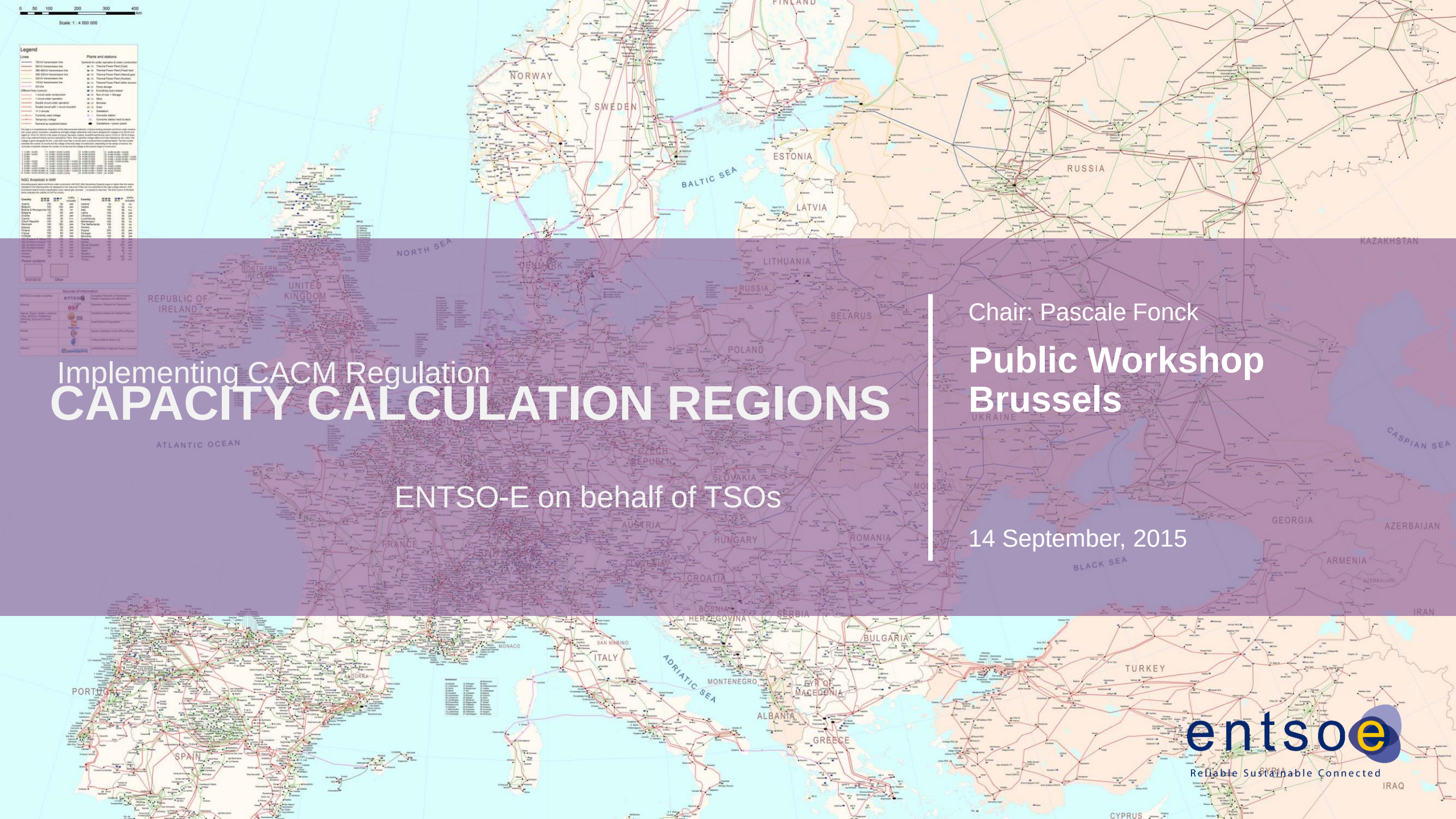


Implementing CACM Regulation

# CAPACITY CALCULATION REGIONS

ENTSO-E on behalf of TSOs

Chair: Pascale Fonck

## Public Workshop Brussels

14 September, 2015

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# About CACM implementation

# The basics

# The proposal

# The regions

# Next steps

Determining the Capacity Calculation Regions

# CACM IMPLEMENTATION

## The Background

Zoltan Gyulay

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# Background

**CACM entered into force the 14th August 2015**

**What is the goal of CACM?**
Coordination and harmonisation of capacity calculation and allocation in the DA and ID market

**How will it be achieved?**
By setting requirements for the TSOs to cooperate on the level of CCRs, on a pan-European level and across bidding zone borders.

# Objectives of CACM

Article 3 defines the objectives of the CACM Regulation as follows.

*This Regulation aims at:*

*(a) promoting effective competition in the generation, trading and supply of electricity;*
*(b) ensuring optimal use of the transmission infrastructure;*
*(c) ensuring operational security;*
*(d) optimising the calculation and allocation of cross-zonal capacity;*
*(e) ensuring fair and non-discriminatory treatment of TSOs, NEMOs, the Agency, regulatory authorities and market participants;*
*(f) ensuring and enhancing the transparency and reliability of information;*
*(g) contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union;*
*(h) respecting the need for a fair and orderly market and fair and orderly price formation;*
*(i) creating a level playing field for NEMOs;*
*(j) providing non-discriminatory access to cross-zonal capacity.*

# CACM Implementation: Organization of the work by type of task

**The TSO related cooperation can be divided into the following five categories of TASKs:**

- ENTSO-E
- All TSOs
- CCRs: All TSOs on regional level
- ENTSO-E in co-operation with ACER  and ACER in co-operation with ENTSO-E
- All TSO in co-operation with all NEMOs

