


ACER

 Agency for the Cooperation
of Energy Regulators

Bidding zone review pursuant to CACM Regulation

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Key topics

- Objectives and construction of CACM Regulation
- Pilot bidding zone review
 - *Alternative configurations*
 - *Methodology, assumptions*
 - *Conclusions and recommendations*
- Changes in legal framework
- Alternatives
- New bidding zone review

Objective

- In 2008 defined the target model:
 - *Flow based capacity calculation*
 - *Optimal bidding zones*
 - *Coordinated redispatching and countertrading*
- Regular monitoring of structural congestions
- Regular monitoring of market efficiency of existing bidding zones
- If needed: review of bidding zones and a change of bidding zones

Construction in CACM Regulation (1)

- Analysis of existing bidding zone configuration, every 3 years:
 - *ENTSO-E: Report on structural congestions, loop flows and congestions costs*
 - *ACER: Report on the market efficiency of existing bidding zones*
- If ACER identifies that existing bidding zones are inefficient, it can launch a bidding zone review
- ENTSO needs to develop methodology, assumptions and alternative bidding zone configurations
- NRAs can request amendments to them (based on consensus)

Construction in CACM Regulation (2)

- TSOs have 15 months to deliver the report on bidding zone review and make a recommendation to Member States
- Alternative configurations are evaluated against multidimensional criteria:
 - *market efficiency, network security, stability and robustness*
- After recommendation MS have six months for a decision which needs to be unanimous
- No solution in case of disagreements among MSs

First bidding zone review

- **August 2012 ACER invited ENTSO to launch a pilot bidding zone review based on draft CACM Regulation**
- **The motivation was to solve the dispute in Central East Europe with regard to the implementation of flow based capacity calculation**
- **Since 2010 CEE region observed high loop flows due to DE-AT bidding zone**
- **In 2014 ENTSO-E issued first technical report and ACER issued first market report**
- **Subsequently the pilot bidding zone review started**
- **After CACM entry into force, ACER officially launched the bidding zone review in December 2016**

