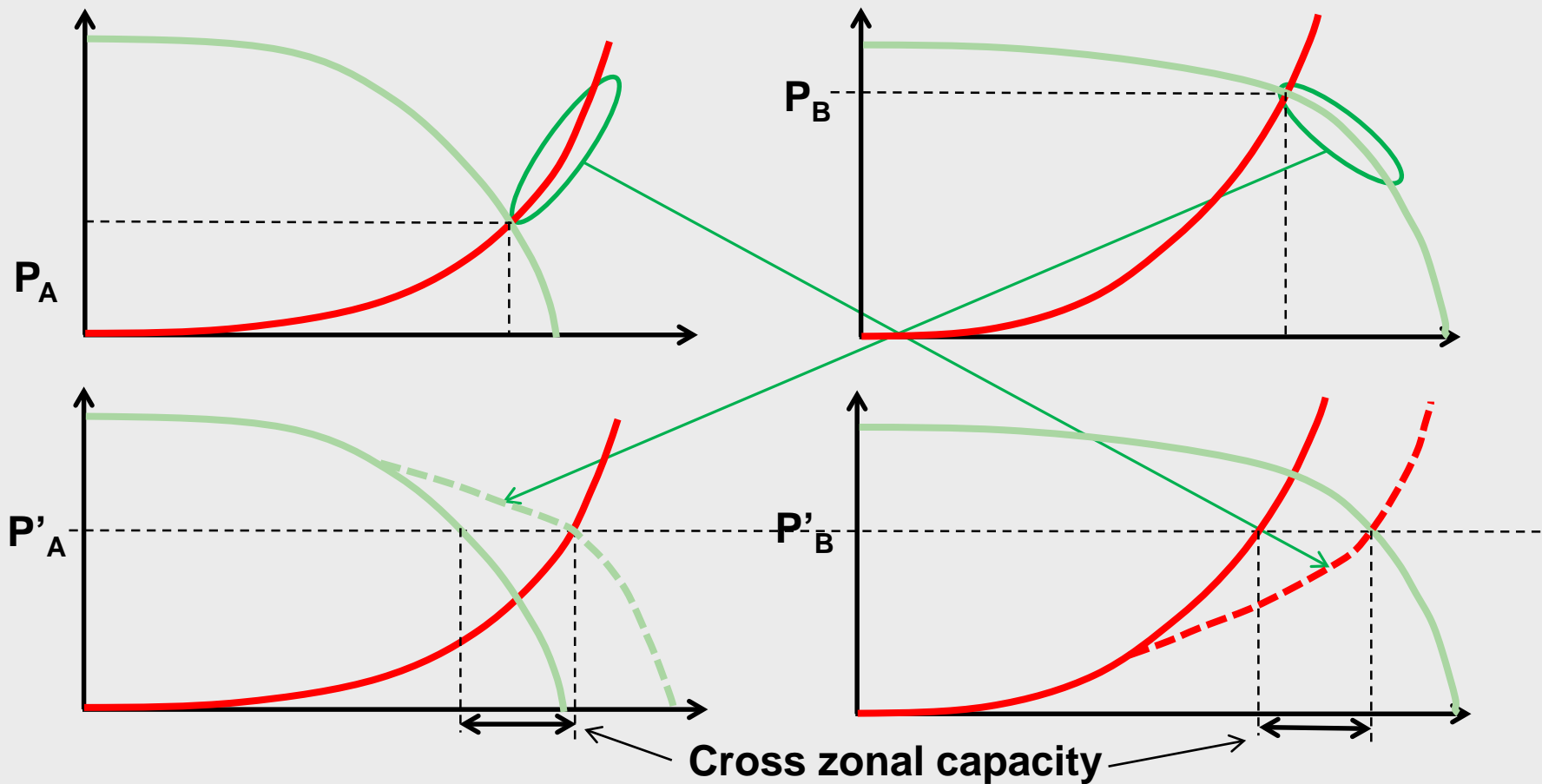
***2015- ongoing: Implementation of network codes***

