

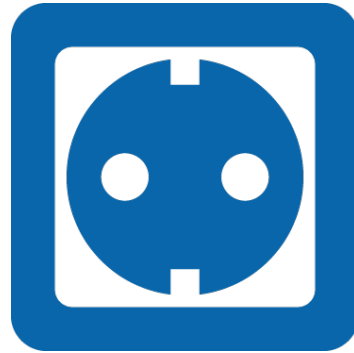


ACER-ECRB Workshop: Bidding Zone Review

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6 November 2019

- New 'momentum' for BZR process through adoption of Regulation 2019/943
 - Provisions on bidding zone review process (Article 14)
 - Provisions on minimum capacity made available for trade (Article 16(8))
- The Bidding Zone Review (BZR) process assesses the 'balance' of three methods for congestions management in light of overall welfare, subject to a certain grid topology:
 - Bidding zone configuration (both status quo and alternative options)
 - Capacity calculation (flow-based as the target in highly-meshed areas)
 - Redispatch (for relieving remaining congestion)
- Note: The BZR process is a dry run for the target model prescribed in CACM GL in a model environment.



Requirements from CACM GL and Regulation 2019/943

Relevant Provisions from CACM GL - Process

Steps in BZR process. Decision processes not conclusive.

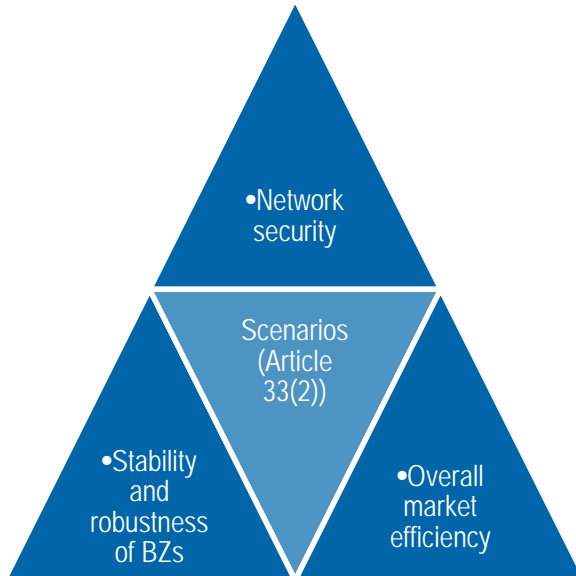
- **Initiation through (Article 32(1)):**
 - ACER
 - NRAs following ACER recommendation
 - TSOs of a CCR
 - single NRA or TSO
 - Member States in a CCR
- **Several steps (Article 32(4)):**
 - Development of the methodology and assumptions that will be used in the BZR process including alternative bidding zone configurations (Article 32(4)(a))
 - NRAs are granted three months to request amendments
 - No escalation to ACER foreseen.
 - Assess and compare the current BZ configuration and each alternative BZ configuration using the criteria specified in Article 33 (Article 32(4)(b)(i))
 - Public consultation (Article 32(4)(b)(ii))
 - Submit proposal to relevant Member States and NRAs
- **Member States reach an agreement on amendments of BZ configuration within six months**
 - No escalation step foreseen if no agreement is reached

Relevant Provisions from CACM GL - Criteria

Exhaustive list of criteria to be assessed. Some of which are difficult to monetise.

Criteria (Article 33):

- Network security
 - Operational security and security of supply
 - Uncertainty of capacity calculation
- Overall market efficiency
 - Change in economic efficiency and market efficiency
 - Transaction and transition costs
 - Cost of infrastructure for relieving congestion
 - ...
- Stability and robustness of BZs
 - Sufficient stability and robustness over time
 - Consistency for all time frames
 - ...
- All of which based on scenarios for likely infrastructure development



Relevant Provisions from Regulation 2019/943

Requires BZR explicitly to identify structural congestions. Sets maximum duration to 12 months.

