European Network of
Transmission System Operators
for Electricity

entsoe

Detailed Data Descriptions

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1. Scope and Purpose

The Detailed Data Description specifies the details and format of the submission of data in accordance with Article 5(1)(a) of the Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets from here on for the purpose of this document, called the Transparency Regulation.

2. Definitions

For the purpose of the Manual of Procedure, the definitions established in the Union legislation apply, i.e. definitions established in the Directive 2009/72/EC, in Regulation (EC) N° 714/2009, in Commission Regulations establishing network codes that have been adopted according to Article 6(11) of Regulation (EC) N° 714/2009 and in the Transparency Regulation.

Only the terms used in this document and not defined in other references are described below.

Actual net generation	The actual output, expressed in megawatts (MW), that a generation unit is feeding into the transmission/distribution system.
Available generation capacity	The maximum output, expressed in megawatts (MW), that a generation unit is able to supply to the system at a given time, adjusted for ambient conditions or partial outage of the generation unit.
Flow based parameters	Art. 2 (definitions) of the Transparency Regulation states: 'flow based parameters' mean the available margins on critical network elements with associated power transfer distribution factors; ENTSO-E, by way of exception, also provides the following clarification to facilitate publications: Non-redundant flow-based parameters containing power transfer distribution factor (PTDF) matrix with physical margins (MW) available for the market/allocation associated to the anonymous critical branches per market time unit which represents an exhaustive description of the domain of constraints submitted to the market: Matrix with: Lines : - one for each non redundant critical branch and critical outage determining the FB capacity domain constraint Columns: - column a: column containing the anonymous designation of the critical branch / critical outage - column b: the limiting situation (N or N-x,.. situation) ,

	- column c: containing the remaining physical margin on critical branch / critical outage available for allocation (RAM)
Frequency Containment Reserve (FCR)	Means the operating reserves necessary for constant containment of frequency deviations (fluctuations) from nominal value in order to constantly maintain the power balance in the whole synchronously interconnected system. Activation of these reserves results in a restored power balance at a frequency deviating from nominal value. This category typically includes operating reserves with the activation time up to 30 seconds. Operating reserves of this category are usually activated automatically and locally.
Frequency Restoration Reserve (FRR)	Means the operating reserves used to restore frequency to the nominal value and power balance to the scheduled value after sudden system imbalance occurrence. This category includes operating reserves with an activation time typically up to 15 minutes (depending on the specific requirements of the synchronous area). Operating reserves of this category are typically activated centrally and can be activated automatically or manually. In these Framework Guidelines, automatically activated reserves refer to reserves activated by an automatic controller.
Identification of the assets	National code or EIC (in case of the transparency platform)
Impact on interconnection capacity	The impact is interpreted as: – a value) of net cross-zonal transfer capacity (MW) in case of NTC allocation method to be described per direction between bidding zones or control areas between member states where cross zonal allocation do exist; or – a set of flow based parameters in case of flow based allocation method, which reflects topology and operational conditions within interconnected grids at a given time. Note 1: For NTC method the impact may be represented by multiple values (e.g. time series or as a range) over a given period of time. Note 2: For regions where flow-based allocation method is applied, the impact of unavailability of the transmission infrastructure is included in the flow-based parameters. Note 3: Complementary information of cross-zonal capacity forecast provided under year-, month-, quarterly-, week-ahead and day-ahead NTC (the last being an optional publication) shall be considered as complementary information to provide market participants with all relevant information to assess a transmission asset outage impact.

Installed gross capacity	Installed gross capacity is the maximum capacity measured at the generation unit output
Installed net generation capacity	The maximum output, expressed in megawatts (MW), that a generation unit would be able feed into to the system
Location for consumption and generation unit	Location is interpreted as bidding zone
Location for transmission unit	Location is interpreted as whether a transmission unit is located between bidding zones or inside a bidding zone – cross-zonal – intra-zonal
Maintenance and Overhauls	This category aggregates scheduled unavailability of generating capacity for regular inspection and maintenance.
Non-Usable capacity	Aggregated reduction of the net generating capacities because of various causes, including, but not limited to – **Limitation because of intentional decision by the power plant operators** – Power stations in mothballs that may be recommissioned if necessary – Power stations bound by local authorities that are not available for interconnected operation – Power stations under construction whose commissioning is scheduled for a certain date, but capacity is not firmly available because of delays or retrofitting – Power stations that are converted to other fuels or that are equipped subsequently with desulphurization and denitrification plants – Power stations in test operation – **Unintentional temporary limitation** – Power stations whose output power cannot be fully injected because of transmission constraints – Power stations in multiple purpose installations where the electrical generating capacity is reduced in favour of other purposes, such as heat extraction in combined heat and power plants for example – **Temporary limitation because of constraints, such as power stations in mothballs or test operations, heat extraction for CHPs** – **Limitation because of fuel constraints management** – Nuclear power stations in stretch-out operation – Fossil fuel power stations

	– Power stations with interruptible fuel supply – Power stations with poor quality fuel, such as unfit coal **Limitation reflecting the average availability of the primary energy source** – Hydro power stations – Run-of-river power stations with usual seasonal low upstream water flow – Tidal power stations Storage power stations subject to usual limitation such as limited reservoir capacity, power losses because of high water, loss of head height or limitation of the water, loss of head height or limitation of the downstream water flow – Wind power stations – Photovoltaic power stations – Geothermal power stations – **Power stations with output power limitation because of environmental and ambient constraints** – **Limitation because of other external constraints** – Hydro power stations with water flow regulation for irrigation, navigation, tourism – Power stations with output power limitation because of environmental constraints Power stations with output power limitation because of external thermal conditions
NTC	The technical term for transmission capacity which should be published according to paragraph (5) of Annex I of Regulation (EC) 714/20092. Net Transfer Capacity is defined as NTC = TTC-TRM and corresponds to the maximum exchange between two bidding zones

3. Details and format of the submission of data

The detailed data descriptions distinguishes four categories of data (load, generation, transmission and balancing) to be reported under the Transparency Regulation and includes data on unavailability under each of these categories.

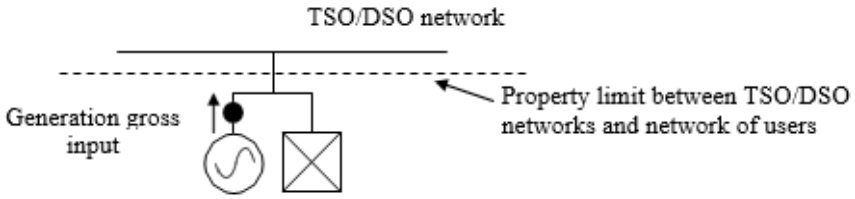
The information provided in H+1 has to be considered as operational data available from systems, information coming as raw metering data, which can be potentially updated based on more accurate metering data, for the sake of precision.

3.1 Preliminary notes for the descriptions

I. ‘Regulation Article’ refers to the Article of the Transparency Regulation.
II. ‘Regulation text’ refers to the relevant text of the Article of the Transparency Regulation referred under ‘I’.
III. ‘Detailed description’ provides a more detailed explanation of the definition when necessary.
IV. ‘Specification of calculation’ details the method of calculation or specific definition of the values required for the calculation.
V. ‘Primary owner of the data’ specifies the primary owner of the data. Primary owners of the data shall use the best available data available at the time of data provision.
VI. ‘Data Provider’ specifies the responsible entity for submission of the data.
VII. ‘Aggregation’ defines the method of aggregation if required.
VIII. ‘Publication deadline for ENTSO-E’ is the time by which the data or information should be published as defined in the Transparency Regulation.
IX. ‘Updates’ defines if an update of information is possible.
X. ‘Comments’ include additional relevant information.