# ENTSO-E/All TSOs implementation tasks for 2015 and 2016

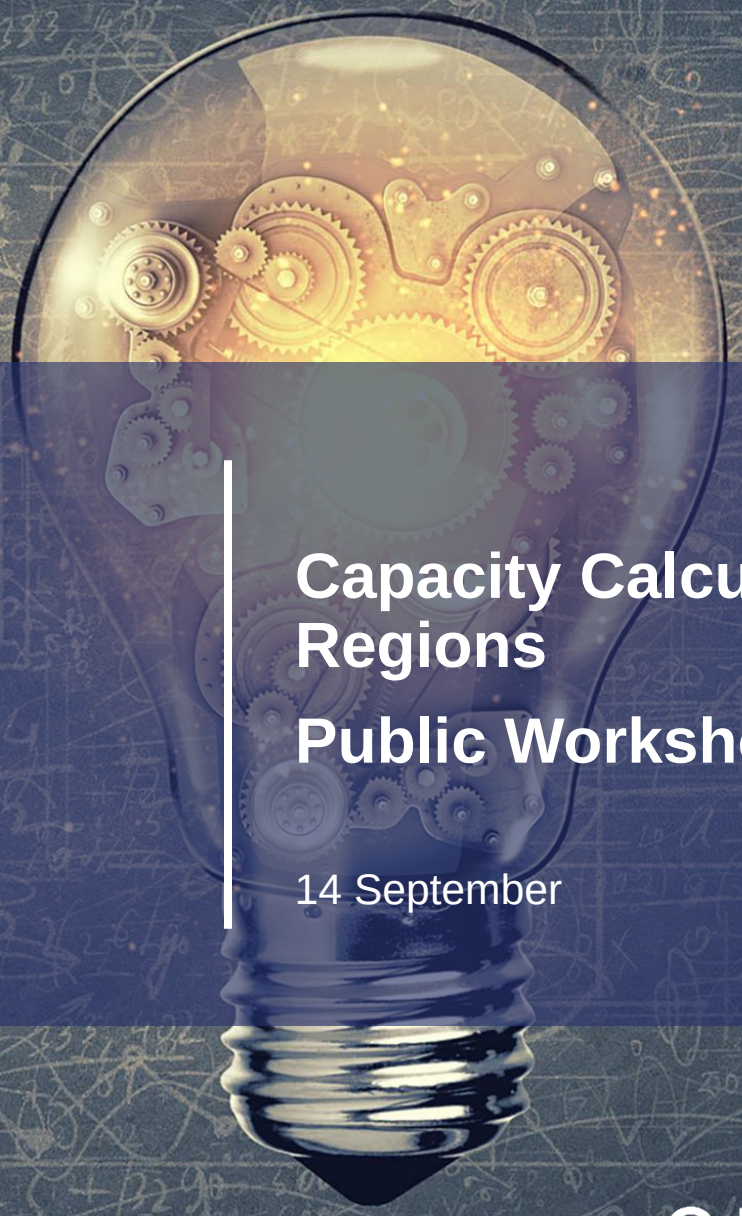
| EUROPEAN TASKs lead by ENTSO-E and TSOs | Relevant article | Responsible in CACM GL | Estimated date for consultation with Stakeholders | Legal deadlines for submission |
|---|---|---|---|---|
| **Determination of capacity calculation regions** | 15 | All TSOs | September 2015 | November 2015 |
| **Monitoring plan for Agency opinion** | 82(3) | ENTSO-E | Not required | February 2016 |
| **Requirements for the Price Coupling & Continuous Matching Algorithm for DA and ID** | 37(1) | All TSOs | Not required | April 2016 |
| **Generation and Load Data Provision Methodology** | 16(1) | All TSOs | February 2016 | June 2016 |
| **Common Grid Model Methodology** | 17(1) | All TSOs | February 2016 | June 2016 |
| **Congestion Income Distribution Methodology** | 73 | All TSOs | Not required | August 2016 |
| **Methodology for scheduled exchanges** | 43(1), 56(1) | TSOs which will calculate SE | July 2016 | December 2016 |
| **Day Ahead Firmness deadline** | 69 | All TSOs | July 2016 | December 2016 |
| **Intraday Cross Zonal Gate Opening and Closure time** | 59(1) | All TSOs | July 2016 | December 2016 |

# ENTSO-E/All TSOs implementation tasks for 2015 and 2016

| REGIONAL TASKs lead by ENTSO-E and TSOs | Relevant article | Responsible in CACM GL | Estimated date for consultation with Stakeholders | Legal deadlines for submission |
|---|---|---|---|---|
| **Fall back** | 44 | Each TSO in cooperation with all TSOs of the CCR | July 2016 | December 2016 |
| **Common coordinated capacity calculation methodology for CCR** | 20 (2) | TSOs of the CCR | December 16 | March 2017 (depends on CCRs approval- estimated in May 2016) |
| **Common framework for coordination and compatibility of flow-based methodologies across regions** | 20 (2) | Some CCR (CWE, CEE, IT north borders, BG-RO-HR-GR) | December 16 | March 2017 (depends on CCRs approval- estimated in May 2016) |

| Other TASKs for ENTSO-E and TSOs not lead by ENTSO-E or TSOs | Relevant article | Responsible in CACM GL | Estimated date for consultation with Stakeholders | Legal deadlines for submission |
|---|---|---|---|---|
| **Common set of requirements for price coupling & continuous matching algorithm** | 37(3) | All NEMOs supported by all TSOs | May 2016 | September 2016 |
| **List of information to be communicated by ENTSO-E to the Agency** | 82(4) | ACER in cooperation with ENTSO-E | Not required | February 2016 |

# QUESTIONS?



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Determination of the

# CAPACITY CALCULATION REGIONS

Implementing CACM GL: The approach

Ritva Hirvonen

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# Capacity Calculation Regions (CCRs)

## The first task of “All TSOs”: Determination of the CCRs

## The Challenge: All TSOs have 3 months to:

Develop a common proposal
Consult on this proposal (1 month)
Prepare the final proposal for submission to all NRAs

**Why Are** We Consulting?

- The TSOs responsible for submitting the common proposal regarding the determination of the capacity calculation regions have to consult stakeholders as defined in Article 12 of the CACM.
- To fulfil this CACM requirement, and even more importantly, to get the input from stakeholders and market participants on this important feature of the future European electricity markets, ENTSO-E and the TSOs hold this open on-line consultation.