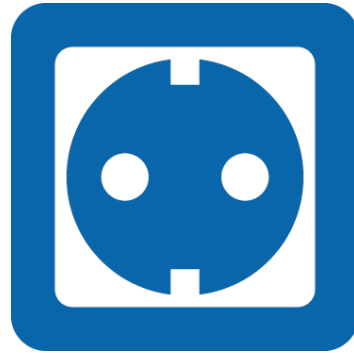


- Report from ENTSO-E on structural congestion every three years. (Article 14(2))
- BZR shall identify all structural congestions and include an analysis of different configurations. (Article 14(3))
- By 5 October 2019 all relevant TSOs shall submit a proposal for the methodology and assumptions, including alternative configurations, that are to be used in the BZR process. Structural congestions which are not expected to be overcome in the next three years shall form the basis for alternative configurations. (Article 14(5))
- Maximum duration of BZR process is set to 12 months
 - From approval of methodology and assumptions to final report (Article 14(6)).

Relevant Provisions from Regulation 2019/943

Closes some gaps from CACM GL in terms of decision making.

- *“The relevant regulatory authorities shall take a **unanimous decision** on the proposal **within 3 months** of submission of the proposal. Where the regulatory authorities are **unable to reach a unanimous decision** on the proposal within that time frame, **ACER shall, within an additional three months**, decide on the methodology and assumptions and the alternative bidding zone configurations to be considered” (Article 14(5))*
→ Addresses gap from CACM GL
- **What happens after BZR process?**
 - Nothing, if current BZ configuration proves to be most efficient set-up and no structural congestion is identified
 - If structural congestion is identified, the final report of the BZR process (Article 14(7))
 - serves as a base for an action plan pursuant to Article 15, or;
 - an amendment of the BZ configuration
- **If Member State(s) do not agree on an amendment of BZ configurations, EC decides on whether to amend or maintain BZ configuration (Article 14(8))**
→ Addresses gap from CACM GL
- **In conjunction to Article 14, the provisions on minimum capacity made available for cross-zonal trade pursuant to Article 16(8) impact the BZR process**

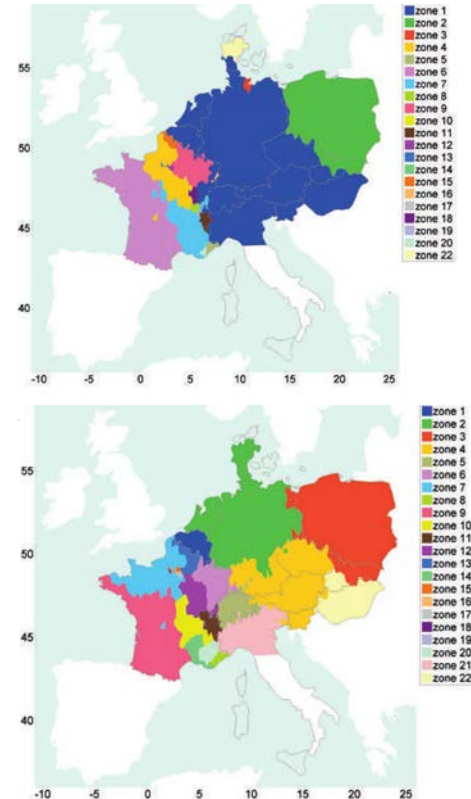


Previous Bidding Zone Review Processes

First BZR - Background

The first run. Attempts to define BZs based on grid topology and LMPs.