3.2 Information on total load

Total load per bidding zone per market time unit	
Regulation Article	6.1.a and 6.2.a
Regulation text	For their control areas, TSOs shall calculate and submit the following data to the ENTSO for Electricity for each bidding zone: (a) the total load per market time unit; ... shall be published no later than one hour after the operating period.
Detailed description	Actual total load per bidding zone per market time unit, the total load being defined as equal to the sum of power generated by plants on both TSO/DSO networks, from which the following is deduced: - the balance (export-import) of exchanges on interconnections between neighbouring bidding zones. - the power absorbed by energy storage resources. The information shall be published at the latest H+1 after the end of the operating period.
Specification of calculation	- Average of real-time load values per bidding zone per market time unit. - Actual total load (including losses without stored energy) = net generation – exports + imports – absorbed energy - Net generation should be used. If a net generation output is not known, it shall be estimated. - Absorbed energy is also provided as separate information in Article 16.1.b with the aggregated generation output of the hydro pumped storage. - The physical flow on the tie line is measured as agreed by neighbouring TSOs or bidding zones, where applicable.
Primary owner of the data	TSO for import-export + generation units for generation and absorbed energy.
Data provider	By default, TSO. All generation units and DSOs in the control area of the TSO are obliged to make data available to TSO.
Publication deadline for ENTSO-E	Publication based on market time unit. At the latest H+1 after the end of the operating period (of one market time unit length).
Updates	Not obligatory but possible.

Comments	▪ Net or gross generation? – In case of power plants net generation should be taken (auxiliary supply should not be considered).  - On consumption site when both generation and consumption process exist gross generation should be taken.

Day-ahead forecast of the total load per market time unit	
Regulation Article	6.1.b and 6.2.b
Regulation text	For their control areas, TSOs shall calculate and submit the following data to the ENTSO for Electricity for each bidding zone: (b) a day-ahead forecast of the total load per market time unit; ... shall be published no later than two hours before the gate closure of the day-ahead market in the bidding zone and be updated when significant changes occur;
Detailed description	A day-ahead forecast of the total load per market time unit per bidding zone at the latest two hours before the gate closure time of the day-ahead market in the bidding zone or at D-1, 12:00 in local time zone of the bidding zone at the latest when gate closure time does not apply. The day-ahead forecast has to be updated, if there are major changes. A major change represents a change of at least 10% of the total load forecast in one market time unit. The primary owners of the data are TSOs and DSOs; The forecast of load: – is given for information purposes only. – is drawn up, among other things, on the basis of meteorological data ahead of time. It is therefore likely to change in shape and level. Note: The day-ahead forecast is calculated (estimated) on the historic load profile on similar days, taking into account the variables that affect electricity demand, such as weather conditions, climate and socioeconomic factors.
Specification of calculation	Day-ahead forecast of total load per market time unit per bidding zone.

Primary owner of the data	TSO and DSOs.
Data provider	TSO by default.
Publication deadline for ENTSO-E	Publication is necessary in due time for the negotiation of all transactions: D-1, at the latest 2 hours before the gate closure time of the day-ahead market in the bidding area. If the gate closure doesn't exists in the bidding area then the publication time is D-1, at 12:00 in local time zone.
Updates	The day-ahead forecast has to be updated, if there are major changes. A major change represents a change of at least 10% of the total load forecast in one market time unit.

Week-ahead total load forecast per day	
Regulation Article	6.1.c and 6.2.c
Regulation text	For their control areas, TSOs shall calculate and submit the following data to the ENTSO for Electricity for each bidding zone: (c) a week-ahead forecast of the total load for every day of the following week, which shall for each day include a maximum and a minimum load value; … shall be published each Friday no later than two hours before the gate closure of the day-ahead market in the bidding zone and be updated when significant changes occur.
Detailed description	A week-ahead forecast of the total load per bidding zone per day, for every day of the coming week W maximum and minimum load values (14 individual data), each Friday at the latest two hours before the gate closure time of the day-ahead market in the bidding zone or at 14:00 in local time zone of the bidding zone when gate closure hour doesn't apply. A week starts on Monday 00:00 hrs and ends on Sunday at 24:00 hrs (in accordance with ISO 8601). Week-ahead estimated loads shall be updated, if there are major changes. A major change represents a change of at least 10% of the total load forecast per market time unit. The primary owners of the data are TSOs and DSOs; Nevertheless, the forecast of load of the following week is given: – for information purposes only. – It is drawn up, among other things, on the basis of weather forecast ahead of time. It is therefore likely to change considerably in shape and level. Note: The week-ahead forecast is calculated (estimated) on the historic load profile on similar days, taking into account the variables that affect electricity demand, such as weather conditions, climate and socioeconomic factors.

	Note 2: Higher resolution is allowed. Highest resolution is MTU. In that case, the maximum and minimum load values for each day will be published.
Specification of calculation	Maximum and minimum load value per bidding zone per day.
Primary owner of the data	TSO and DSOs.
Data provider	TSO by default.
Publication deadline for ENTSO-E	Publication is necessary in due-time for the negotiation of all transactions: Friday W-1, 2 hours before the gate closure or at 14:00 in local time zone if gate closure hour doesn't exists.
Updates	The week-ahead forecast should be updated in case of changes.

Month-ahead total load forecast per week	
Regulation Article	6.1.d and 6.2.d
Regulation text	For their control areas, TSOs shall calculate and submit the following data to the ENTSO for Electricity for each bidding zone: (d) a month-ahead forecast of the total load for every week of the following month, which shall include, for a given week, a maximum and a minimum load value; … shall be published no later than one week before the delivery month and be updated when significant changes occur;
Detailed description	A month ahead forecast of the total load per bidding zone, for every week of the coming month M, maximum and minimum load values. The primary owners of the data are TSOs and DSOs; This shall be published one week before the first day of the month which the data refers to. The week is in the month if the Monday is in the month Nevertheless, the forecast of load for the following month is based on historical load values. A more detailed forecast is provided for the coming week, when precise weather forecasts are available. It may, therefore, vary significantly in terms of both shape and level. Note: The month-ahead forecast is calculated (estimated) on the historic load profile on similar days. Note 2: Higher resolution is allowed. Highest resolution is MTU. In that case, the maximum and minimum load values for each week will be published.
Specification of calculation	Maximum and minimum load value per bidding zone per week
Primary owner of the data	TSO and DSOs.
Data provider	TSO by default.

Publication deadline for ENTSO-E	Publication is necessary in due time for the negotiation of all transactions: one week before the first day of the month which the data refers to.
Updates	The month-ahead forecast should be updated in case of changes.

Year-ahead total load forecast per week	
Regulation Article	6.1.e and 6.2.e
Regulation text	For their control areas, TSOs shall calculate and submit the following data to the ENTSO for Electricity for each bidding zone: (e) a year-ahead forecast of the total load for every week of the following year, which shall for a given week include a maximum and a minimum load value. … shall be published no later than the 15th calendar day of the month before the year to which the data relates.
Detailed description	A year-ahead forecast of the total load per bidding zone for the following year, for every week of the coming year Y maximum and minimum load values. The primary owners of the data are TSOs and DSOs; This shall be published at the latest the 15th calendar day of the month just before the rolling year which data refers to. The week with the first Thursday in the year is considered as Week Number 1 in the year (ISO 8601). Nevertheless, the forecast of load for the following year is based on historical load values. A more detailed forecast is provided later, when precise weather forecast (weekly, daily) is available. It may, therefore, vary significantly in terms of both shape and level. Note: The year-ahead forecast is calculated (estimated) on the historic load profile on similar days. Note 2: Higher resolution is allowed. Highest resolution is MTU. In that case, the maximum and minimum load values for each week will be published.
Specification of calculation	Maximum and minimum load value per bidding zone per week.
Primary owner of the data	TSO and DSOs.
Data provider	TSO by default.
Publication deadline for ENTSO-E	Publication is necessary in due-time for the negotiation of all transactions: at the latest 15th calendar day of the month just before the rolling year which data refers to.
Updates	The year-ahead forecast should be updated in case of changes.