***2017- ongoing: revision of third legislative package***

# Electricity market design

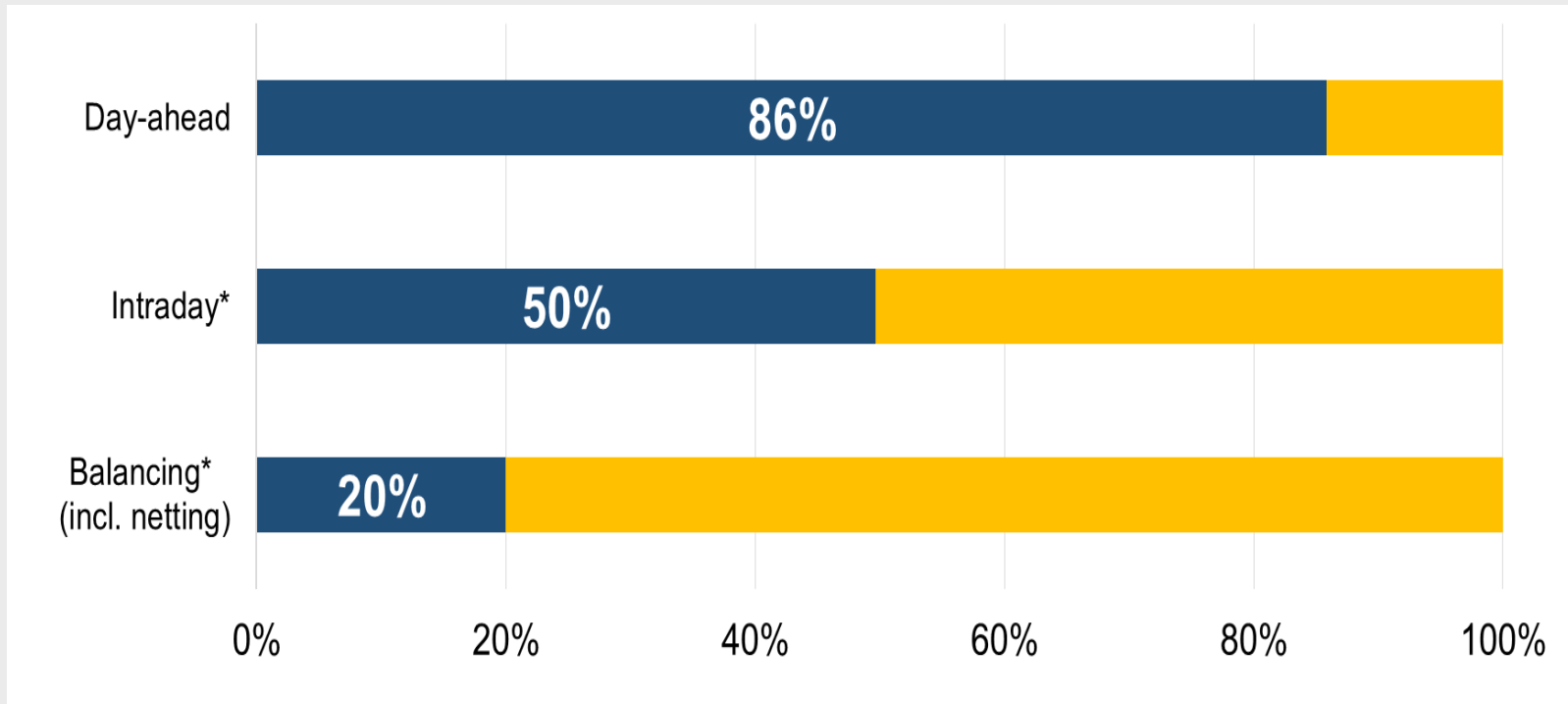


# The essence of integration



# Internal Electricity Market - Integration

**Level of efficiency (% use of commercial capacity available in the 'economic' direction) in the use of interconnectors in Europe – 2016**