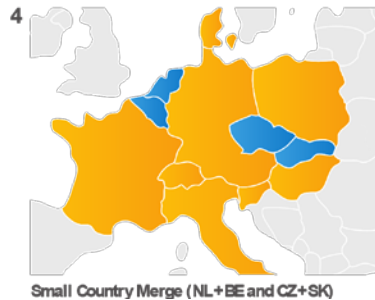
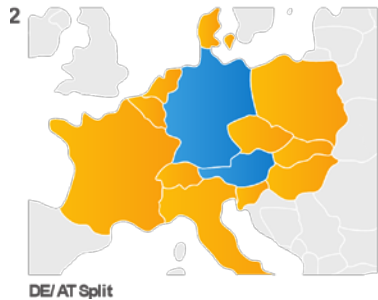
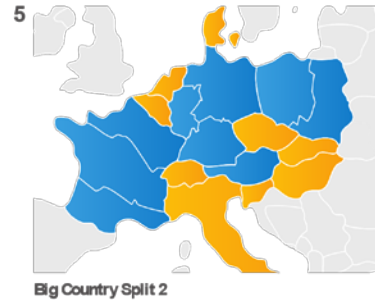
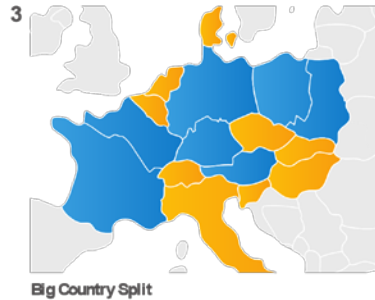
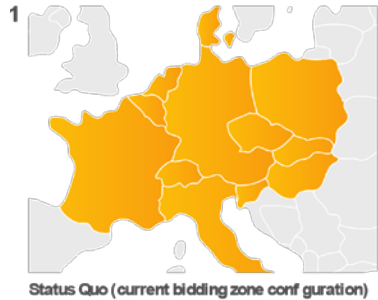
- Started as early implementation process in 2014
- Grid based on TYNDP 2016 (after having switched from TYNDP 2014)
- Scenarios: 2025 Planned and 2020 Worst
- Model based BZ configurations
 - Methodologies for clustering based on
 - Locational Marginal Prices (LMPs)
 - PTDFs
 - Was deemed to be infeasible and were eventually disregarded
- Stakeholder involvement:
 - TSOs created Stakeholder Advisory Group (mostly comprised of members from MESC)



Source: ENTSO-E: FIRST EDITION OF THE BIDDING ZONE REVIEW – Final Report

First BZR - Configurations

Limited geographic scope. Alternative BZ delineations comprised of both mergers and splits.



Source: ENTSO-E: FIRST EDITION OF THE BIDDING ZONE REVIEW – Final Report

- Focused on Central-Western and Central-Eastern Europe
- Mostly coherent with Core Capacity Calculation Region
- Alternative delineations in a nutshell:
 - Split of larger BZs into smaller ones (DEAT, FR, PL) → two configurations
 - Split of DE and AT
 - Mergers of BE + NL and CZ + SK

First BZR - Outcome

After close to four years, a result was published.

- Final report published on 9 March 2018
- Recommendation:
 - *"..., the evaluation presented in this First Edition of the Bidding Zone Review does not provide sufficient evidence for a modification of or for maintaining of the current bidding zone configuration. Hence, the participating TSOs recommend that, given the lack of clear evidence, the current bidding zone delimitation be maintained."*
- Split of Germany and Austria was initiated independently of first BZR
- Relevant Regulatory Authorities issued a position paper on the BZR process in March 2018



Source: ENTSO-E: FIRST EDITION OF THE BIDDING ZONE REVIEW – Final Report

BZR in Italy

Italy conducted an internal BZR process. Italy changes its internal BZ delineation in 2021.