3.3 Information relating to the unavailability of consumption units

Planned unavailability of consumption units	
Regulation Article	7.1.a, 7.2 and 7.3
Regulation text	a) The planned unavailability of 100 MW or more of a consumption unit, including changes of 100 MW or more in the planned unavailability of that consumption unit, lasting at least one market time unit, specifying – bidding zone; – available capacity per market time unit during the event; – reason for the unavailability; and – the estimated start and end date (day, hour) of the change in availability. The information laid down in point (a) of paragraph 1 shall be published in aggregated form per bidding zone indicating the sum of unavailable consumption capacity per market time unit during a given period as soon as possible but no later than one hour after the decision regarding the planned unavailability is made.
Detailed description	For submission, not for publication; Scheduled unavailability (including maintenance and other works) of significant consumption units (100 MW or more) per bidding zone, including information on: – Code of the consumption unit (EIC code or other); – Code of the bidding zone (EIC code or similar); – Unavailable consumption capacity per market time unit during the event; – Reason for the unavailability; – Start and estimated stop date (dd.mm.yy hh:mm) of the unavailability; – Remarks or additional information. A consumption unit is considered as being significant if the available consumption capacity is decreased by more than 100 MW during more than one market time unit.
Specification of calculation	Unavailable consumption capacity per market time unit. The Data Provider sends the unavailability with the exact start time and end time and the transparency platform calculates the start time and end time of the market time unit with the rules below. In case the submission of start and stop dates does not contain information of minutes, they should be considered equal to zero.

	If unavailability starts in the middle of a market unit the start time should be rounded to the start of the market time unit. If unavailability finishes in the middle of a market unit the end time should be rounded to the end of the market time unit.
Primary owner of the data	Owner of consumption unit to which scheduled unavailability refers.
Data provider	TSO
Aggregation	For publication, the transparency platform will aggregate information received from TSOs. The information shall be published in aggregated form per bidding zone indicating the sum of unavailable consumption capacity per market time unit during a given period.
Publication deadline for ENTSO-E	The information shall be published as soon as possible and at the latest H+1 after the decision is made.
Updates	At the latest H+1 after changes are known.

Actual availability of consumption units	
Regulation Article	7.1.b, 7.2 and 7.3
Regulation text	(b) Changes in actual availability of a consumption unit with a power rating of 100 MW or more, specifying – bidding zone; – available capacity per market time unit during the event; – reason for the unavailability; – the start date and end date (day, hour) of the change in availability. ... The information laid down point (b) of paragraph 1 shall be published in aggregated form per bidding zone indicating the sum of unavailable consumption capacity per market time unit during a given period as soon as possible but no later than one hour after the change in actual availability.
Detailed description	For submission, not for publication; Information on the changes of actual consumption availability of significant consumption units (over 100 MW) per bidding zone, including information on: – Code of the consumption unit (EIC code or similar); – Code of the bidding zone (EIC code or similar); – Unavailable consumption capacity per market time unit during the event;

	– Reason for the unavailability; – Start and estimated stop time (dd.mm.yy hh:mm) of the unavailability. (optionally, a TSO may not send minutes); – Remarks or additional information. A consumption unit is considered as being significant if the available consumption capacity is decreased by more than 100 MW during more than one market time unit.
Specification of calculation	Unavailable consumption capacity per market time unit. The Data Provider sends the unavailability with the exact start time and end time and the transparency platform calculates the start time and end time of the market time unit with the rules below. In case the submission of start and stop dates does not contains information of minutes, they should be considered equal to zero. If unavailability starts in the middle of a market unit the start time should be rounded to the start of the market time unit. If unavailability finishes in the middle of a market unit the end time should be rounded to the end of the market time unit.
Primary owner of the data	Owner of consumption unit to which change in actual availability refers.
Data provider	TSO
Aggregation	For publication, the transparency platform will aggregate information received by TSO. The information shall be published in aggregated form per bidding zone indicating the sum of unavailable consumption capacity per market time unit during a given period.
Publication deadline for ENTSO-E	H+1 after the change (if applicable).
Updates	At the latest H+1 after the change in actual availability, if applicable.

3.4 Year ahead forecast margin

Year-ahead forecast margin	
Regulation Article	8.1 and 8.2

Regulation text	For their control areas, TSOs shall calculate and provide for each bidding zone the year-ahead forecast margin evaluated at local market time unit to the ENTSO for Electricity. The information shall be published one week before the yearly capacity allocation but no later than the 15th calendar day of the month before the year to which the data relates. Generation units and DSOs, located within a TSO's control area shall provide that TSO with any relevant information required to calculate the data referred to in paragraph 1. Generation units and DSOs shall be considered as primary owners of the data they submit.
Detailed description	A year-ahead forecast margin, which is defined as the difference between yearly forecast of available generation capacity and yearly forecast of total load, taking into account the forecast of total generation capacity, forecast of availability of generation and forecast of reserves contracted for system services.
Specification of calculation	A year-ahead forecast margin (“remaining capacity”) is calculated as the difference between yearly forecast of Reliable Available Capacity and yearly forecast of Total Load. The Reliable Available Capacity (RAC) is the difference between the net generating capacity (NGC) and the Unavailable Capacity (UC). The UC consists of Non-Usable Capacity, Maintenance and Overhauls, Outages and System Services Reserve. Load and reliable available generation capacity have to be considered per bidding zone, evaluated at local market time unit of annual maximum load. There is one value to be published for the whole year.
Primary owner of the data	TSO and DSO for total load forecast. Owners of generation units for installed capacity and availabilities. TSO for the calculated data.
Data provider	TSO by default.
Aggregation	In case of multiple TSOs in a single bidding zone the TSOs should agree on which MTU they are calculating the yearly forecast margin. In addition to the aggregated value, TSOs may also publish their separate values on the transparency platform.
Publication deadline for ENTSO-E	One week before yearly capacity auction, at the latest on the 15th calendar day of the month before the year which data refers to.

Updates	None

3.5 Transmission infrastructure

Report on developments	
Regulation Article	9.1
Regulation text	TSOs shall establish and provide information on future changes to network elements and interconnector projects including expansion or dismantling in their transmission grids within the next three years, to the ENTSO for Electricity. This information shall only be given for measures expected to have an impact of at least 100 MW on cross zonal capacity between bidding zones or on profiles at least during one market time unit. The information shall include: (a) the identification of the assets concerned; (b) the location; (c) type of asset; (d) the impact on interconnection capacity per direction between the bidding zones; (e) the estimated date of completion. The information shall be published one week before the yearly capacity allocation but no later than the 15th calendar day of the month before the year to which the allocation relates. The information shall be updated with relevant changes before the end of March, the end of June and the end of September of the year to which the allocation relates.
Detailed description	Annually, the list of expansion and dismantling projects in national transmission grid per bidding zone with the estimated impact (MW) on the interconnection capacity for the next three following years. This information has to be given only for projects with a relevant effect on transfer capability between bidding zones (including technical profiles). A relevant effect is considered to be an effect that equals or exceeds 100 MW at least during one market time unit. Each project - internal network component or interconnector - will be described by the following identification characteristics: - the identification of the assets concerned; - the location; - type of asset; - the estimated impact on interconnection capacity per direction between the bidding zone; - the estimated date of completion; - Any complementary comments (in English).

	The information shall be published one week before the yearly capacity allocation but no later than the 15th calendar day of the month before the year to which the allocation relates. E.g. submission in December of year Y (2015) for a publication scope equal to year Y+1 (2016), year Y+2 (2017) and Y+3 (2018). The information shall be updated with relevant changes before the end of March, the end of June and the end of September of the year to which the allocation relates. A template for the submission of the information requested by the Article 9.1 Transparency Regulation is available in the attachment of the Manual of Procedure.
Specification of calculation	
Primary owner of the data	TSO
Data provider	TSO(s)
Aggregation	The report could be coordinated at an ENTSO-E level.
Publication deadline for ENTSO-E	One week before the yearly capacity auction but no later than the 15th calendar day of the month before the year which the auction relates to.
Updates	To be updated with relevant changes before end of March, end of June and end of September of year Y.