Expert based configurations

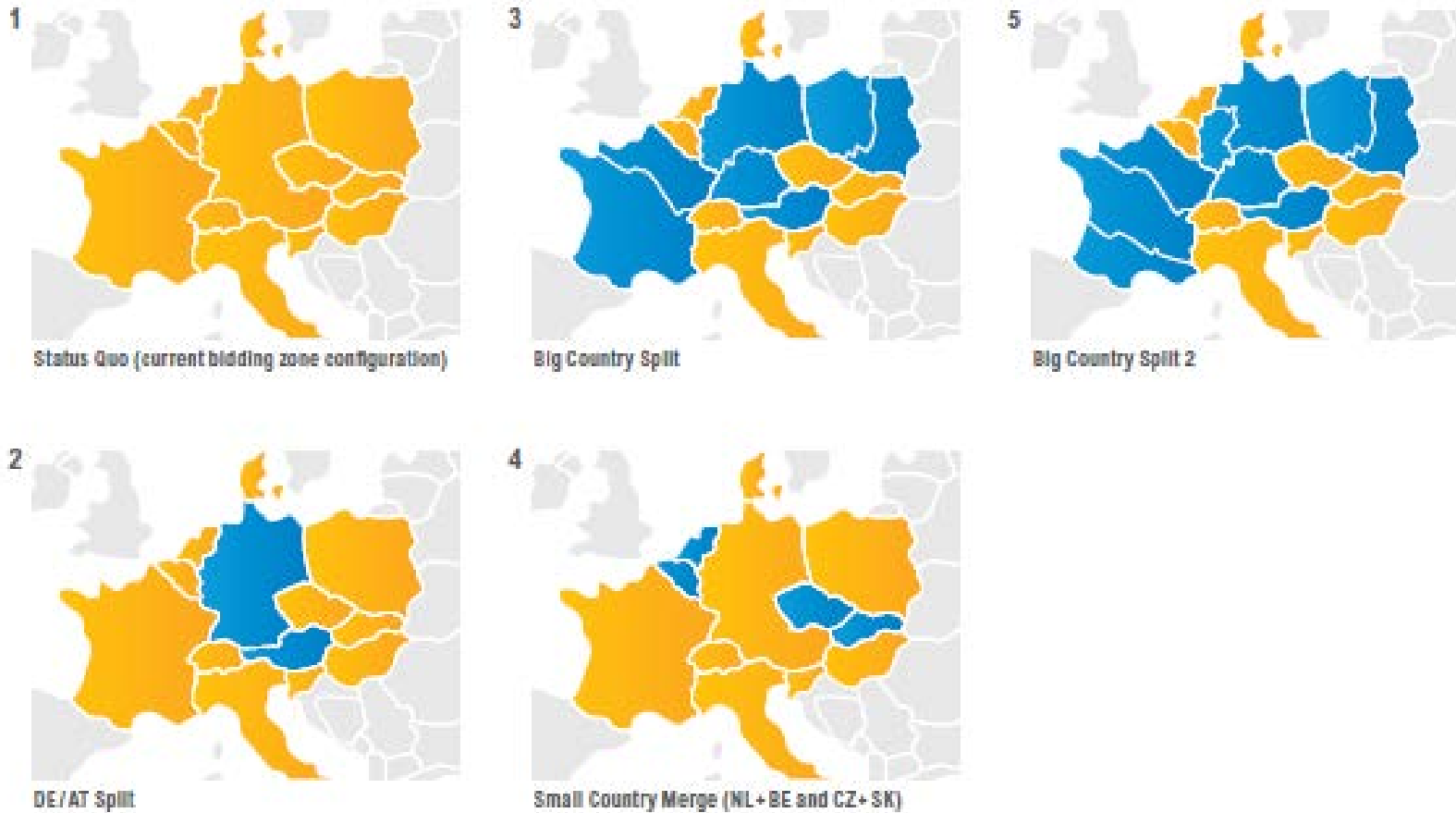


Figure 1.1: Bidding zone configurations under investigation in the Bidding Zone Review

Model based configurations

- Calculate nodal prices
- Cluster the nodes with similar prices into zones
- Stop clustering at the targeted number of zones
- The resulting configuration of zones is used for further analysis

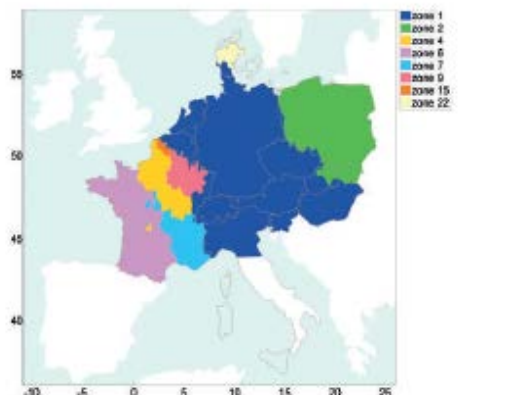


Figure 4.18: Clustering outcome, post adjustment steps 1–3, demonstrating the limitations of the modelling, 2025 SOAF planned grid (after post-processing steps 1–3)



Figure 4.20: Clustering outcome, post adjustment steps 1–4, demonstrating the limitations of the modelling, 2025 SOAF planned grid (after post-processing steps 1–4)

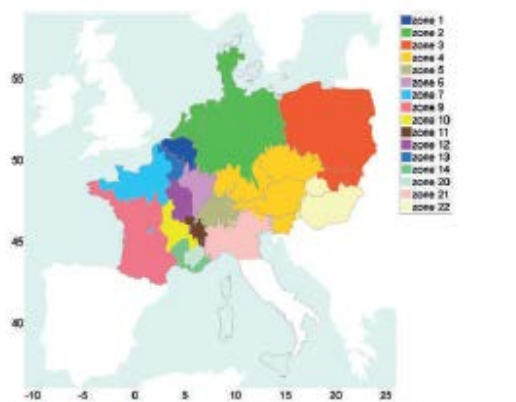


Figure 4.19: Clustering outcome, post adjustment steps 1–3, demonstrating the limitations of the modelling, 2025 SOAF worst case grid (after post-processing steps 1–3)

