ACER Decision on the methodology and assumptions that are to be used in the bidding zone review process and for the alternative bidding zone configurations to be considered: Annex Ia

List of minimum data to be published

24 November 2020

At least the following data shall be published in accordance with Article 16 of the BZR methodology as per Annex I of Decision No 29/2020:

A. Input data

Where the same input data, or the same assumptions, and disaggregation methods per node are not used for both the modelling chain to assess BZ configurations and for the LMP simulations, any differences between these two set of simulations shall be highlighted when publishing the input data.

1. **Scenario (Article 4)**

   a. List of all climate years used as a basis for the study.

   b. Description of the sensitivities used to complement the scenario of the 'main study'.

   c. Network model for the scenario and sensitivities[1].

   d. List of additional infrastructure projects for the target year compared to the year when the BZR starts. Alternatively, the main changes applied to the TYDNP latest available reference grid model, if the latter is used as a starting point to reflect the target year.

   e. Assumptions on how different voltage levels were considered or not, per bidding zone.

2. **Generation**

Data item	Level of granularity[2]	Corresponding article in the methodology
a. Generation time series for weather-dependent generation units	Climate year, MTU, generation unit (or the maximum level of disaggregation available)	Article 4
b. Minimum and maximum generating capacities	Generation unit	Article 4
c. Must-run constraints	Generation unit	Article 4
a. Ramping capabilities	Generation unit	Article 4
b. Minimum run-time	Generation unit	Article 4
c. Start-up and shut-down times	Generation unit	Article 4

---

[1] Individual TSOs may withhold the information on network models if it is classified as sensitive critical infrastructure protection related information in their Member States as provided for in point (d) of Article 2 of Council Directive 2008/114/EC of 8 December 2008 on the identification and designation of European critical infrastructures and the assessment of the need to improve their protection. In such a case, the information on network models shall be replaced with an anonymous identifier which shall be stable across all MTUs and all network models used throughout the BZR.

[2] Generation and load data shall at least be published with a level of aggregation per technology and per bidding zone. Upon request, the level of granularity described in the respective generation and load tables shall apply.

d.	Start-up costs	Generation unit	Article 7, 9
e.	Breakdown of short-run marginal costs used for the market dispatch, including at least fuel costs, CO_2 costs and variable operation and maintenance costs	Generation unit	Article 7, 9
f.	Additional costs used for the redispatching mechanism including specific opportunity costs, readiness costs and any other cost related to the participation to redispatching	Generation unit	Article 7, 9

3. **Load**

Data item	Level of granularity	Corresponding article in the methodology
a. Load time series	Climate year	Article 4
b. Day-ahead demand elasticity[3].	Implicit DSR, bidding zone	Article 4
c. Maximum power [MW] which may respond	Explicit DSR unit	Article 4
d. Minimum price [€/MWh] at which the response is triggered	Explicit DSR unit	Article 4
e. Maximum activation duration [h]	Explicit DSR unit	Article 4
f. Maximum activated energy per day [MWh]	Explicit DSR unit	Article 4
g. Average amount of DSR [MW] available for the market dispatch	Bidding zone	Article 7
h. Average amount of explicit DSR [MW] not available for redispatching after considering market dispatch and technical constraints	Bidding zone	Article 9
i. Average amount of DSR [MW] available for neither of them	Bidding zone	Article 4,7,9

4. **Reserves (Article 4)**

    a. Per reserve type, per technology and per bidding zone:

        i. FCR requirement [MW];

---

[3] In case of several elasticities, also price ranges for which each elasticity value applies.

        ii.   FRR requirement [MW]; and

        iii.   RR requirement [MW]

5. **Capacity calculation (Article 6)**

    a. Capacity calculation methodology per border.

    b. List of action plans and derogations for the target year considered pursuant to the IME Regulation.

    c. Average FRM over all CNECs, per BZ.

    d. PTDF thresholds used by each TSO and, if different from default value, why the adopted threshold better reflects an economic efficiency analysis.

    e. Allocation constraints per border/BZ.