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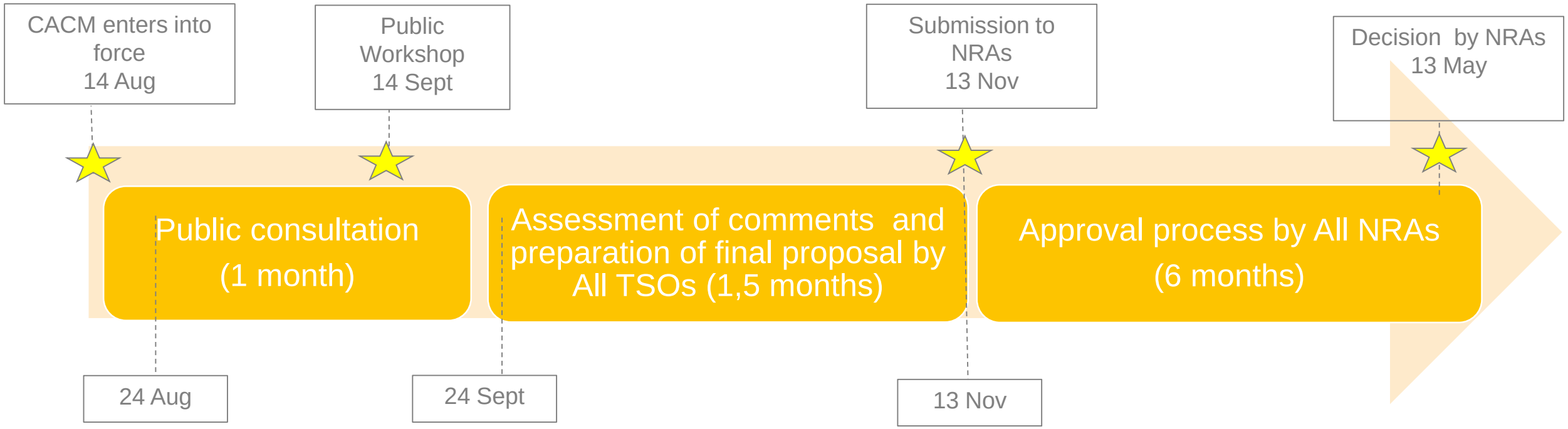
# The process of the CCRs' proposal development



# The Basics

# The basics (I)

**What is a Capacity Calculation Region (CCR)?**
The CCR  defines the geographical area in which coordinated capacity calculation is applied.

**What is coordinated capacity calculation?**
Coordinated capacity calculation means that when the capacity is calculated in the “coordinated” borders the interdependencies between them are considered to ensure that capacity calculation is reliable and that optimal capacity is made available to the market at regional level.

**How are the CCRs defined?**
- The CCRs are defined by bidding zone borders.
- Each bidding zone border can be only assigned to one CCR.

**What else implies the definition of the CCRs?**
The composition of the CCRs will also be the basis for the regional work defined in the CACM Regulation, such as the capacity calculation methodologies, countertrading and redispatching methodologies and cost sharing. (see slide 14)

# The basics (II)

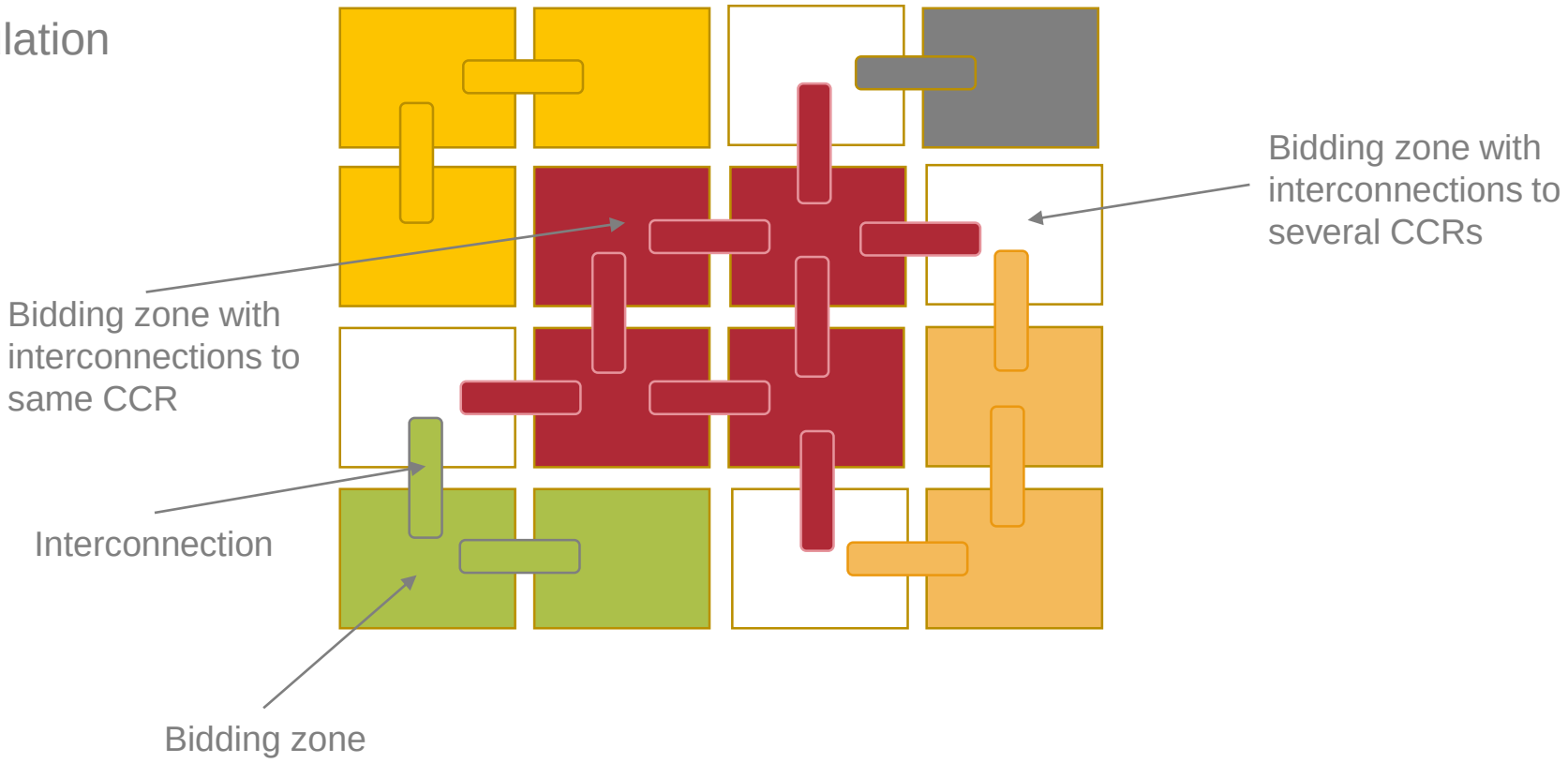
**What is the link between capacity calculation regions and bidding zones?**

A capacity calculation region is a geographical area in which the relevant TSOs apply a coordinated capacity calculation. A capacity calculation region consists of several bidding zone borders. This means that a bidding zone border can belong only one CCR but bidding zones may be part of several CCRs.