3.6 Information relating to the unavailability of transmission infrastructure

Planned unavailability in the transmission grid	
Regulation Article	10.1.a, 10.2 and 10.4
Regulation text	The planned unavailability, including changes in the planned unavailability of interconnections and in the transmission grid that reduce cross zonal capacities between bidding zones by 100 MW or more during at least one market time unit, specifying: – the identification of the assets concerned; – the location; – the type of asset; – the estimated impact on cross zonal capacity per direction between bidding zones; – reasons for the unavailability; – the estimated start and end date (day, hour) of the

Regulation text	– change in availability. The information laid down in point (a) of paragraph 1 shall be published as soon as possible, but no later than one hour after the decision regarding the planned unavailability is made … TSOs may choose not to identify the asset concerned and specify its location 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/EC2. This is without prejudice to their other obligations laid down in paragraph 1 of this Article.
Detailed description	(a)The planned unavailability, including changes in the planned unavailability of interconnections and in the transmission grid that reduce transfer capacities between bidding zones by 100 MW or more during at least one market time unit, specifying: For a given border and direction: – the estimated impact on interconnection capacity – the estimated start and end date (day, hour) of the change in availability. In some cases, this can be a repeated time interval pattern For a given NTC and period, the asset or the list of assets causing the reduction of cross-zonal capacity must be given. Each asset must contain the following information – the identification of the assets concerned,; In some cases, this can be a list of affected assets when the particular asset to be maintained is not known before (e.g. for parallel – tie-lines) Note: Data Provider shall indicate if it should be published or not – the location; Note: Data Provider shall indicate if it should be published or not; – the type of asset,; Note: Data Provider shall indicate if it should be published or not; – reasons for the unavailability; – Comments (in English); – Status of unavailability of the asset. The information shall be published as soon as possible, but no later than one hour after the decision regarding the planned unavailability is made.

Specification of calculation	Example of content for Outage information:
	- Period : start / end date time
	- List of assets (“i.e. assets reducing the capacity”)
	  ○ Asset 1 : asset ID, location, type, reason, status
	  ○ Asset 2 : ..
	- List of impacts (of the above “list of assets”)
	  ○ Border A>B : new NTC (timeserie)
	  ○ …
	  ○ Border C>A : new NTC (timeserie)
	  ○ Border XXX
	- comments

Primary owner of the data	TSO
Data provider	TSO
Aggregation	
Publication deadline for ENTSO-E	Information shall be published as soon as possible, but no later than one hour after the decision regarding the planned unavailability is made
Updates	To be updated with changes, at the latest H+1/ after information is known as confirmed.

Changes in the actual availability of interconnections and the transmission grid	
Regulation Article	10.1.b, 10.3 and 10.4
Regulation text	(b) changes in the actual availability of interconnections and in the transmission grid that reduce cross zonal capacities between bidding zones by 100 MW or more during at least one market time unit, specifying: – the identification of the assets concerned; – the location; – the type of asset; – the estimated impact on cross zonal capacity per direction between bidding zones; – reasons for the unavailability; – the start and estimated end date (day, hour) of the change in availability. The information laid down in points (b) and (c) of paragraph 1 shall be published as soon as possible but no later than one hour after the change in actual availability. …

	TSOs may choose not to identify the asset concerned and specify its location 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/EC2. This is without prejudice to their other obligations laid down in paragraph 1 of this Article.
Detailed description	(b) Changes in the actual availability of interconnections and in the transmission grid that reduce transfer capacities between bidding zones by 100 MW or more during at least one market time unit, specifying: For a given border and direction: - the estimated impact on interconnection capacity; and - the estimated start and end date (day, hour) of the change in availability. For a given NTC and period, the asset causing the reduction or the list of assets causing the reduction of cross-zonal capacity must be given. Each asset must contain the following information - the identification of the assets concerned,; Note: Data provider shall indicate if it should be published or not; - the location; Note: Data provider shall indicate if it should be published or not; - the type of asset,; Note: Data provider shall indicate if it should be published or not; - reasons for the unavailability; - Comments (in English); - Status of unavailability of the asset; Note: in case of unplanned outage , there cannot be status “cancelled”; Note 1: An unplanned outage cannot be transformed into a planned outage. An unplanned outage remains unplanned until the affected asset back in operation. Note 2: If the actual change in availability have been planned and already reported with the correct impact on transfer capacity according to article 10.1.a, TSO will not deliver the data again.

Specification of calculation	Example of content for outage information:
	- Period : start / end date time
	- List of assets (“i.e. assets reducing the capacity”)
	  ○ Asset 1 : asset ID, location, type, reason, status
	  ○ Asset 2 : ..
	- List of impacts (of the above “list of assets”)
	  ○ Border A>B : new NTC (time series)
	  ○ …
	  ○ Border C>A : new NTC (time series)
	  ○ Border XXX
	- comments

Primary owner of the data	TSO
Data provider	TSO
Publication deadline for ENTSO-E	At the latest H+1 after the change in actual availability.
Updates	Update as soon as there is a modification of the information of the first publication.

Unavailability of offshore infrastructure	
Regulation Article	10.1.c
Regulation text	(c) Changes in the actual availability of off-shore grid infrastructure that reduce wind power feed-in by 100 MW or more during at least one market time unit, specifying - the identification of the assets concerned; - the location; - the type of asset; - the installed wind power generation capacity (MW) connected to the asset; - wind power fed in (MW) at the time of the change in the availability; - reasons for the unavailability; - the start and estimated end date (day, hour) of the change in availability. The information shall be published as soon as possible but no later than one hour after the change in actual availability.

Detailed description	(c) Changes in the actual availability of off-shore grid infrastructure that reduce wind power feed-in by 100 MW or more during at least one market time unit, specifying - the identification of the assets concerned,; - the location; - the type of asset; - The transparency platform will retrieve the installed wind power generation capacity (MW) connected to the asset in its data base; - wind power fed in (MW) at the time of the change in the availability; - reasons for the unavailability; - the estimated or actual start date and estimated end date (day, hour) of the change in availability. The information shall be published as soon as possible but no later than one hour after the change in actual availability.
Specification of calculation	
Primary owner of the data	owner of asset
Data provider	TSOs
Publication deadline for ENTSO-E	At the latest H+1 after the change in actual availability.
Updates	Yes

3.7 Information relating to the estimation and offer of cross zonal capacities

Estimated and offered cross-zonal capacity	
Regulation Article	11.1.a
Regulation text	For their control areas TSOs or, if applicable, transmission capacity allocators, shall calculate and provide the following information to the ENTSO for Electricity sufficiently in advance of the allocation process: - the forecasted and offered capacity (MW) per direction between bidding zones in case of coordinated net transmission capacity based capacity allocation; or - the relevant flow based parameters in case of flow based capacity allocation. TSOs or, if applicable, transmission capacity allocators shall be considered as the primary owners of the information they

calculate and provide.