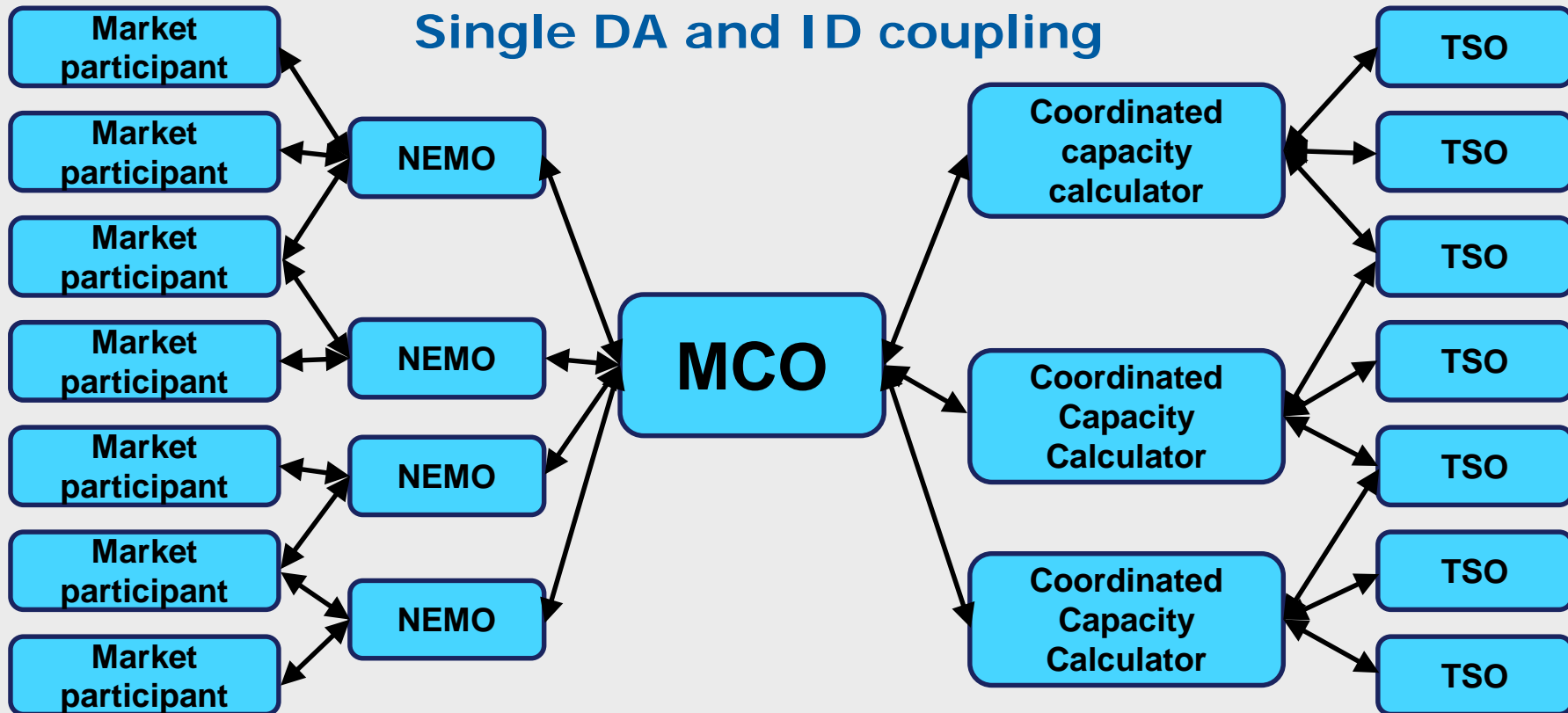


- ***Entry into force in August 2015***
- ***Obligations on TSOs:***
  - ***Implement regional coordinated capacity calculation by mid 2017***
  - ***Flow-based capacity calculation in Continental Europe***
  - ***Review of bidding zones***
- ***Obligations on MSs/NRAs:***
  - ***To assign at least one NEMO per each bidding zone***
  - ***Monitor the operation of NEMOs***
- ***Obligations on NEMOs:***
  - ***Implement Day-Ahead Market Coupling***
  - ***Implement Intraday Market Coupling***

# Internal Electricity Market

bids/offers → bids/offers → algorithm ← capacities ← network data

## Single DA and ID coupling





- **List publish at ACER web-page:**

- **[http://www.acer.europa.eu/Electricity/FG\\_and\\_network\\_codes/CACM/Pages/NEMO-Designations.aspx](http://www.acer.europa.eu/Electricity/FG_and_network_codes/CACM/Pages/NEMO-Designations.aspx)**

- **Designating authority:**

- **NRA in 21 MSs**

- **Government bodies in 5 MSs**

- **Designation process:**

- **Competitive in 17 MSs**

- **Monopoly in 9 MSs**

# CACM Methodologies (1)



EU-wide Terms and Conditions or Methodologies (TCMs)	Last proposal submission date	All NRAs' approval of proposed TCM due date	ACER decision due date	Status
NEMO designation	N.A.	14.12.2015 (designation by individual NRA/MS)	N.A	List of designated NEMOs published on ACER web-page
Determination of Capacity Calculation Regions	17.11.2015	17.5.2016	17.11.2016	<b>No NRA agreement. ACER publishes its decision on 17.11.2016 (BoA decision of 17.3.2017, under appeal before the General Court; see below)</b>
Amendment of Capacity Calculation Regions	14.08.2017	14.02.2018	/	<b>NRAs approved</b> (individual decisions pending)
MCO plan - initial proposal	15.4.2016	15.10.2016	/	<b>NRAs requested amendment</b> Last NRA decision on 25.10.2016
MCO plan - amended proposal	22.12.2016	22.2.2017	/	<b>NRAs requested 2<sup>nd</sup> amendment</b> Last NRA decision on 17.2.2017
MCO plan - second amended proposal	26.04.2017	26.06.2017	/	<b>NRAs approved</b> Last NRA decision on 7.7.2017
Common Grid Model methodology – initial proposal	22.07.2016	22.01.2017	/	<b>NRAs requested amendment</b> Last NRA decision on 19.1.2017
Common Grid Model methodology – amended proposal	14.04.2017	14.06.2017	/	<b>NRAs approved</b> Last NRA decision on 6.7.2017
Generation and Load Data Provision methodology	04.08.2016	04.02.2017	/	<b>NRAs approved</b> Last NRA's decision on 6.7.2017