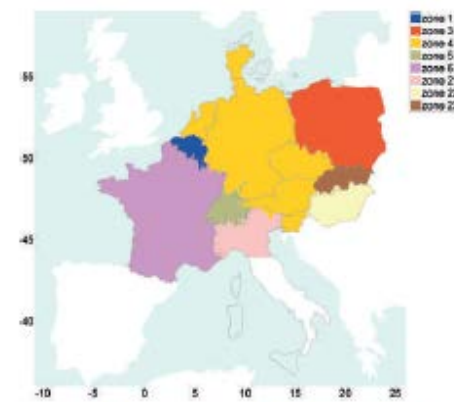


Figure 4.21: Clustering outcome, post adjustment steps 1–4, demonstrating the limitations of the modelling, 2025 SOAF worst case grid (after post-processing steps 1–4)

Considered generation/load/network scenarios

- Two time horizons:
- 2020 and 2025
- TYNDP 2016
- System Adequacy and Outlook Forecast

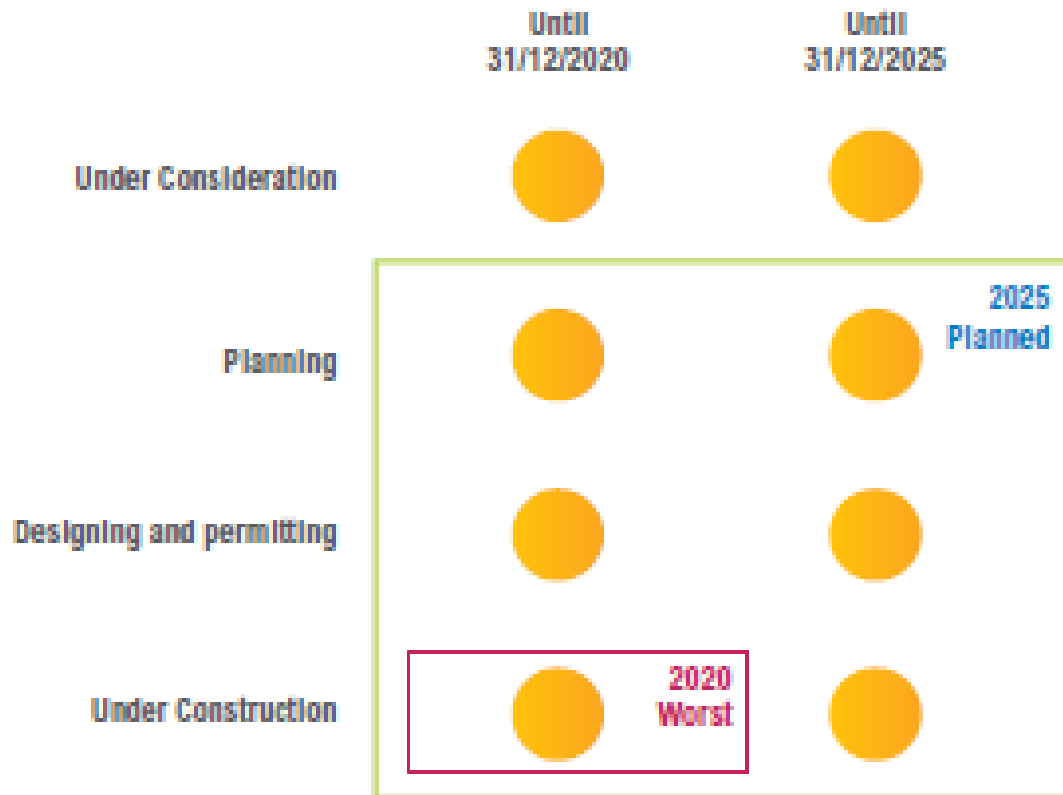


Figure 3.1: Overview of grid scenarios considered in the First Edition of the Bidding Zone Review