The information laid down in paragraph 1(a) shall be published as set out in the Annex, i.e.:

Publication of the information referred to in Article 11(2) Capacity allocation period	**Forecasted transfer capacity to be published**	**Offered transfer capacity to be published**
Yearly	One week before the yearly allocation process but no later than 15	One week before the yearly allocation
	December, for all months of the following year.	process but no later than 15 December.
Monthly	Two working days before the monthly allocation process for all days of the following month	Two working days before the monthly allocation process.
Weekly	Each Friday, for all days of the following week	One day before the weekly allocation process
Day-ahead	1 hour before spot market gate closure, for each market time unit.	
Intra-day	1 hour before the first intra-day allocation and then real-time, for each market time unit	

Detailed description

General

- If due to local market rules a cross-zonal capacity for a given bidding zone is calculated for the whole technical profile of this bidding zone, then the cross-zonal capacity between bidding zones is equivalent to the cross-zonal capacity on the technical profile (the same rule applies for estimated and offered capacity)
- Regarding offered capacity, where different products are offered, it should be treated separately (i.e. base, peak, off-peak)

Specific rule for the transparency platform in case of Explicit Auctions:

- Two cases could occur: “normal case” and “cancellation case”. In case of cancellation, an updated auction specification must be sent to the transparency platform with

	• the cancellation information. • By default (without auction specifications), the Offered Capacities and auction results are not expected by the transparency platform (N/A). This should solve the case of shadow auctions which are the back-up of implicit auctions. • The transparency platform will create an auctions calendar in order to know when auction data is expected
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.

Day-ahead flow-based parameters	
Regulation Article	11.1.b
Regulation text	For their control areas TSOs or, if applicable, transmission capacity allocators, shall calculate and provide the following information to the ENTSO for Electricity sufficiently in advance of the allocation process: the relevant flow-based parameters in case of flow based capacity allocation.
Detailed description	the relevant flow-based parameters
Specification of calculation	
Primary owner of the data	TSO
Data provider	TSO, Transmission Capacity Allocator (TCA) or Coordinated Capacity Calculators (CCC) on behalf of TSOs
Aggregation	
Publication deadline for ENTSO-E	One hour before spot market gate closure, for each market time unit.
Updates	

Yearly forecasted cross-zonal capacity	
Regulation Article	11.2 (Publication of info as set out in Annex)
Regulation text	See above

Detailed description	The forecasted NTC (MW) per direction between bidding zones, including technical profiles. only in NTC allocation method, One value (the minimum) per month.
Specification of calculation	Submission of the data can be done with higher time resolution (A higher resolution means that the submission could be done with a more accurate information, E.g. the data provider can send data with the daily resolution even if publication requirement is one value per week) Note: same rule of calculation applies to yearly, monthly, weekly and intermediary such as semestrial
Primary owner of the data	TSO or Coordinated capacity calculator
Data provider	TSO or Coordinated capacity calculator
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	One week before the yearly allocation process but no later than 15 December, for all months of the following year
Updates	Yes

Monthly forecasted cross-zonal capacity	
Regulation Article	11.2 (Publication of info as set out in Annex)
Regulation text	See above
Detailed description	The forecasted NTC (MW) per direction between bidding zones, including technical profiles. only in NTC allocation method One value (the minimum) per day.
Specification of calculation	Submission of the data can be done with higher resolution (A higher resolution means that the submission could be done with a more accurate information, E.g. the data provider can send data with the daily resolution even if publication requirement is one value per week) Note: same rule of calculation applies to yearly, monthly, weekly and intermediary such as semestrial
Primary owner of the data	TSO or Coordinated capacity calculator
Data provider	TSO or Coordinated capacity calculator

Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	2 working days before the monthly allocation process.
Updates	Yes

Weekly forecasted cross-zonal capacity	
Regulation Article	11.2 (Publication of info as set out in Annex)
Regulation text	See above
Detailed description	The forecasted NTC (MW) per direction between bidding zones, including technical profiles. only in NTC allocation method One value (the minimum) per day for all days of the following week.
Specification of calculation	Submission of the data can be done with higher resolution (A higher resolution means that the submission could be done with a more accurate information, E.g. the data provider can send data with the daily resolution even if publication requirement is one value per week). Note: same rule of calculation applies to yearly, monthly, weekly and intermediary such as semestrial.
Primary owner of the data	TSO or Coordinated capacity calculator
Data provider	TSO or Coordinated capacity calculator
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	Each Friday
Updates	Yes

Yearly offered cross-zonal capacity	
Regulation Article	11.2 (Publication of info as set out in Annex)
Regulation text	See above
Detailed description	**In case of NTC allocation method**, the offered capacity (MW) per direction between bidding zones, including technical profiles. A yearly offered capacity may include some sub periods where the value may differ. Note: a sub-period is a time interval within the whole period (Eg a month is a sub-period in a year). Note: auction specifications will be sent to the transparency platform. Note: Flow-based parameters are not required for yearly, monthly and weekly allocations.
Specification of calculation	According to the Annex of the Transparency Regulation
Primary owner of the data	TSO or Coordinated capacity calculator
Data provider	TSO or Coordinated capacity calculator
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	One week before the yearly allocation process but no later than 15 December.
Updates	Yes

Monthly offered cross-zonal capacity	
Regulation Article	11.2 (Publication of info as set out in Annex)
Regulation text	See above
Detailed description	**In case of NTC allocation method**, the offered capacity (MW) per direction between bidding zones, including technical profiles. A monthly offered capacity may include some sub periods where the value may differ. Note: a sub-period is a time interval within the whole period (Eg a month is a sub-period in a year).

	Note: auction specifications will be sent to the transparency platform. Note: Flow-based parameters are not required for yearly, monthly and weekly allocations.
Specification of calculation	According to the Annex of the Transparency Regulation
Primary owner of the data	TSO or Coordinated capacity calculator
Data provider	TSO or Coordinated capacity calculator
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	Two working days before the monthly allocation process.
Updates	Yes

Weekly offered cross-zonal capacity	
Regulation Article	11.2 (Publication of info as set out in Annex)
Regulation text	see above
Detailed description	**In case of NTC allocation method**, the offered capacity (MW) per direction between bidding zones, including technical profiles. A weekly offered capacity may include some sub periods where the value may differ. Note: a sub-period is a time interval within the whole period (E.g. a month is a sub-period in a year or a week in a month). Note: auction specifications will be sent to the transparency platform. Note: Flow-based parameters are not required for yearly, monthly and weekly allocations.

Specification of calculation	According to the Annex of the Transparency Regulation
Primary owner of the data	TSO or Coordinated capacity calculator
Data provider	TSO or Coordinated capacity calculator
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	One day before the weekly allocation process
Updates	

Day ahead forecasted cross-zonal capacity	
Regulation Article	11.2
Regulation text	No
Detailed description	The forecasted NTC (MW) per direction between bidding zones, including technical profiles. **only in NTC allocation method**. One value per MTU.
Specification of calculation	Optional publication
Primary owner of the data	TSO or Coordinated capacity calculator
Data provider	TSO or Coordinated capacity calculator
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	1 hour before spot market gate closure, for each market time unit.
Updates	Yes

Day ahead offered cross-zonal capacity	
Regulation Article	11.2 (Publication of info as set out in Annex)
Regulation text	See above

Detailed description	For NTC allocation method: the offered capacity (MW) per direction between bidding zones, including technical profiles. Note: it includes the case where offered capacity is 0 MW. Note 2: auction specifications will be sent to the transparency platform.
Specification of calculation	
Primary owner of the data	TSO or Coordinated capacity calculator
Data provider	TSO or Coordinated capacity calculator
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	1 hour before spot market gate closure, for each market time unit
Updates	Yes in case of force majeure

Intraday offered cross-zonal capacity	
Regulation Article	11.2 (Publication of info as set out in Annex)
Regulation text	See above
Detailed description	**a) In case of NTC allocation method** The offered capacity (MW) per direction between bidding zones, including technical profiles. Note: auction specifications will be sent to the transparency platform. **b) In case of FB allocation method :** **Relevant flow-based parameters**
Specification of calculation	
Primary owner of the data	TSO or Coordinated capacity calculator
Data provider	TSO or Coordinated capacity calculator

Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	1h before the first intra-day allocation and then as soon as TSOs receive the information from the trading platform, for each market time unit Note: real-time information is available on the trading platform
Updates	Yes