# CACM Methodologies (2)



EU-wide Terms and Conditions or Methodologies (TCMs)	Last proposal submission date	All NRAs' approval of proposed TCM due date	ACER decision due date	Status
Congestion Income Distribution methodology – initial	18.08.2016	18.02.2017	/	NRAs <b>requested amendment</b> Last NRA decision on 17.2.2017
Congestion Income Distribution methodology – amended	27.04.2017	27.06.2017	14.12.2017	NRAs <b>requested ACER decision</b> Decision published on 14.12.2017
Single DA firmness deadline	19.12.2016	19.06.2017	/	NRAs <b>approved</b> . Last NRA decision on 15.7.2017.
ID cross-zonal gate opening/closure times - initial	20.12.2016	20.06.2017	/	NRAs <b>requested amendment</b> Last NRA decision on 3.8.2017
ID cross-zonal gate opening/closure times – amended	6.9.2017	6.11.2017	24.4.2018	NRAs <b>requested ACER decision</b>
Products for single DA and ID coupling - initial	16.02.2017	16.08.2017	/	NRAs <b>requested amendment</b> Last NRA decision on 30.8.2017
Products for single DA and ID coupling - initial	17.11.2017	17.1.2018	/	NRAs <b>approved</b> (individual decisions pending)
Back-up - initial	17.02.2017	17.08.2017	/	NRAs <b>requested amendment</b> Last NRA decision on 30.8.2017
Back-up – amended	17.11.2017	17.1.2018	/	NRAs <b>approved</b> (individual decisions pending)
Single DA and ID coupling algorithm – initial	17.02.2017	17.08.2017	/	NRAs <b>requested amendment</b> Last NRA decision on 30.8.2017
Single DA and ID coupling algorithm - amended	17.11.2017	17.1.2018	30.7.2018	NRAs <b>requested ACER decision</b>
Maximum and minimum clearing prices for DA and ID coupling	17.02.2017	17.08.2017	02.02.2018	NRAs <b>requested ACER decision</b> . Decision published on 20.11.2017

# CACM Methodologies (2)



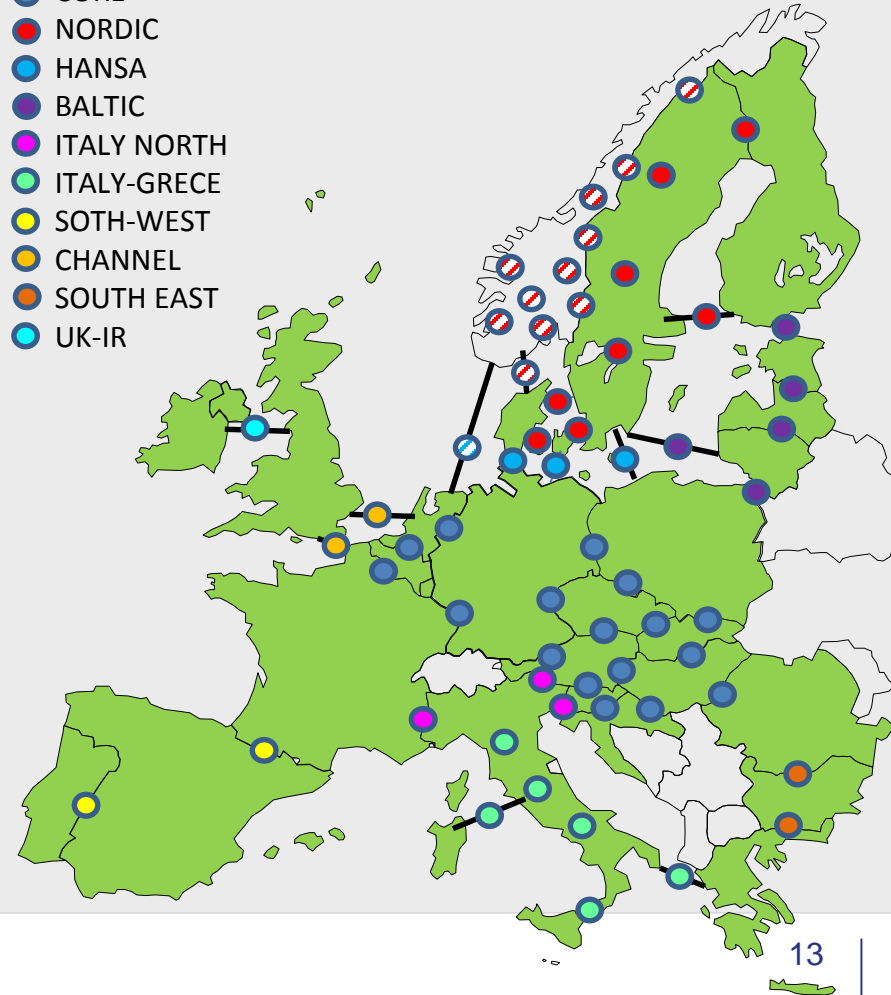
Regional-wide Terms and Conditions or Methodologies (TCMs)	Last proposal submission date	Regional NRAs' approval of proposed TCM due date	ACER decision due date	Status
Scheduled exchanges (DA and ID) <i>All TSOs using scheduled exchanges</i>	/	/	/	All NRAs <b>requested</b> all TSOs to resubmit the methodology by end of 2017.
Complementary regional ID auctions – initial <i>TSOs intending to apply regional ID auctions</i>	14.2.2017 (ES,PT) 22.3.2017 (ITALY NORTH, GRIT)	14.8.2017 22.9.2017	/	NRAs in both regions <b>requested amendment</b> . Last NRA decided 24.11.2017 and 11.8.2017 resp.
Complementary regional ID auctions – amended <i>TSOs intending to apply regional ID auctions</i>	24.11.2017 (ES,PT) 16.10.2017 (Italian borders)	24.1.2018 16.12.2017	/	NRAs from ITALY NORTH, GRIT <b>requested 6 months extension</b> from ACER. ACER decisions on 21.12.2017 and 10.01.2018
Fall-back procedures (DA coupling) <i>All TSOs from each CCR</i>	Approx. 05.2017*	/	/	HANNEL, HANSA, GRIT and IU <b>approved</b> CORE, NORDIC, BALTIC, ITALY NORTH, SWE and SEE <b>requested amendment</b>
Capacity calculation methodology <i>All TSOs from each CCR</i>	17.9.2017**	+17.3.2018		SEE delayed, ITALY NORTH did not submit anything yet
CCR: Redispatching and countertrading + cost sharing <i>All TSOs from each CCR</i>	17.3.2018**	17.9.2018		