Criteria

Network security	Market efficiency	Stability and robustness of bidding zones
<ul style="list-style-type: none"> – Operational security (5.4) – Security of supply (5.5) – Degree of uncertainty in cross-zonal capacity calculation (5.6) 	<ul style="list-style-type: none"> – Economic efficiency (5.7) – Firmness costs (5.8) – Market liquidity (5.9) – Market concentration and market power (5.10) – Effective competition (5.11) – Price signals for building infrastructure (5.12) – Accuracy and robustness of price signals (5.13) – Long-term hedging (5.14) – Transition and transaction costs (5.15) – Infrastructure costs (5.16) – Market outcomes in comparison to corrective measures (5.17) – Adverse effects of internal transactions on other bidding zones (5.18) – Impact on the operation and efficiency of the balancing mechanisms and imbalance settlement processes (5.19) 	<ul style="list-style-type: none"> – Stability and robustness of bidding zones (5.20) – Consistency across capacity calculation time frames (5.21) – Assignment of generation and load units to bidding zones (5.22) – Location and frequency of congestion (market and grid) (5.23)

Table 5.1: Overview of evaluation criteria

Modelling

- Expert based configurations
- Model based configurations

- Evaluation of criteria

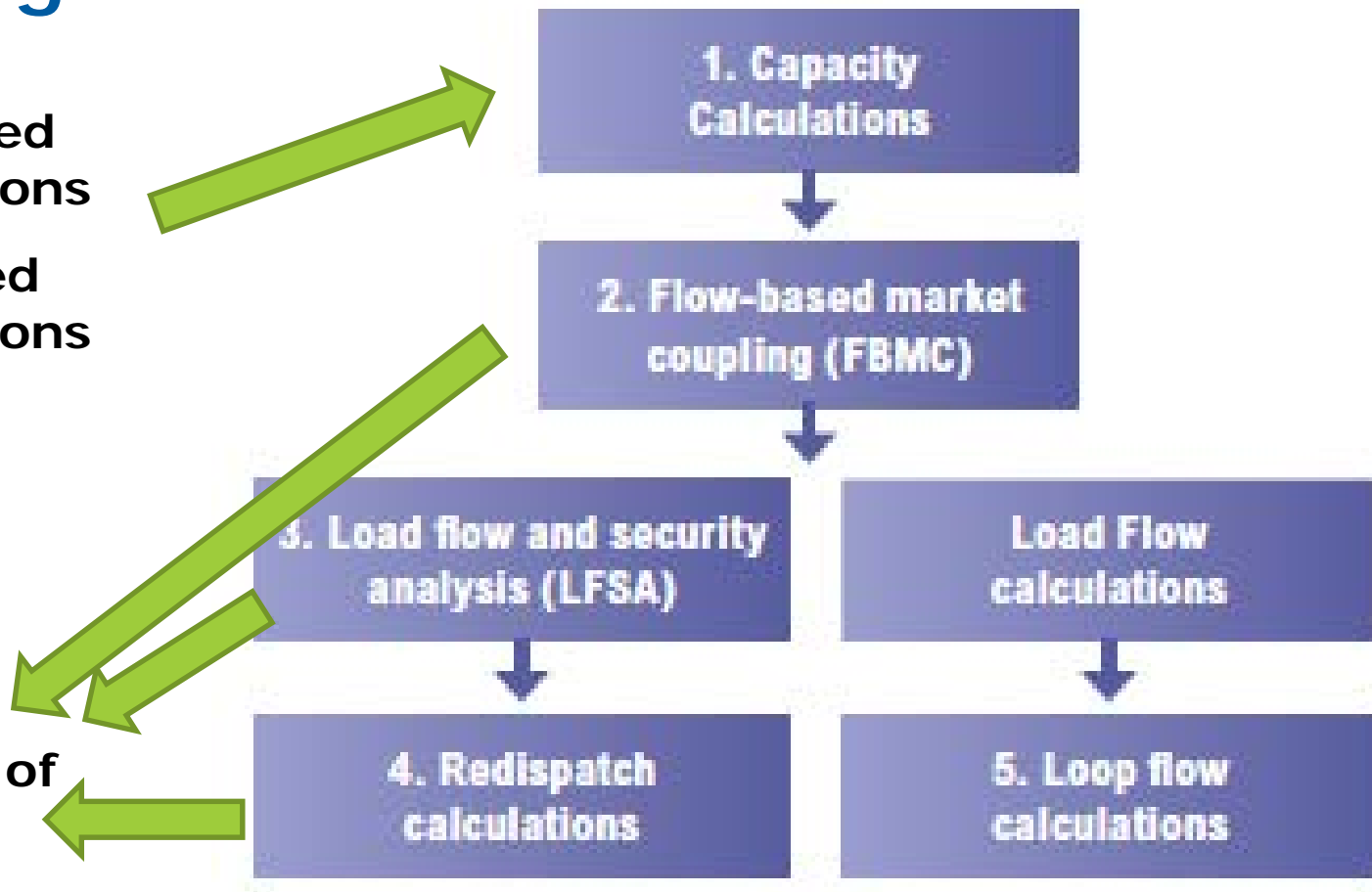


Figure 6.2: Initial model set-up in the First Edition of the Bidding Zone Review

Modelling challenges

- **Flow based capacity calculation**
 - Based case
 - Remedial actions
 - Reliability margins
- **Coordinated redispatching**
- **Calculation of loop flows**
- **Some criteria cannot be quantified/monetised:**
 - Market power, liquidity, competition, price signals
- **Model based configurations**

First bidding zone review – conclusions recommendations

- The methodology is not mature enough to allow for any conclusion on which bidding zone configuration is more efficient, hence...
 - ...TSOs recommend to keep existing configuration
- No assumption on the efficiency of existing bidding zone can be made from this review (including DE/AT split)