Restrictions on Direct Current links	
Regulation Article	11.3
Regulation text	In relation to direct current links, TSOs shall provide updated information on any restrictions placed on the use of available cross- border capacity including through the application of ramping restrictions or intraday transfer limits not later than one hour after the information is known to the ENTSO for Electricity.
Detailed description	In relation to direct current links, TSOs shall provide updated information on any restrictions placed on the use of available cross- border capacity including through the application of ramping restrictions or intraday transfer limits not later than one hour after the information is known to the ENTSO for Electricity. An intraday transfer limit means an intraday capacity limit value taking into account the technical capacity of the interconnector and the security constraints of the grid. Information to publish: 1) Ramping restrictions: It should be treated as a report (figures valid for several months) 2) intraday transfer limits : for the next day, intraday transfer limits (MW) for each border between bidding zones and per direction, (per market time unit)
Specification of calculation	Intraday transfer limits: For each border between bidding zones and per direction, intraday transfer limits (MW) for the next day (per market time unit). Intraday Transfer Limits can be negative
Primary owner of the data	Operators of direct current links shall be considered as primary owners of the updated information they provide.
Data provider	Ramping restriction: TSO Intraday Transfer Limits: TCA, TSO or task delegated to third party

Publication deadline for ENTSO-E	Information shall be published as soon as possible, but not later than one hour after the information is known by primary owner of the data.
Updates	Yes

Yearly report about critical network elements limiting offered capacities	
Regulation Article	11.4
Regulation text	TSOs or, if applicable, transmission capacity allocators, shall provide a yearly report to the ENTSO for Electricity indicating: a. the main critical network elements limiting the offered capacity, b. the control area(s) which the critical network elements belong to, c. the extent to which relieving the critical network elements would increase the offered transfer capacity, and d. all possible measures that could be implemented to increase the offered transfer capacity, together with their estimated costs.
Detailed description	The yearly report should contain a. the main critical network elements limiting the offered cross-zonal capacity, b. the control area(s) which the critical network elements belong to, c. the extent to which relieving the critical network elements would increase the offered transfer capacity, d. all possible measures that could be implemented to increase the offered transfer capacity, together with their estimated costs of all possible measures. Note: a common report could be made at regional or European level A template for the submission of the information requested by the Article 11(4) Transparency Regulation is available in the attachment of the Manual of Procedure.

Specification of calculation	When preparing the report, TSOs may choose not to identify the asset concerned and specify its location if it is classified as sensitive critical infrastructure protection related information in their Member States as provided for point d) of Article of Council Directive 2008/114/EC.
Primary owner of the data	TSOs
Data provider	TSO or if applicable, transmission capacity allocators shall be considered as primary owners of the report they provide.
Publication deadline for ENTSO-E	End of February (Submission deadline is the same)
Updates	Yes

3.8 Information relating to the use of cross zonal capacities

Explicit auctions - the use of transmission and interconnection capacity	
Regulation Article	12.1.a
Regulation text	(a) In case of explicit allocations, for every market time unit and per direction between bidding zones - the capacity (MW) requested by the market; - capacity (MW) allocated to the market; - the price of the capacity (Currency/MW); - the auction revenue (in Currency) per border between bidding zones. The information shall be published no later than one hour after each capacity allocation.
Detailed description	For explicit auctions, for every market time unit and per cross border and direction: - the capacity (MW) requested by the market; - the capacity allocated to the market (MW); - the price of the capacity (currency/MWh). Note: according to current practice, the price of capacity is interpreted as currency/MWh. Note: all above information is sent per capacity product and the auction revenue (in currency, defined as the product of the capacity price by the allocated capacity) per border between bidding zones.

	Note: from the yearly time horizon the transparency platform should work with a market time unit resolution. Note: It may be the case there is cross border capacity allocated through explicit continuous allocation manner. It means, there is no fixed “gate closure” deadline and the capacity is allocated for free. The platform shall manage to work with explicit a continuous allocation processes.
Specification of calculation	
Primary owner of the data	Transmission Capacity Allocator / TSOs
Data provider	Transmission Capacity Allocator / TSOs Note: different TCAs may exist for the “same border” (E.g.: capacity is divided in two parts and afterwards capacity is sold by two different TCAs).
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	At the latest H+1 after each capacity allocation.
Updates	

Total Capacity Nominated from explicit allocation	
Regulation Article	12.1.b
Regulation text	For every market time unit and per direction between bidding zones the total capacity nominated. The information shall be published no later than one hour after each round of nomination.
Detailed description	For every market time unit and per direction between bidding zones the total capacity nominated (MW) from capacity allocated via explicit allocations only. Total capacity nominated means aggregated capacity nominated by market participants from time horizons (yearly, monthly, quarterly, weekly, daily, intra-day) corresponding to explicit allocations, agreed between the TSOs and confirmed to the market. The total capacity nominated for submission (and publication) is the amount of nominated capacity in MW per border and direction (E.g.: between two bidding zones) and per market time unit.

	The value published for the long-term time horizons consists of nominations from the following applicable allocations: yearly, quarterly, monthly and weekly. The value published for the day ahead time horizon consists of nominations from the following allocations: yearly, quarterly, monthly, weekly and daily. The value published for the Intraday time horizon consists of nominations from the following allocations: yearly, quarterly, monthly, weekly, daily and intraday. The abovementioned values will be updated after each nomination process if values are confirmed by TSOs.
Specification of calculation	
Primary owner of the data	Transmission Capacity Allocator / TSO
Data provider	Transmission Capacity Allocator / TSO
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	The information shall be published no later than one hour after each nomination process.
Updates	Yes

Total Capacity Already Allocated	
Regulation Article	12.1.c
Regulation text	Prior to each capacity allocation the total capacity already allocated through previous allocation procedures per market time unit and per direction. The information shall be published at the latest when publication of offered capacity figures become due as set out in the Annex.
Detailed description	The total capacity already allocated (in MW) will be displayed per border, direction and per market time unit. Note: the submitted value of total capacity allocated will take into account the resale of capacity by market participants to a specific auction. UIOSI (use it or sell it) is included in the scope of resale.

Specification of calculation	TSO or TCAs send to the central information transparency platform, prior to a given allocation, the aggregated capacity already allocated by all previous allocation procedures. The sender must do the calculation (allocated capacity minus resale). E.g. before the daily allocation, it means outcome of yearly allocated capacity + monthly allocated capacity will be added and resale from yearly to monthly allocation will be deducted for each market time unit.
Primary owner of the data	TSO or TCA
Data provider	TSO or TCA
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	Publication of offered capacity figures become due as provided for in paragraph 2 of Article 10.
Updates	Y

Day-Ahead Prices	
Regulation Article	12.1.d
Regulation text	For every market time unit the day-ahead prices in each bidding zone (Currency/MWh). The information shall be published no later than one hour after gate closure.
Detailed description	For every market time unit the day-ahead prices in each bidding zone (Currency/MWh). Note: In case of implicit allocation, Gate closure time of the day-ahead market shall be understood as the output time of the matching algorithms.
Specification of calculation	
Primary owner of the data	Power Exchanges or TSOs
Data provider	Power Exchanges or TSOs
Publication deadline for ENTSO-E	It shall be published no later than one hour after gate closure.
Updates	Yes

Implicit allocations - the net positions & congestion income	
Regulation Article	12.1.e
Regulation text	In case of implicit allocations, for every market time unit the net positions of each bidding zone (MW) and the congestion income (in Currency) per border between bidding zones. The information shall be published no later than one hour after each capacity allocation.
Detailed description	In case of implicit allocations: 1. net position for each bidding zone per market time unit with indicator whether the value represents import or export. 2. the congestion income per market time unit, per border between bidding zones except for regions with flow-based calculation method where the congestion income is available per bidding zone.
Specification of calculation	
Primary owner of the data	- net positions are calculated by Market Operator (PXs), - congestion revenues are calculated by the Central Counter Party or shipping agent;
Data provider	- net positions (TCA, TSO or task delegated to third party (E.g. Market Operator,); - congestion revenues are calculated by the Central Counter Party or shipping agent.
Publication deadline for ENTSO-E	The information shall be published no later than one hour after each capacity allocation
Updates	

Total scheduled commercial exchanges from explicit and implicit allocations	
Regulation Article	12.1.f
Regulation text	Scheduled day-ahead commercial exchanges in aggregated form between bidding zones per direction and market time unit. The information shall be published every day no later than one hour after the last cut-off time and, if applicable, shall be updated no later than two hours after each intra-day nomination process.