# Progress & targets: Capacity Calculation

## 10 capacity calculation regions:

- Each region developed a common capacity calculation methodology
- **2018-2020:** Implementation of regionally harmonised capacity calculation
- **2020:** EU-wide harmonisation

- CORE
- NORDIC
- HANSA
- BALTIC
- ITALY NORTH
- ITALY-GRECE
- SOTH-WEST
- CHANNEL
- SOUTH EAST
- UK-IR



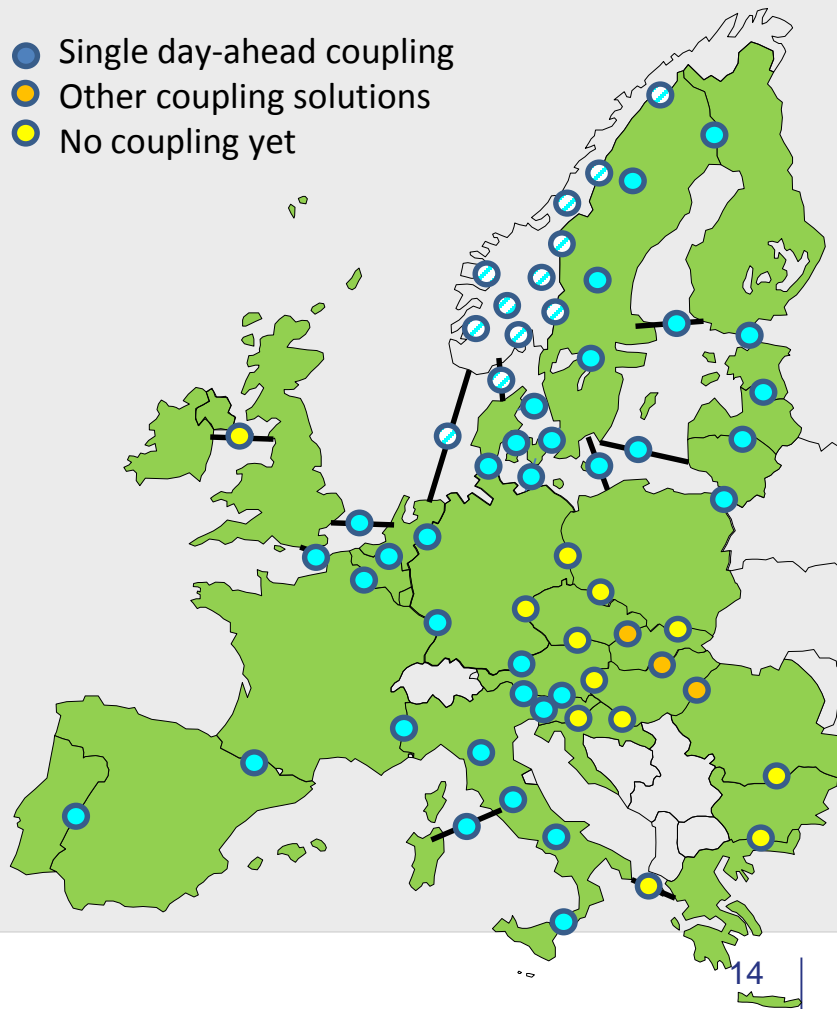
# Progress & targets: Day-Ahead Market Coupling

## Today:

- **80% of borders coupled**
  - **46 borders** coupled in a single coupling
  - **3 borders** coupled separately
  - **12 borders** still waiting for coupling