6. **Miscellaneous**

    a. List and brief description of the main characteristics of the modelling tools used for the analysis.

    b. All other assumptions and parameters set at pan-European or BZRR level with an impact on the results of the BZR.

B. Output data

Output data shall be published for each BZ configuration, including the status quo.

1. **Capacity calculation (Article 6)**

Data item	Level of granularity
a. NTC value [MW] per direction	Scenario, NTC BZ border and MTU
b. List of CNECs with zonal PTDFs and RAM	Scenario, flow-based BZ border and MTU
c. Allocation constraints	Scenario, BZ border and MTU
d. List of remedial actions applied during capacity calculation and the network model resulting from their implementation	Scenario, BZ border and MTU

2. **Day-ahead market dispatch (Article 7)**

Data item	Level of granularity
a. The total socio-economic welfare [€]	The whole EU, MTU
b. The utility of supplied demand [€]	The whole EU, MTU
c. The total generation cost [€]	The whole EU, MTU
d. The overall congestion revenue [€]	The whole EU, MTU

e. The production [MW]	The whole EU, MTU, generation unit
f. Average amount of generation [MW] available for the market dispatch	Bidding zone
g. Average amount of generation [MW] not available for redispatching after considering market dispatch and technical constraints	Bidding zone
h. Average amount of generation [MW] available for neither of them (e.g. due to mothballing or planned maintenance)	Bidding zone
i. The injection or withdrawal [MW]	The whole EU, MTU, storage unit
j. The activated DSR [MW]	The whole EU, MTU, DSR unit
k. The change in load due to demand elasticity [MW]	The whole EU, MTU
l. The amount of load-shedding [MW]	Bidding zone, MTU
m. The short-run marginal cost [€/MWh]	Bidding zone, MTU
n. The net positions [MW]	Bidding zone, MTU
o. The cross-zonal exchange [MW]	The whole EU, MTU, bidding zone border
p. The flow [MW] and the shadow price [€/MW]	The whole EU, MTU, CNEC

3. **Operational security analysis (Article 8)**

Data item	Level of granularity
a. The precise network configuration(s) when the violation occurs	Scenario, MTU and violation of an OSL
b. The kind of OSL violated	Scenario, MTU and violation of an OSL
c. The network element affected by the violation	Scenario, MTU and violation of an OSL
d. The OSL of the network element	Scenario, MTU and violation of an OSL
e. The value of the violation	Scenario, MTU and violation of an OSL

4. **Remedial action optimisation (Article 9)**

Data item	Level of granularity
a. The additional cost from the RAO	Scenario, geographic scope and day

b. The cost of ensuring availability of redispatching units	Scenario, geographic scope and day
c. The total upward dispatch change [MW]	Scenario, geographic scope of the RAO and MTU
d. The total downward dispatch change [MW]	Scenario, geographic scope of the RAO and MTU
e. The new dispatch [MW] and the change in dispatch [MW]	Scenario, geographic scope of the RAO, MTU and unit
f. The new net position [MW]	Scenario, geographic scope of the RAO, MTU and bidding zone
g. The network model updated to include all preventive remedial actions	Scenario, geographic scope of the RAO and MTU

5. LMP analysis (Article 11)

Data item	Level of granularity
a. Nodal price [€/MWh]	Node, MTU
b. Cleared generation, storage and demand volumes [MW]	Node, MTU
c. Flows on all considered network elements [MW]	MTU
d. Active network constraints	MTU
e. Shadow prices associated to the active network constraints [€/MW]	MTU
f. Overall socio-economic welfare [€]	MTU

6. **Results of the evaluation, for each indicator and criterion assessed in the BZR (Article 15)**

7. **Outcome of the BZR (Article 13)**

    a. Final results consolidated in one joint report for all BZRRs.

    b. Results of the sensitivity analyses.