Detailed description	For every market time unit and per direction between bidding zones the total scheduled commercial exchanges from explicit and implicit allocations will be published. *Total scheduled commercial exchanges* means aggregated schedules, in MW per direction and border (E.g.: between two bidding zones) and per market time unit for all previous time horizons (yearly, monthly, quarterly, weekly, daily, intra-Day) corresponding to explicit allocations after each nominations process and implicit allocation. The value published for the day ahead time horizon consists of commercial exchanges in aggregated form from the following allocations: yearly, monthly, quarterly, weekly and daily. The value published for the intraday time horizon consists of commercial exchanges in aggregated form from the following allocations: yearly, monthly, and quarterly, weekly, daily and intraday. Time interval is one day and resolution is market time unit. The abovementioned values will be published after the day ahead cut off time and, if applicable, will be updated no later than two hours after each intra-day nomination process.
Specification of calculation	
Primary owner of the data	TSO
Data provider	TSO
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	
Updates	Yes

Physical Flows	
Regulation Article	12.1.g
Regulation text	Physical flows between bidding zones per market time unit. The information shall be published for each market time unit as closely as possible to real time but no later than one hour after the operational period

Detailed description	Physical flows between bidding zones per market time unit as closely as possible to real time and at the latest H+1 after the end of the application period Physical flow is defined as the measured real flow of energy between neighbouring bidding zones on the cross borders.
Specification of calculation	Average values (in MW); netted values
Primary owner of the data	TSO or group of TSOs
Data provider	TSO or group of TSOs
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under Articles 11 and 12 may also be provided and published in non-aggregated form (i.e. on particular borders between TSOs), in case TSOs belong to different Member states.
Publication deadline for ENTSO-E	between bidding zones per market time unit as closely as possible to real time and at the latest H+1 after the end of the operating period
Updates	

Transfer capacities allocated between bidding zones in Member States and third countries	
Regulation Article	12.1.h
Regulation text	Transfer capacities allocated between bidding zones in Member States and third countries per direction, per allocated product and period. The information shall be published no later than one hour after the allocation.
Detailed description	Transfer capacities allocated between bidding zones in Member States and third countries per direction, per allocated product and period. All capacity products must be published for all time frames. Note: If the transfer capacity allocation between bidding zones in Member States and third countries are reported under article 12.1.a or article 12.1.f, there need not to be any reporting under this article 12.1.h. As from 24th December 2016 (date when the Transparency Regulation becomes applicable in the Energy Community), the transfer capacity allocation with the Energy Community contracting parties should normally be reported as for the countries of the European Union

Specification of calculation	
Primary owner of the data	TSO or capacity calculator
Data provider	TSO or capacity calculator
Publication deadline for ENTSO-E	It shall be published no later than one hour after the allocation.
Updates	Yes

3.9 Information relating to congestion management measures

Congestion management – redispatching	
Regulation Article	13.1.a
Regulation text	Information relating to redispatching per market time unit, specifying: – the action taken (that is to say production increase or decrease, load increase or decrease); – the identification, location and type of network elements concerned by the action; – the reason for the action; – capacity affected by the action taken (MW).
Detailed description	For their control areas TSOs shall provide to ENTSO-E for publication: Information relating to redispatching per market time unit[1], specifying: - The action taken (the action consists of a list of production increases or decreases, and if applicable a list of load increases or decreases); - The identification, location and type of network elements (type of asset; concerned by the action); - The reason for the action (2 possibilities): “Load flow overload” (current problem), “Voltage level adjustment”; - Redispatched energy (MWh) resulting from changes of affected generation/load capacity. - The control area where energy is going - The control area where energy is taken fromthe start and end date (day, hour) of the action; - comments.

[1] *With regards to the internal redispatching, the information pertaining to congestion management measures in self-dispatch systems will be published. The information relating to congestion management measures in central dispatch systems (i.e. Italy, Poland, Greece, Ireland and Northern Ireland) cannot be published because it is not possible to distinguish between balancing and congestion management which are performed simultaneously.*

	Although the Transparency Regulation requests the “capacity affected by the action taken (MW)”, In cooperation with ACER, ENTSO-E has decided to publish redispatched energy for generation and/or for load in MWh (energy rather than capacity) in order to improve the quality of the publications. Note: Action taken by TSO or TSOs who change the generation/load pattern.
Specification of calculation	The redispatched energy (MWh) resulting from changes of affected generation/load capacity is provided by separate publication for volumes of a) generation increase, b) generation decrease, c) load increase or d) load decrease i.e. the aggregated sum of generation/load increases separate from the aggregated sum of generation/load decreases. The identification, location and type of network elements concerned, i.e. the location of congestion causing the need for redispatch is provided by specifying the EIC of concerned network element as soon as the information becomes available. It may optionally be submitted at H+1 and should be updated on D+1.
Primary owner of the data	TSOs (either the initiator of the action or responsible TSO for its control area must send the information to the transparency
Data provider	TSOs (the initiator of the action must send the information to the transparency platform)
Aggregation	No
Publication deadline for ENTSO-E	The submission of information is event driven. The information shall be published as soon as possible but no later than 1 hour after the operating period.
Updates	Yes

Congestion management - Countertrading	
Regulation Article	13.1.b
Regulation text	Information relating to countertrading per market time unit, specifying: – The action taken (i.e. cross-border zonal exchange increase or decrease); – The bidding zones concerned; – The reason for the action; – Change in cross-border zonal exchange (MW).

Detailed description	Information relating to countertrading per market time unit, specifying: – The action taken : cross-zonal exchange; increase or decrease – Bidding zones : in area/out area; – Change in cross-border zonal exchange (MW); – The reason for the action; – the start and end date (day, hour) of the action; – Comments. Note: An opposite trade initiated by TSOs between two adjacent bidding zones in order to relieve congestions. In this case, the means used are not linked to a specific location or even the chosen generation/load are unknown as it is just delivered by producers/consumers of the respective bidding zone/zones.
Specification of calculation	
Primary owner of the data	TSOs
Data provider	TSOs
Aggregation	no
Publication deadline for ENTSO-E	The submission of information is event driven. The information shall be published as soon as possible but no later than 1 hour after the operating period
Updates	Yes

Congestion management report	
Regulation Article	13.1.c
Regulation text	The costs incurred in a given month from actions referred to in points (a) and (b) and from any other remedial action.
Detailed description	For their control areas TSOs shall provide to ENTSO-E for publication a monthly summary report detailing all the costs incurred to them separately for measures taken as referred to in paragraph 1(a), paragraph 1(b) and any other remedial action.
Specification of calculation	3 values might be expected from actions referred to in points a and b and from any other remedial action.
Primary owner of the data	TSOs
Data provider	TSOs

Publication deadline for ENTSO-E	Publication of the report must be done before last working day of M+1. (The submission deadline is the same). The information will be provided only in case the action under Article 13.1.a and 13.1.b is activated or other remedial actions.
Updates	Yes