## Final goal:

- **EU-wide day-ahead market coupling with implicit auctions**



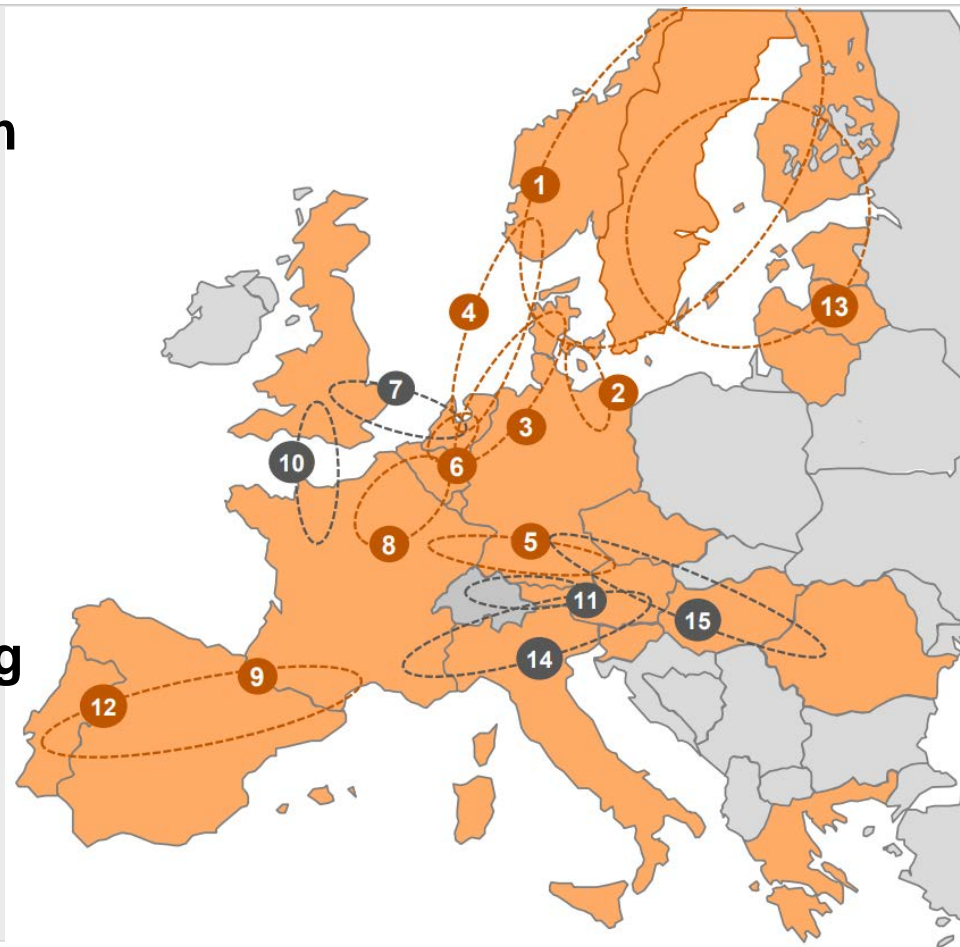
# Progress & targets: Intraday Market Coupling

## Today

- **Development of EU-wide platform**
  - XBID
  - Jun 2018: Go-live
- **15 local implementation projects (LIPs)**

## Final goal:

- **EU-wide intraday market coupling with continuous trading**



## *Single day-ahead coupling – direct challenges*

- ***NEMO competition vs. monopolies***
- ***Market Coupling Operation function – who should do it best?***
- ***Cost sharing and cost contribution from TSOs to NEMOs***
- ***Performance of the algorithm***
- ***Harmonisation of products***
- ***National vs. cross-border markets***
- ***Clearing and shipping arrangements***