Bidding zones are network areas within which market participants can buy and sell energy without having to acquire transmission capacity to conclude their trades. TSOs manage the transmission network to ensure that there is no congestion within each bidding zone, so that market participants can trade with each other without constraints. A bidding zone border does not necessarily need to coincide with a national border. It is possible to have several bidding zones within a country or one bidding zone with several countries inside.

# The basics (III): Definition of Capacity Calculation Region

Each Bidding Zone border shall be attributed to one Capacity Calculation Region according to CACM regulation

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# Legal requirements for the CCR determination (I)

***The proposal for terms and conditions or methodologies shall include:***

- ***a proposed timescale for their implementation and***
- ***a description of their expected impact on the objectives of this Regulation.***

*Upon request by the competent regulatory authorities, the Agency shall issue an opinion within three months on the proposals for terms and conditions or methodologies.*

# Legal requirements for the CCR determination (II)

Article 15 of the CACM Regulation sets the requirements for the determination of CCRs.

*1. By three months after the entry into force of this Regulation all TSOs shall jointly develop a common proposal regarding the determination of capacity calculation regions. The proposal shall be subject to consultation in accordance with Article 12.*

*2. The proposal referred to in paragraph 1 shall define the bidding zone borders attributed to TSOs who are members of each capacity calculation region. The following requirements shall be met:*
*(a) it shall take into consideration the regions specified in point 3(2) of Annex I to Regulation (EC) No 714/2009;*
*(b) each bidding zone border, or two separate bidding zone borders if applicable, through which interconnection between two bidding zones exists, shall be assigned to one capacity calculation region;*
*(c) at least those TSOs shall be assigned to all capacity calculation regions in which they have bidding zone borders.*

*3. Capacity calculation regions applying a flow-based approach shall be merged into one capacity calculation region if the following cumulative conditions are fulfilled:*
*(a) their transmission systems are directly linked to each other;*
*(b) they participate in the same single day-ahead or intraday coupling area;*
*(c) merging them is more efficient than keeping them separate. The competent regulatory authorities may request a joint cost-benefit analysis from the TSOs concerned to assess the efficiency of the merger.*

# Legal requirements for the CCR determination (III)

The following terms and conditions or methodologies shall be developed and approved on a CCR level according the CACM Regulation:

(a) the common capacity calculation methodology in accordance with Article 20;

(b) the methodology for coordinated redispatching and countertrading in accordance with Article 35(1);

(c) the fallback procedures in accordance with Article 44; and

(d) the redispatching and countertrading cost sharing methodology in accordance with Article 74(1).

**The FCA code will also use the CCRs defined according to the CACM Regulation for regional work.**

# QUESTIONS?

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# The structure of the proposal

- **Main body of the CCR Proposal:** for approval. This part is to be approved by “all NRAs” and contains information only on EU bidding zone borders (borders connecting bidding zones between two EU Member States)

- **Annex 1 - Future composition of CCRs including various non-EU bidding zone borders:** for information purposes (not for approval by NRAs). It is acknowledged the importance of involving non-EU TSO members of ENTSO-E, especially the ones responsible for electricity systems physically connected to EU Member States. On the other hand, the legal restrictions coming from the NRAs’ competencies during the approval process has to be taken into account.

- **Annex 2: Future bidding zone borders:** for information purposes (not for approval by NRAs). It describes some future bidding zone borders to be included in the future to the CCRs due to the fact that the relevant interconnectors are still under construction and are estimated to be commissioned after 2018 and/or are not yet operated by legal entities certified as TSOs.

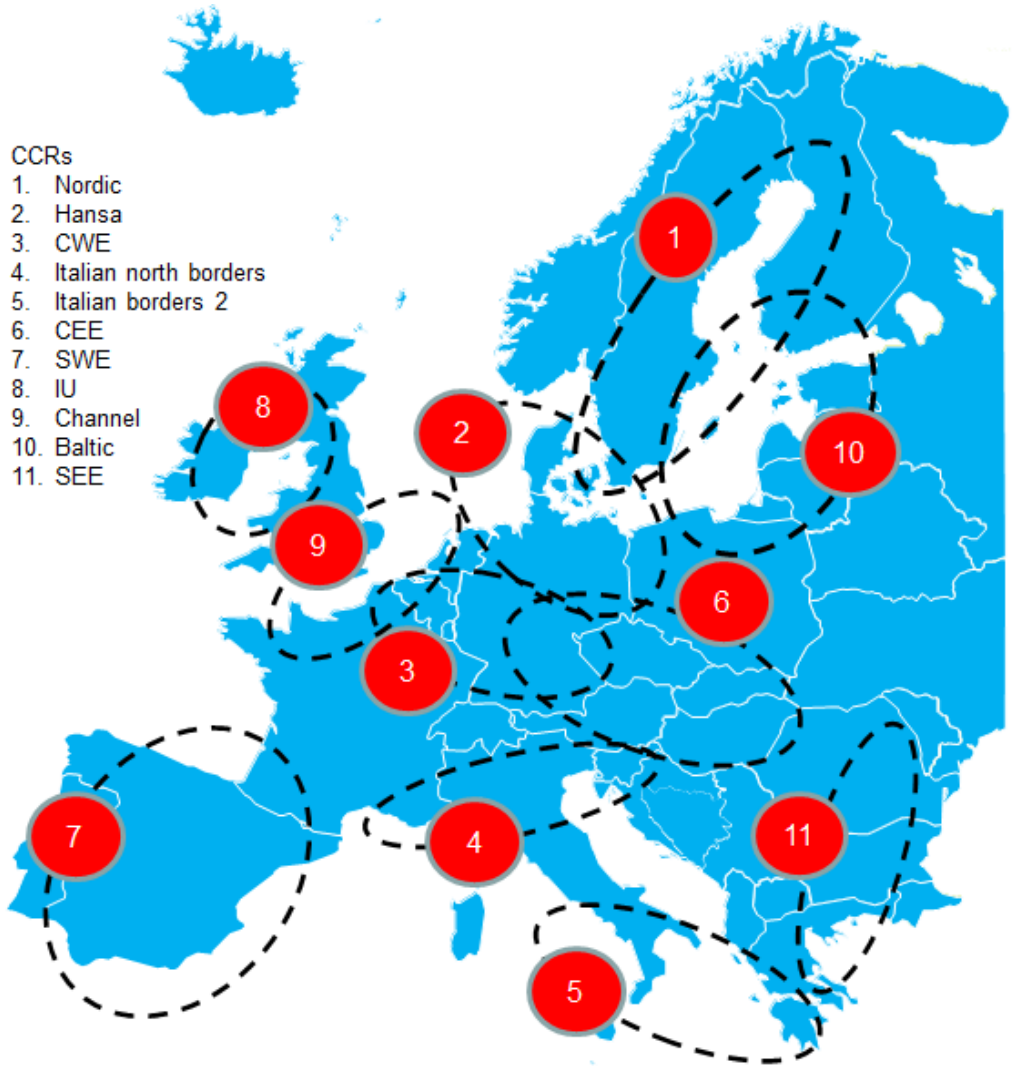
# Our proposal

- ENTSO-E and TSOs propose 11 capacity calculation regions in Europe, each region corresponding to a geographical area in which coordinated capacity calculation is applied.