Bidding Zone Configuration 2019/2020

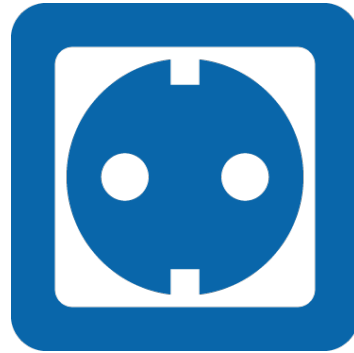


Source: ENTSO-E

Bidding Zone Configuration 2021



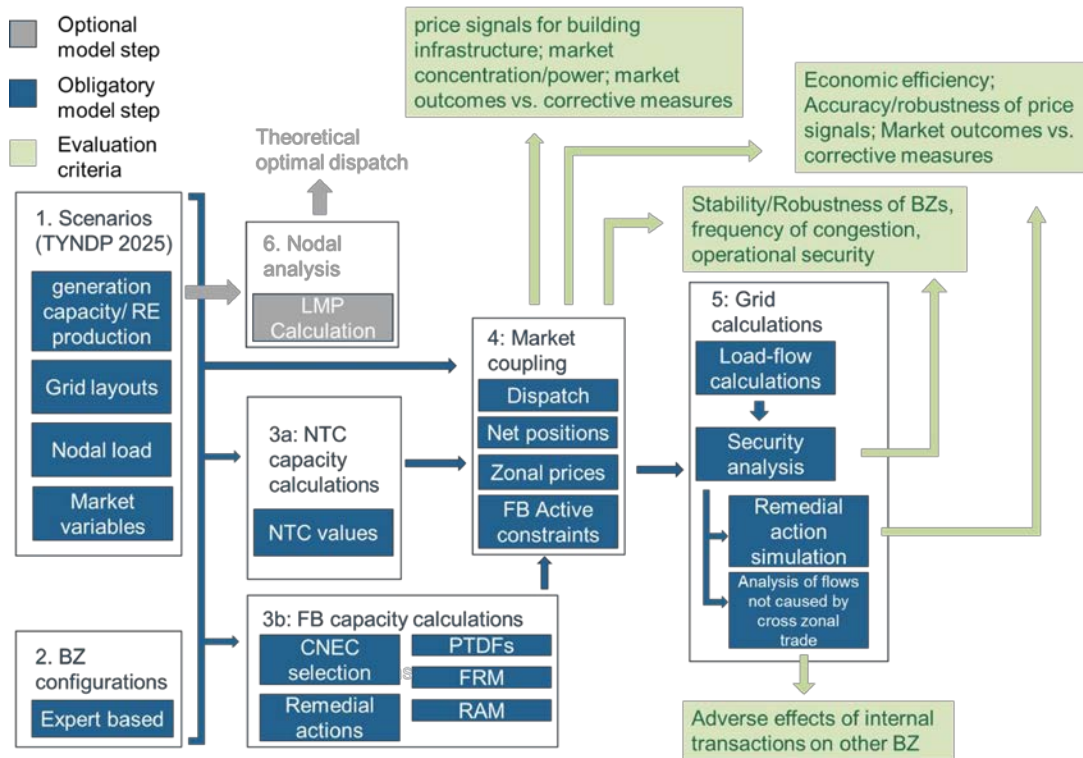
- Italy is set to change its internal BZ borders in 2021 following a BZR performed within Italy
- Major changes:
 - Virtual zones are removed
 - Changes on CNORD-CSUD
 - New bidding zone CALA with borders
 - CALA-SUD
 - CALA-SICI



Steps in Bidding Zone Review Process

Proposed Simulation Process

Essential steps: Capacity calculation, market coupling and security analysis.



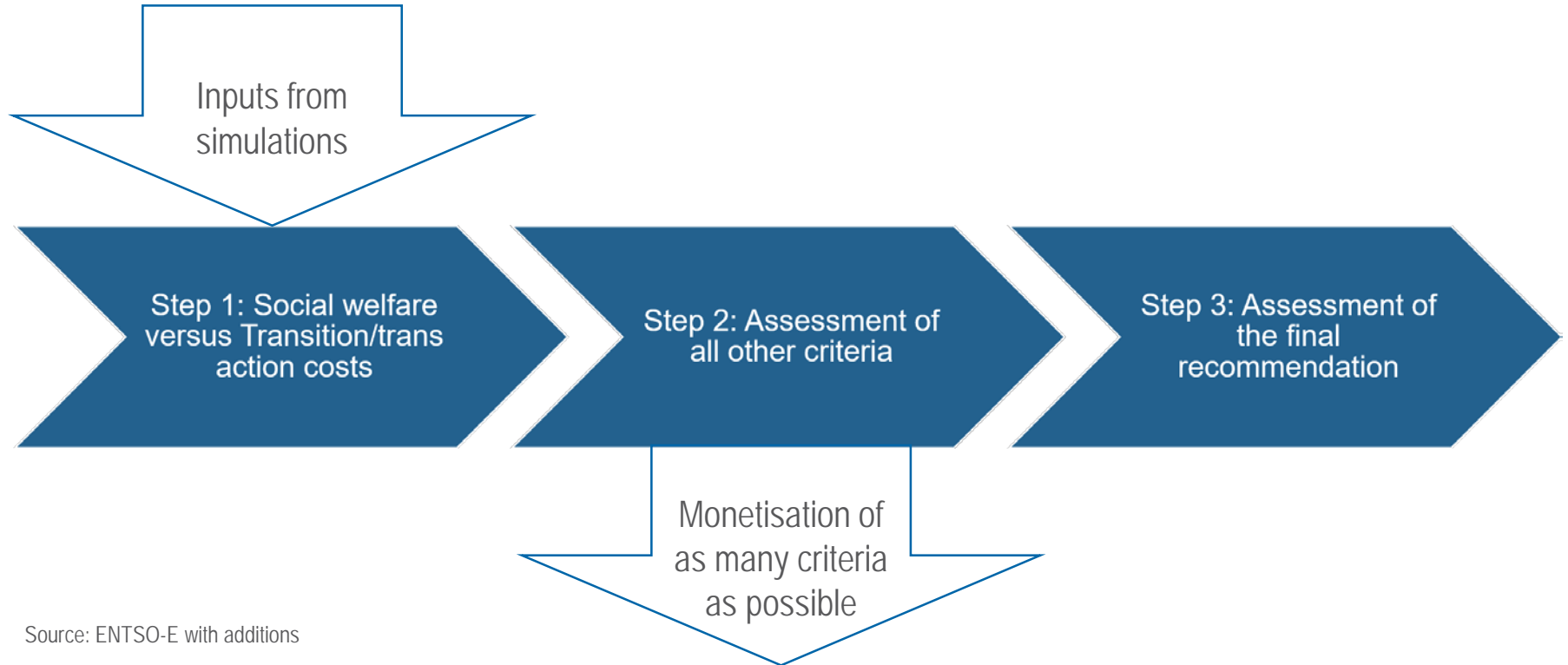
Modelling and simulation chain:

- Inputs
 - Generation
 - Load
 - Grid
 - BZ configuration
- Capacity calculation
 - Flow-based or CNTC
- Market Coupling
- Security analysis
 - Optimisation of remedial actions
 - Assessment of redispatch needs in terms of MWh and €

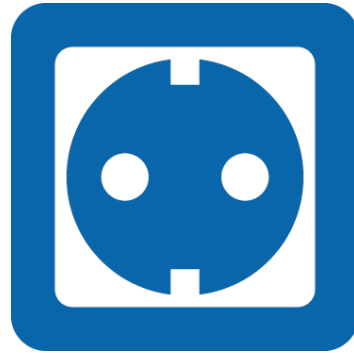
Source: ENTSO-E

Path to Final Recommendation

Simulations first. Then, assess criteria. Finally, make recommendations.



Source: ENTSO-E with additions



Upcoming Bidding Zone Review Process

- Grid data based on TYNDP 2020 with reference grid 2025
- One representative weather year to be selected
- Input from Pan-European Market Modelling Data Base regarding:
 - Load
 - Generation
- Generation and load to be disaggregated to allow for computation of LMPs
- Fuel and CO₂ prices based on the data collected for the TYNDP 2020
- Sensitives can be analyzed with respect to any input data

BZR Regions

Proposal from ENTSO-E/TSOs to conduct BZR in several regions.

- ENTSO-E/TSOs propose to conduct BZR process in several regions (BZ Regions)
- Regions are remotely aligned with capacity calculation regions
- (More closely aligned with proposed System Operation Regions)
- Regions may take into account regional characteristics (e.g. grid topology)
- Risk that market coupling simulations would be impacted, as market coupling is pan-EU task



Source: ENTSO-E

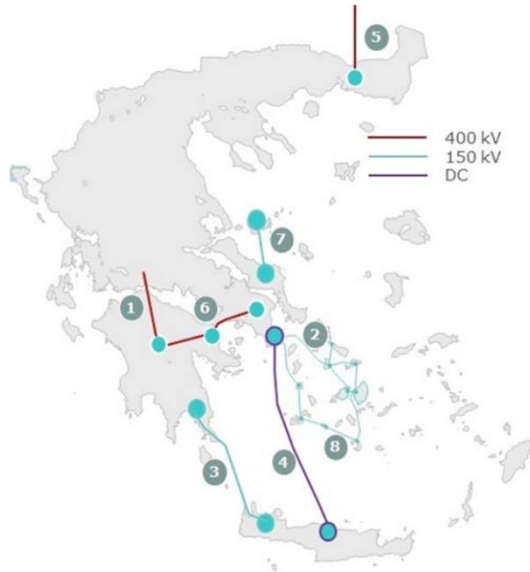
BZR Regions and Alternative Configurations

Most BZR regions do not propose alternative BZ configurations. Proposal incomplete?