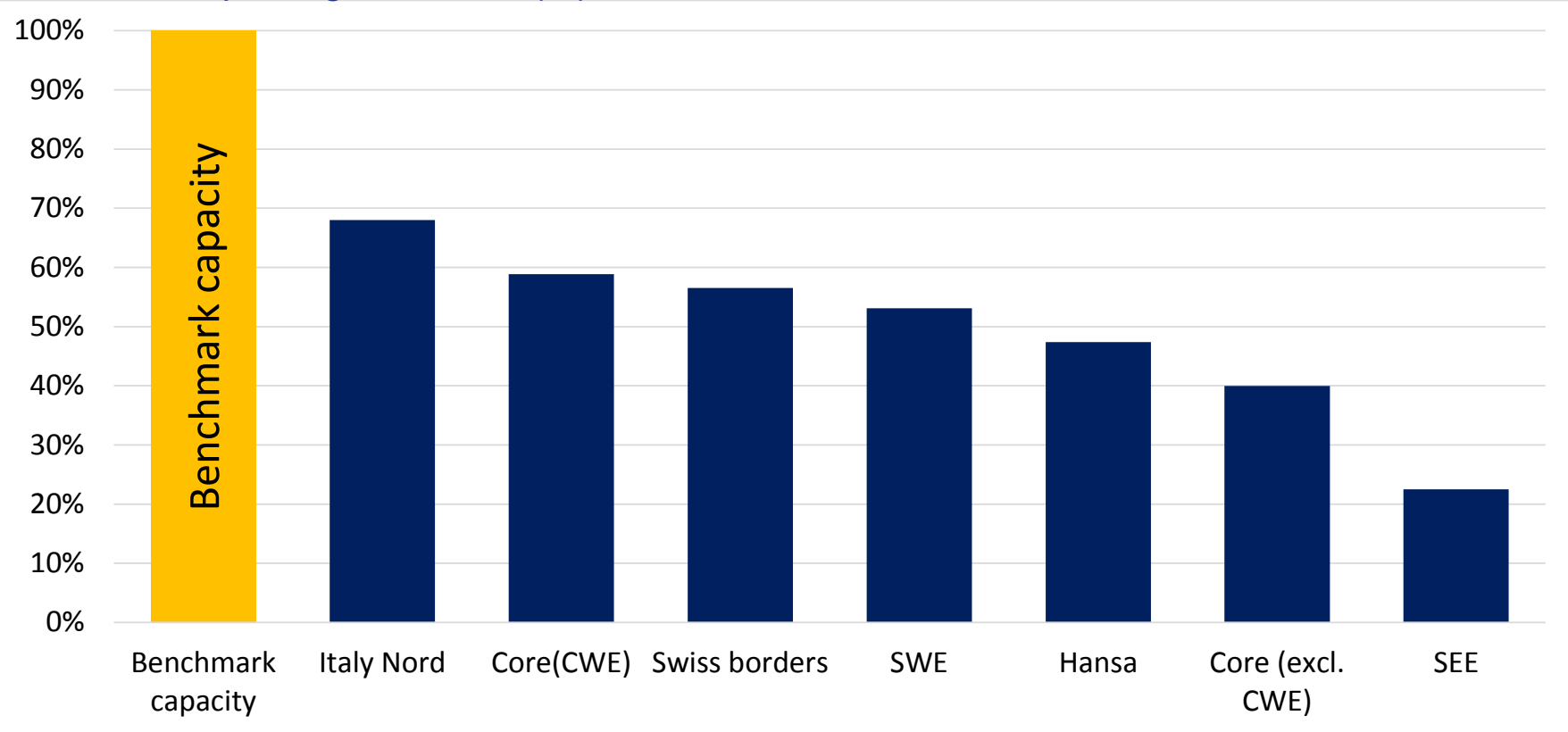
# *Single day-ahead coupling – indirect challenges*



- *Volume of cross-border capacities*
- *Discrimination between internal and cross-zonal trade*
- *Efficient bidding zones*
- *Pricing of intraday cross-zonal capacities*
- *Coordinated redispatching and cost sharing*
- *Capacity markets*
- *RES support schemes*
- *Network investments*

# Cross-zonal exchanges get the 'leftovers'

Ratio between available cross-border capacity and the benchmark capacity\* of HVAC interconnectors per region – 2016 (%)