- TSOs recommend to launch a bidding zone review again based on new technical and market report...
- ... this would give more time for development of the methodology and assumptions

Clean Energy Package

- Bidding zone review is softened
- MSs can decide not to follow the conclusions and recommendation, if:
 - a) they can maintain their targets for offering cross-zonal capacities, by e.g. applying redispatching*
 - b) They choose to implement an action plan to address congestions by 2025*
- Decisions of MSs are made by consensus, but:
- In case of disagreements and as a last resort measure, the Commission will make a decision
- Changes in bidding zones can also be made based solely on the identification of structural congestions

Alternatives

- **Clean Energy Package proposes to establish the concept of minimum capacities...**
 - *...to ensure non-discrimination between internal and cross-zonal exchanges*
- **Regardless of bidding zones:**
 - *they should not lead to low cross-zonal capacities*
- **ACER Recommendation on non-discrimination**
- **Diligent monitoring and transparency of structural congestions and capacity calculation**
- **Nodal pricing**

New bidding zone review?

- In January 2018 ACER asked ENTSO-E to develop a new technical report...
 - *...covering the calendar years 2015, 2016 and 2018*
- The report will be delivered by 18 October
- ACER is currently finalising the market report
- Preliminary findings show that current bidding zones are still inefficient
- ACER is reluctant to launch a new bidding zone review until the governance and decision making is improved
- Focus on the identification of structural congestions

Biddign zone review in EnC

- Next bidding zone review would encompass the whole EU
- For the moment focus on big bidding zones
- Is there a benefit of merging small bidding zones?
 - *Nordic market design works well*
- Structural congestions are rare in small zones and cross-zonal capacities should be high
- ACER will extend monitoring of offered cross-zonal capacities in EnC countries
 - *Define benchmark capacities*

Thank you for your attention!



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