- This CCR proposal represents a dynamic and pragmatic pan-European approach with a short- and mid-term view of the geographical scope of CCRs that supports coordination across the bidding zone borders where there is the highest observed interdependence.

- The need for larger CCRs will be assessed in due time and as early as possible by the relevant TSOs after some experience on coordination within a CCR and between CCRs in accordance with the CACM Regulation has been gained.

# Rough geographic location of proposed CCRs



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# Expected impact of CCR proposal on the objectives of CACM GL

The proposed CCRs serve the objective of:

- ensuring **optimal use of transmission infrastructure**→ by linking bidding zone borders, where coordination needs are high in capacity calculation
- **optimising the calculation of cross-zonal capacity** → as CCRs lay down coordination within a CCR and between CCRs
- **efficient long-term operation and development** of the electricity transmission system → The coordinated capacity calculation within a CCR will reveal constraining elements in the transmission network that contribute to the long-term operation and development of the electricity transmission system and electricity sector in the Union.
- **harmonization** →by harmonizing of the capacity calculation methodology within the CCRs and merging of CCRs when efficiency reasons justify doing so.
- promoting **effective competition in generation, trading and supply of electricity** → as it will take into account market specificities on bidding zone borders by allowing optimally configured CCRs to be established.
- **transparency** and reliability of information → as the proposed CCRs will be the basis for further work towards market integration in the most transparent way.

# Implementation timeline

**When will the CCRs be implemented?**

As soon as all NRAs approve the CCRs

This date (approval by All NRAs) will set specific deadlines for the Regional deliverables according to the CACM regulation

# QUESTIONS?

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# THE CAPACITY CALCULATION REGIONS

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*An opinion on the border between Germany-Austria is expected in the near future from ACER following a request by the Polish Regulatory Authority to ACER to assess the compliance of the congestion management rules on the Germany-Austria border with existing European Regulation.

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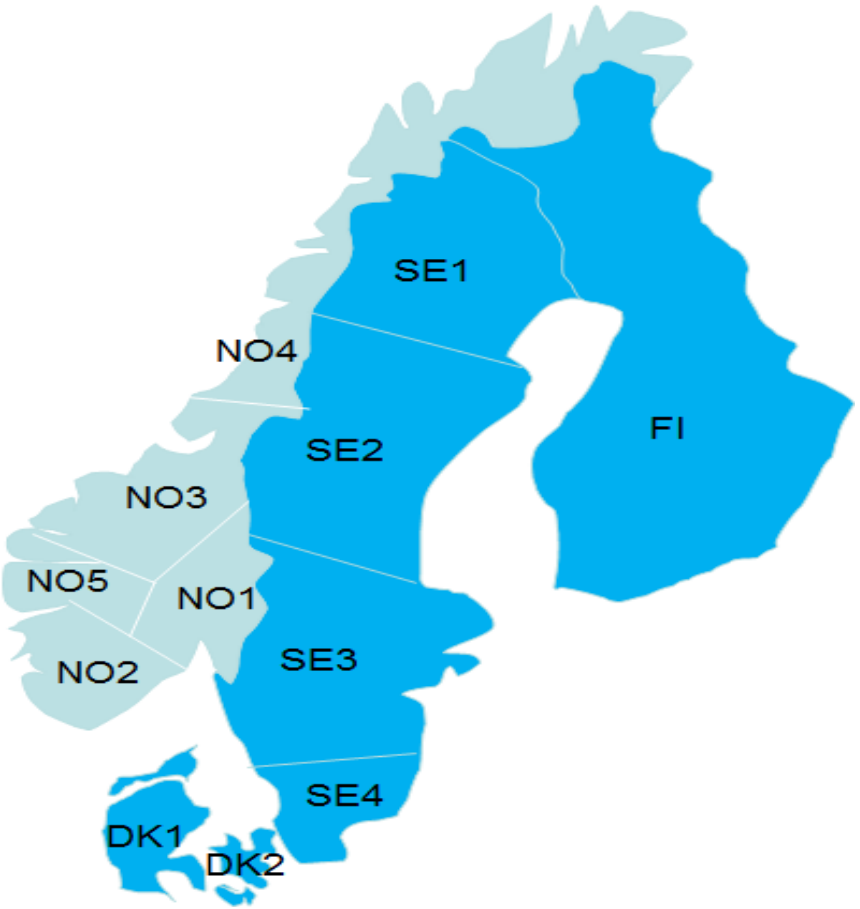
# Capacity Calculation Region 1: Nordic

(including non-EU bidding zone borders)




| Bidding zone borders | TSOs involved | Countries involved |
|---|---|---|
| **DK1-SE3, DK2-SE4, DK1-DK2, SE4-SE3, SE3-SE2, SE2-SE1, SE3-FI, SE1-FI, DK1-NO2*, SE3-NO1*, SE2-NO3*, SE2-NO4*, SE1-NO4*, NO3-NO4*, NO1-NO3*, NO1-NO5*, NO1-NO2*, NO2-NO5*** | Energinet.dk, Svenska kraftnät, Fingrid, Statnett* | Denmark, Sweden, Finland, Norway* |

**These bidding zone borders will be included in the CCR Nordic in the future, subject to the fulfillment of the legal requirements for the application of CACM Regulation in Norway.*



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# Capacity Calculation Region 2: Hansa

(including non-EU bidding zone borders)


| Bidding zone borders | TSOs involved | Countries involved |
|---|---|---|
| **DK1-DE/AT/LU, DK2-DE/AT/LU, SE4 – PL, NO2-NL*** | Energinet.dk, TenneT TSO GmbH, 50Hertz, Svenska kraftnät, PSE, Statnett*, Tennet TSO BV* | Denmark, Germany , Sweden, Poland, Norway*, Netherlands* |