# Cross-zonal exchanges get the 'leftovers'

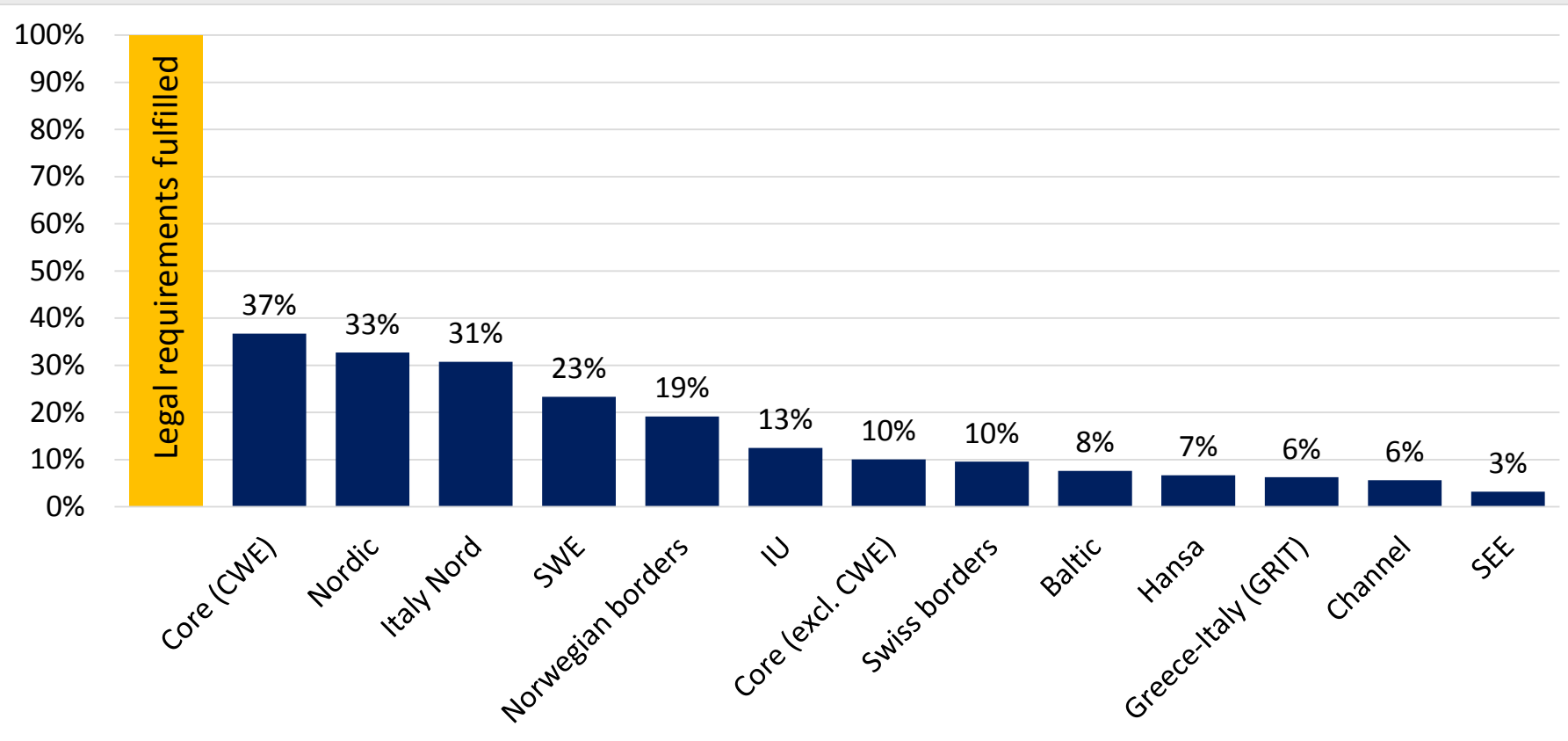
Borders with the lowest ratio between offered NTC and benchmark capacity – 2016 (% , MW)

Border-Direction	NTC 2016 (MW)	TC [MW]	Benchmark capacity (MW)	ratio NTC/benchmark
PL->DE/LU	1	3,095	2,424	0%
DE/LU->PL	9	3,095	2,424	0%
CZ->PL	22	3,527	1,881	1%
SK->PL	21	2,075	1,386	2%
DE/LU->CZ	278	5,564	2,745	10%
RO->BG	250	4,156	2,443	10%
BG->RO	281	4,156	2,443	12%
DK1->DE/LU	194	3,748	1,582	12%
PL->SE-4	99	600	600	16%
PL->SK	231	2,075	1,386	17%
PL->CZ	406	3,527	1,881	22%
AT->CZ	527	3,576	1,908	28%
AT->CH	802	4,120	2,794	29%
DE->CH	1,467	11,991	5,059	29%
CZ->AT	561	3,576	1,908	29%
PL->LT	149	500	500	30%

Border-Direction	NTC 2016 (MW)	TC [MW]	Benchmark capacity (MW)	ratio NTC/benchmark
AT->HU	472	3,115	1,474	32%
NORD->AT	100	421	306	33%
AT->SI	642	2,505	1,743	37%
ES->PT	1,932	9,614	5,179	37%
HR->HU	1,000	5,159	2,503	40%
HU->AT	605	3,115	1,474	41%
CH->AT	1,152	4,120	2,794	41%
IT->CH	1,722	8,332	3,987	43%
NORD->FR	1,020	5,336	2,324	44%
CH->FR	1,125	10,545	2,461	46%
PT->ES	2,382	9,614	5,179	46%
HU->HR	1,164	5,159	2,503	46%
HU->SK	811	2,736	1,689	48%
SK->CZ	1,192	4,480	2,477	48%
SI->NORD	551	2,150	1,126	49%

# TSO coordination is lacking

Regional performance based on fulfilment of capacity calculations requirements – 2016



## *Single day-ahead coupling - benefits*

- *Liquid day-ahead markets:*
  - *Isolated small bidding zones cannot develop good liquidity*
  - *New market players, less business risk (wholesale, retail)*
  - *More competition - lower prices for end consumers*
- *Transparent day-ahead price formation*
  - *Day-ahead price as a reference for majority of supply/trading contracts*
- *More efficient allocation of cross-border capacities*
  - *Less profit for pure traders (cross-border arbitrage)*
  - *Higher congestion rent – more network investments (lower tariffs)*

# *Single day-ahead coupling – extension to WB6*



***My personal views are...***

■ ***Thank you for your attention***

**\*\*\*\*\*DISCLAIMER\*\*\*\*\***

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