BZRR	BZ included	Alternative configurations
Central Europe	FR, BE, NL, DE/LU, AT, CZ, PL, SK, HU, SI, HR, RO, DK1, CH, IT1	No configurations proposed, but individual justifications and proposals sent for information
Nordic	FI, SE1, SE2, SE3, SE4, NO1, NO2, NO3, NO4, NO5, DK2	Yes. 3 alternative configurations proposed
SEE	BG, GR	Yes. 1 alternative configuration proposed
Central Southern Italy	IT2, IT3, IT4, IT5, IT6,	No. A BZ Review pursuant to CACM Regulation has been completed in 2018. New configurations being implemented in 2019 and 2021.
Iberian Peninsula	ES, PT	No. Iberian Peninsula Status Quo is recommended as no internal structural congestions exist
Baltic	EE, LV, LT	No. Baltic Bidding zones are not impacting other bidding zones with unscheduled flows and has no internal structural congestion inside bidding zones.
Ireland	SEM (IE, NI)	No. Cross-border capacity (via HVDC) is only reduced by exception. Time is also required to analyse data from our new market design.
UK	GB	No. Cross border capacity is only reduced by exception, and internal congestion is a transient accepted feature of efficient GB market.

Alternative Configurations – Formally Submitted

Nordics and SEE proposed alternative configurations.



- Formally submitted configurations to be studied:
 - Changes in BZ delineation in Sweden and Norway
 - New BZB within Greece



Source: ENTSO-E

Alternative Configurations – Informally Submitted

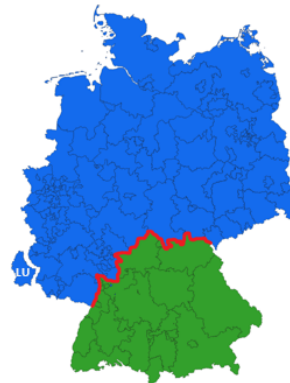
Central Europe TSOs could not agree on any alternative configurations. Submitted for information only.

- Informally submitted configurations for information only:
 - Split of the Netherlands in several BZs
 - Split of Germany in several BZs
 - Merge Germany and Austria



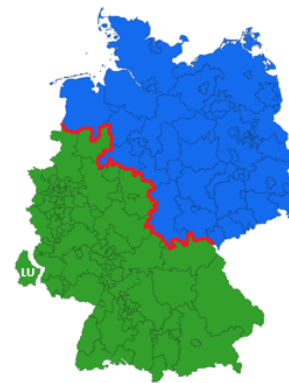
Source: ENTSO-E

Configuration 1



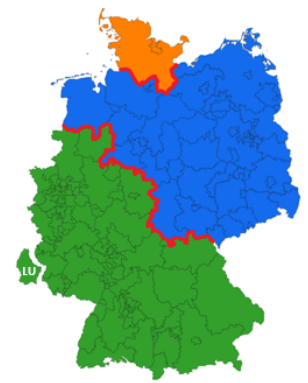
Proposal from BZR1

Configuration 2

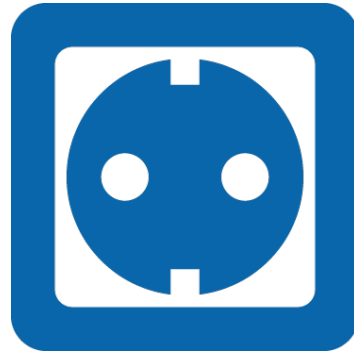


Published in the
„Energiewirtschaftlichen Tagesfragen“

Configuration 3



Schleswig-Holstein as own
Bidding Zone



Outlook on Upcoming Bidding Zone Review Process

Process and Next Steps

Unclear way forward after submission of BZR package.

- Currently discussions among Regulatory Authorities on whether submissions should be deemed as incomplete
- If referred to ACER, ACER has three months for a decision (Article 14(5))
- Maximum duration of 12 months after proposal has been approved (Article 14(6))

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