**These bidding zone borders will be included in the CCR Hansa in the future, subject to the fulfillment of the legal requirements for the application of CACM Regulation.*



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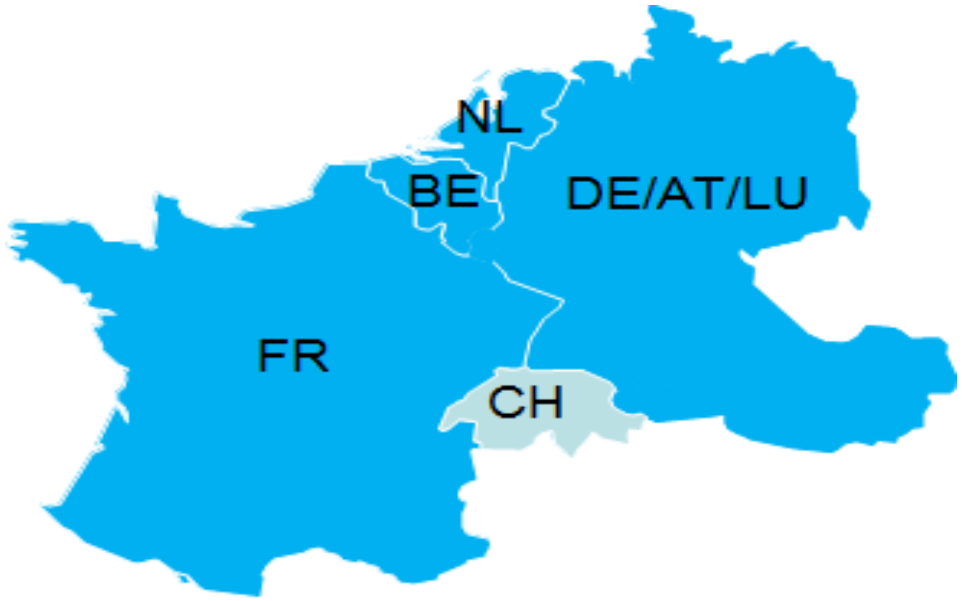
# Capacity Calculation Region 3: Central-west Europe (CWE)

(including non-EU bidding zone borders)




| Bidding zone borders | TSOs involved | Countries involved |
|---|---|---|
| **FR-BE, BE-NL, FR-DE/AT/LU, NL-DE/AT/LU, BE-DE/AT/LU, CH-FR*, CH-DE/AT/LU*** | Elia, RTE, TenneT BV, Amprion, TransnetBW, TenneT GmbH, 50Hertz, APG, Creos, Swissgrid* | Belgium, France, The Netherlands, Germany, Austria, Luxembourg, Switzerland* |

**The bidding zone borders will be included in the CCR CWE in the future, subject to the fulfillment of the legal requirements for the application of CACM Regulation in Switzerland in accordance to Article 1 (4) and (5)of CACM Regulation.*



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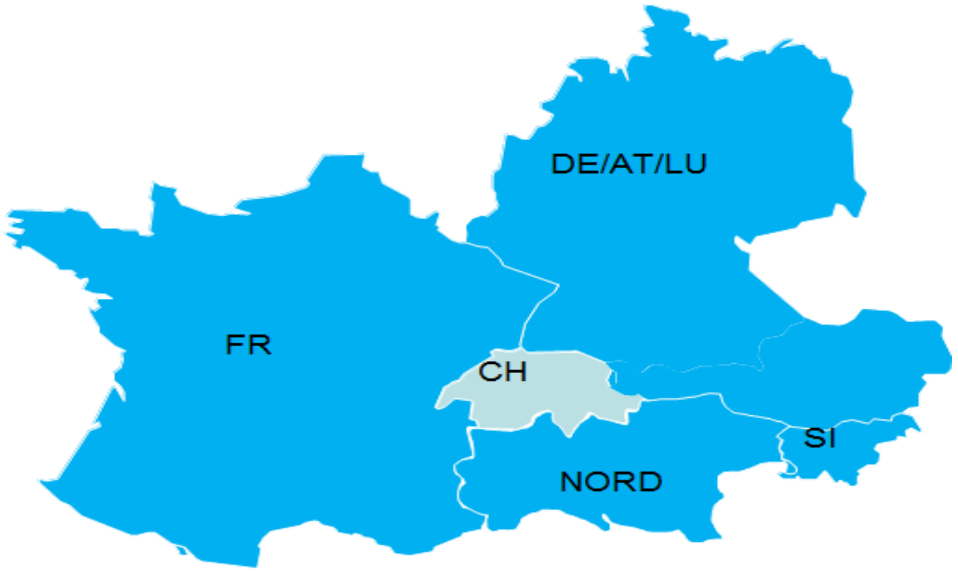
# Capacity Calculation Region 4: Italian north borders

(including non-EU bidding zone borders)




| Bidding zone borders | TSOs involved | Countries involved |
|---|---|---|
| **NORD-FR, NORD-DE/AT/LU, NORD-SI NORD-CH*** | Terna, RTE, APG, ELES, Swissgrid* | Italy, France, Austria, Slovenia, Switzerland* |

**The bidding zone borders will be included in the CCR Italian north borders in the future, subject to the fulfillment of the legal requirements for the application of CACM Regulation in accordance to Article 1 (4) and (5) of CACM Regulation.*



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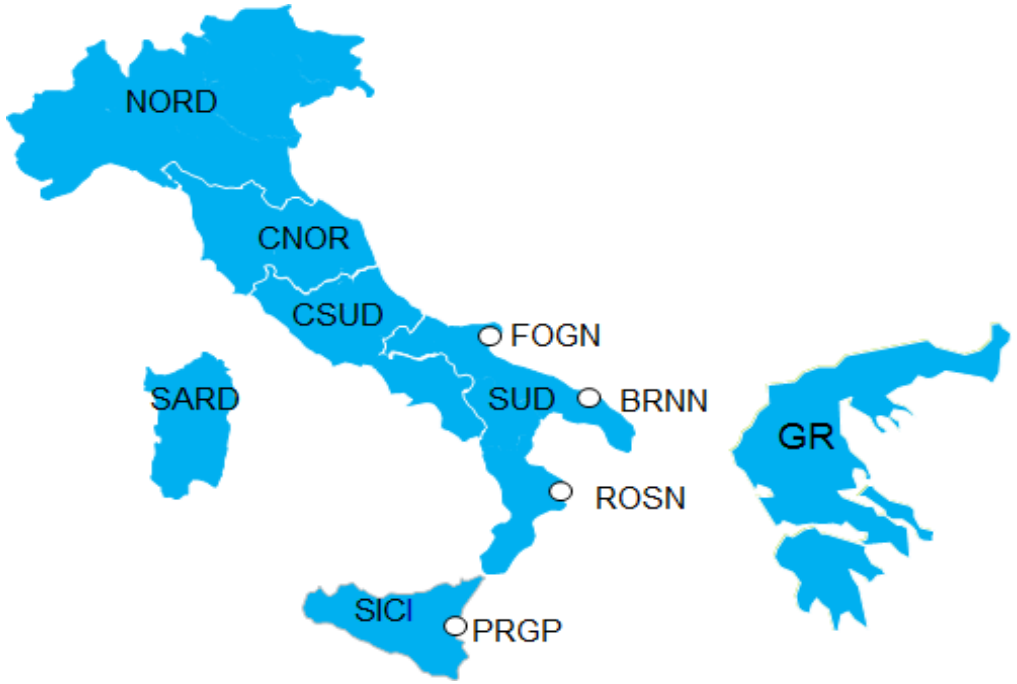
# Capacity Calculation Region 5: Italian borders 2




| Bidding zone borders | TSOs involved | Member states involved |
|---|---|---|
| **BRNN-GR, NORD-CNOR, CNOR-CSUD, CNOR-SARD, SARD-CSUD, CSUD-SUD, SUD-BRNN, SUD-FOGN, SUD-ROSN, ROSN-SICI, SICI-PRGP** | Terna, IPTO | Italy, Greece |



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# Capacity Calculation Region 6: Central Eastern Europe (CEE)


| Bidding zone border | TSOs involved | Member states involved |
|---|---|---|
| **First step: DE/AT/LU-PL, DE/AT/LU-CZ, DE/AT/LU-HU, DE/AT/LU-SI, CZ-SK, CZ-PL, HU-SK, PL-SK,** | 50Hertz, TenneT GmbH, PSE, CEPS, APG, MAVIR, ELES, SEPS | Germany, Poland, Czech Republic, Austria Hungary, Slovenia, Slovakia |
| **Second step: in addition to above: HR-SI, HR-HU, RO-HU,** | HOPS, Transelectrica | Croatia, Romania |
| **New bidding zone border: HU-SI** | No change | No change |



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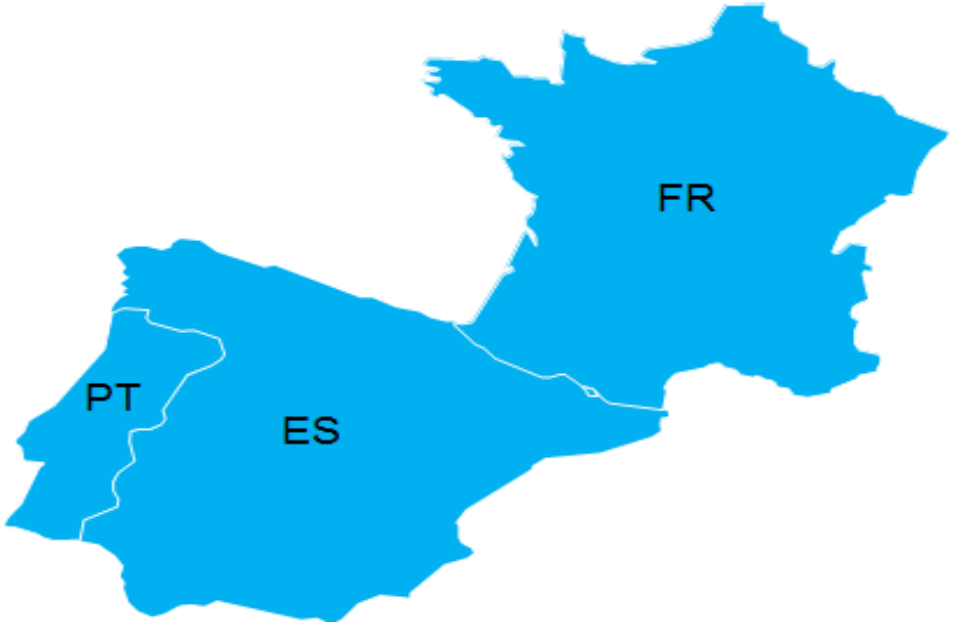
# Capacity Calculation Region 7: South-west Europe (SWE)




| Bidding zone borders | TSOs involved | Member states involved |
|---|---|---|
| **FR-ES, ES-PT** | RTE, REE, REN | France, Spain, Portugal |



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# Capacity Calculation Region 8: Ireland and United Kingdom (IU)


| Bidding zone border | TSOs involved | Countries involved |
|---|---|---|
| **SEM* – GB** | EirGrid, Moyle, NGET, SONI | Ireland, United Kingdom |

**SEM = Single Electricity Market in Ireland and Northern Ireland.*



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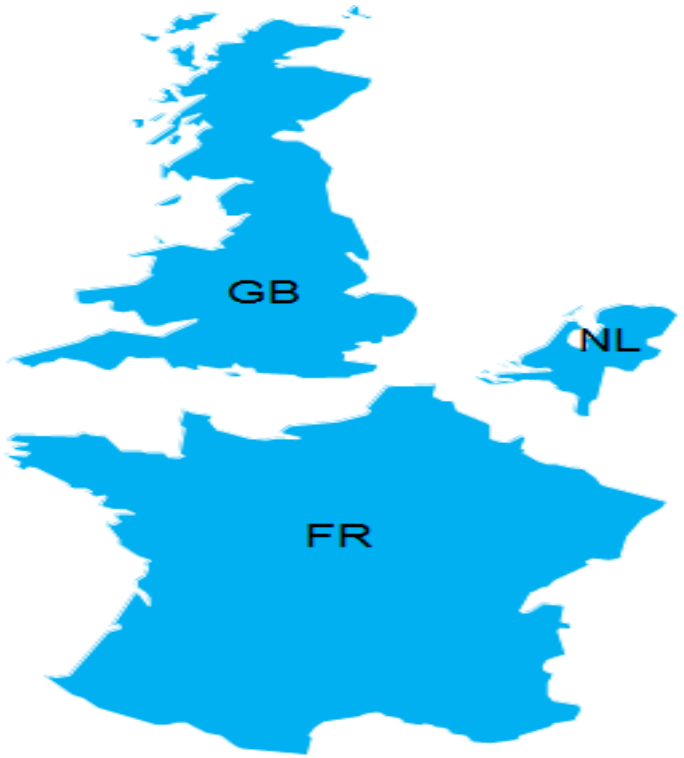
# Capacity Calculation Region 9: Channel




| Bidding zone border | TSOs involved | Member states involved |
|---|---|---|
| **FR-GB, NL-GB** | RTE, NGET, NGIL, BritNed, Tennet NL | France, United Kingdom, Netherlands |



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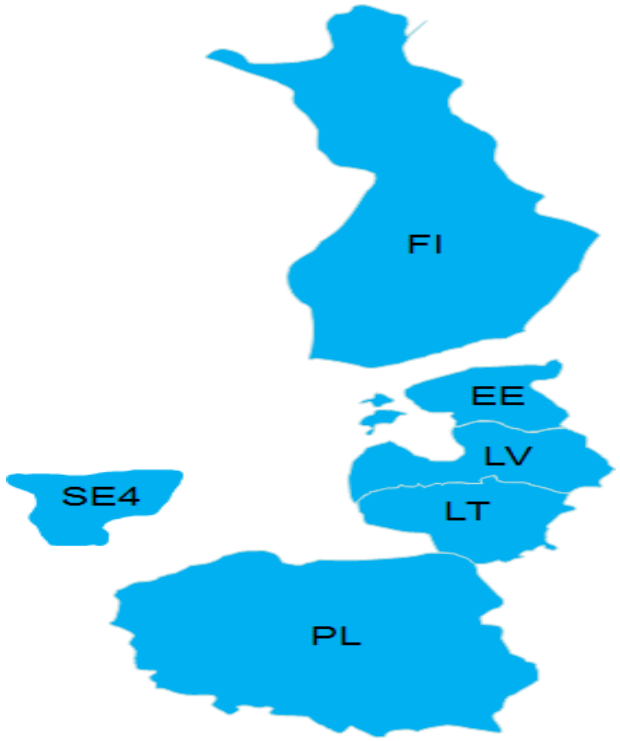
# Capacity Calculation Region 10: Baltic




| Bidding zone border | TSOs involved | Member states involved |
|---|---|---|
| **EE-LV, LV-LT, EE-FI,** | Elering, Augstsprieguma tīkls, Litgrid, Fingrid | Estonia, Latvia, Lithuania, Finland |
| **New bidding zone borders: LT-SE4, LT-PL** | Svenska kraftnät, PSE | Sweden, Poland |



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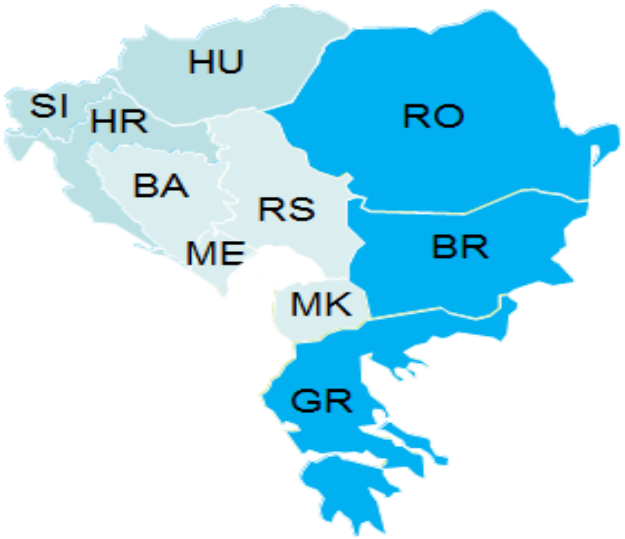
# Capacity Calculation Region 11: South-east Europe (SEE)

(including non-EU bidding zone borders)




| Bidding zone borders | TSOs involved | Countries involved |
|---|---|---|
| **GR-BG, BG-RO, HR-SI*, HR-HU*, RO-HU*, RS-HU**, RS-HR**, HR-BA**, BA-RS**, BA-ME**, RS-ME**, RS-RO**, RS-BG**, RS-MK**, GR-MK**, BG-MK**, IT-ME*** | IPTO, ESO, Transelectrica, HOPS*, ELES*, MAVIR*, EMS**, NOSBIH**, CGES**, MEPSO**, Terna*** | Greece, Bulgaria, Romania, Croatia*,** Slovenia*, Hungary*,**, Serbia**, Bosnia-Herzegovina**, Montenegro**, FYR of Macedonia**, Italy*** |

**Bidding zone borders/TSOs/member states included in SEE CCR until the date of implementation of flow-based capacity calculation in CEE CCR.*

***The bidding zone borders will be included in the CCR SEE in the future, subject to the fulfillment of the legal requirements for the application of CACM Regulation, when CACM Regulation shall become an effective law in the national legal framework of each of these countries after the adoption of the CACM Regulation by the respective national legislation. Other SEE TSOs and the bidding zones borders for which they are responsible may join to SEE CCR when predefined conditions are met*

****The bidding zone border IT-ME will be included in the SEE CCR when the interconnection between Italy and Montenegro is commissioned (expected to be in 2017/2018) and subject to the fulfillment of any other legal requirements for the application of the CACM Regulation by Montenegro.*



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# Future bidding zone borders

- Annex 2: includes some future interconnections still under construction and to be commissioned after 2018 or not yet operated by legal entities certified as TSOs

- The geographical border SE4-DE/AT/LU will be included in the CCR Hansa after the legal entity operating the interconnection connecting the respective bidding zones becomes a certified TSO.

- The bidding zone border BE-UK will be included in the CCR Channel after the interconnection has been commissioned and the relevant TSO(s) have been certified for the operation of the interconnection connecting the respective bidding zones.

# Next steps

- 24 September – End of public consultation
- Assessment of comments by the TSOs – update of the proposal
- 13 November - Submission of the proposal by each TSO to each NRA~~s~~
  - If there is an All TSOs proposal → ok
  - If no All TSOs proposal → TSOs to submit draft proposal with explanation on non agreement → ACER and NRAs make a recommendation to the EC who takes appropriate steps in 4 months to make possible to adopt CCRs. (Art 9.4)
- Approval / non approval / no consensus between NRAs
  - If approval: CCRs determined → **The Regional work starts**
  - If no approval: amendments proposed by All NRAs - All TSOs have 2 months to resubmit the new proposal to All NRAs. All NRAs have 2 months to approve (Art 9.12)
  - If no consensus by NRAs: ACER decides (Art 9.11)

# QUESTIONS?

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