3.10 Forecast generation

Installed Generation Capacity aggregated	
Regulation Article	14.1.a and 14.2.a
Regulation text	For their control area, TSOs shall calculate and provide the sum of generation capacity (MW) installed for all existing production units equaling to or exceeding 1 MW installed generation capacity, per production type, The information shall be published annually no later than one week before the end of the year
Detailed description	The sum of installed Net generation capacity (MW) per control area for all existing production units equaling to or exceeding 1 MW installed generation capacity, per production type. The information shall be published annually no later than one week before the end of the previous year. The installed net generation capacity refers to to the generation capacity which is effectively installed on January 1st of the following year.
Specification of calculation	Installed generation capacity should refer to the 1st January of the following year. The data are aggregated per control are and per production type
Primary owner of the data	Owners of production units and /or DSOs
Data provider	TSOs or other Data Provider of information depending on local organisation.
Aggregation	Locally (in Data provider)
Publication deadline for ENTSO-E	One week before the first year to which the data refers.
Updates	Usually no update

Installed capacity by Production Unit	
Regulation Article	14.1.b and 14.2.b

Regulation text	Information about production units (existing and planned) with an installed generation capacity equalling to or exceeding 100 MW. The information shall contain: – the unit name; – the installed generation capacity (MW); – the location; – the voltage connection level; – the bidding zone; – the production type. The information shall be published annually for the three following years no later than one week before the beginning of the first year to which the data relates.
Detailed description	Information about production units (existing and planned) with an installed generation capacity equalling to or exceeding 100 MW. The information shall contain: - the unit name; - the installed net generation capacity (MW); - the location; - the voltage connection levels; - the bidding zone; - the control area; - the production type; - the commissioning date (when available); and - the decommissioning date (when available) Note: The definitions of the commissioning and decommissioning date are out of scope for TSOs and, in order to ensure qualitative data publications, it shall be drafted by NRAs in coordination with primary owners of the data taking into account the ongoing discussions. The information shall be published annually for the three following years no later than one week before the beginning of the first year to which the data refers. Information should refer to January 1st of each year for the 3 following years.
Specification of calculation	Information should refer to the 1st January of each year for the 3 following years.
Primary owner of the data	Owners of production units for nominated plants.
Data provider	TSOs or other Data Provider of information depending on local organisation.

Where to aggregate data	No aggregation necessary
Publication deadline for ENTSO-E	One week before the first year to which the data refers.
Updates	Usually no update

Day ahead aggregated generation	
Regulation Article	14.1.c and 14.2.c
Regulation text	An estimate of the total scheduled generation (MW) per bidding zone, per each market time unit of the following day. The information shall be published no later than 18.00 Brussels time, one day before actual delivery takes place.
Detailed description	An estimate of the total scheduled Net generation (MW) per bidding zone, per each market time unit of the following day. The information shall be published no later than 18h Brussels time, one day before actual delivery takes place.
Specification of calculation	Aggregated value generated by Data provider. The information should refer to the next day.
Primary owner of the data	owners of generation units and /or DSOs
Data provider	TSOs or other Data Provider of information depending on local organisation.
Aggregation	Locally (in Data provider)
Publication deadline for ENTSO-E	D-1 at 18h00 the latest in Brussels time
Updates	Because of the limited time, no update

Day ahead generation forecasts for wind and solar	
Regulation Article	14.1.d and 14.2.d
Regulation text	A forecast of wind and solar power generation (MW) per bidding zone, per each market time unit of the following day. The information shall be published no later than 18.00 Brussels time, one day before actual delivery takes place. The information shall be regularly updated and published during intra-day trading with at least one update to be published at 8.00 Brussels time on the day of actual delivery. The information shall be provided for all bidding zones only in Member States with more than 1% feed-in of wind or solar power generation per year or for bidding zones with more than 5% feed-in of wind or solar power generation per year.

Detailed description	A forecast of wind and solar power net generation (MW) per bidding zone, per each market time unit of the following day. – Current forecast: The information published is the last update of the current forecast. The information shall be regularly updated and published during intra-day trading; – Day ahead forecast at 18.00: The information shall be published no later than 18.00 Brussels time, one day before actual delivery takes place. This value is the most recent forecast at 18:00 the day before; – Intraday forecast at 8.00: at least one update to be published at 8.00 Brussels time on the day of actual delivery for intra-day. This value is the most recent forecast at 8:00 the day of delivery. The information shall be provided for all bidding zones only in Member States with more than 1 % feed-in of wind or solar power generation per year or for bidding zones with more than 5% feed-in of wind or solar power generation per year. Forecasts of wind and solar power net generation (MW) per bidding zone, per each market time unit of the following day: • Current forecast • Day ahead forecast at 18.00 • Intraday forecast at 8.00 Detailed description of this information: • Current forecast: The information published is the last update of the forecast. The information shall be regularly updated. • Day ahead forecast at 18.00: The information is a fixed value, i.e. the current forecast at 18.00 the day before. The information shall be published no later than 18.00 Brussels time, one day before actual delivery takes place and shall not be regularly updated after 18.00. • Intraday forecast at 8.00: The information is a fixed value, i.e. the current forecast at 8.00 the day of delivery. The information shall be published at 8.00 Brussels time on the day of actual delivery for intra-day and shall not be regularly updated after 8.00. The information shall be provided for all bidding zones only in Member States with more than 1 % feed-in of wind or solar power generation per year or for bidding zones with more than 5% feed-in of wind or solar power generation per year.

	Note: every submission has to be published at least as "current forecast". For example, the last forecast submitted before 18.00 in D-1 will be published as "day ahead forecast at 18.00" but also as "current forecast". In the same manner, the forecast published at 8.00 the day of delivery will be published twice, as "current forecast" and "intraday forecast at 8.00" as well.
Specification of calculation	Average of forecasts power output per Market Time Unit and per bidding zone: - one value for the solar; - one value for the wind
Primary owner of the data	Owners of production units, DSOs, TSOs or – in some Member States – central forecast bodies responsible for preparing the generation forecasts of wind and/or solar power.
Data provider	TSOs or other Data Provider of information depending on local organisation.
Aggregation	Locally (in Data provider)
Publication deadline for ENTSO-E	D-1 not later than 18h00 in Brussels time
Updates	Multiple update possible, but at least an update at 8h00 in Brussels time on the delivery day

3.11 Information relating to the unavailability of generation and production units

Planned Unavailability of a generation unit	
Regulation Article	15.1.a, 15.2 and 15.3
Regulation text	The planned unavailability of 100 MW or more of a generation unit including changes of 100 MW or more in the planned unavailability of that generation unit, expected to last for at least one market time unit up to three years ahead, specifying: – the name of the production unit; – the name of the generation unit; – location; – bidding zone; – installed generation capacity (MW); – the production type; – available capacity during the event; – reason for the unavailability; – start and estimated end date (day, hour) of the change in

	– availability. The information shall be published as soon as possible, but no later than one hour after the decision regarding the planned unavailability is made.
Specification of calculation	The “available capacity during the event” means the available generation capacity during the period specified. The reason for the unavailability shall be selected from a predefined list. A generation unit could never be considered as a consumption unit
Primary owner of the data	Owner of generation unit and/ or DSOs
Data provider	TSOs or other Data Provider of information depending on local organisation.
Aggregation	No aggregation
Publication deadline for ENTSO-E	The information shall be published H+1 at the latest after the plan is approved.
Updates	The information shall be updated with changes at the latest H+1 after information is known.

Actual unavailability of generation unit	
Regulation Article	15.1.b, 15.2 and 15.3
Regulation text	Changes of 100 MW or more in actual availability of a generation unit, expected to last for at least one market time unit, specifying: – the name of the production unit; – the name of the generation unit; – location; – bidding zone; – installed generation capacity (MW); – the production type; – available capacity during the event; – reason for the unavailability; and – estimated or actual start date and estimated end date (day, hour) of the change in availability. The information shall be published as soon as possible but no later than one hour after the change in actual availability.

Detailed description	Changes of 100 MW or more in actual availability of a generation unit, expected to last for at least one market time unit, specifying: – the name of the production unit; – the name of the generation unit; – location; – bidding zone; – installed Net generation capacity; – the production type; – available capacity during the event; – reason for the unavailability of the generation asset; and – start and estimated end date (day, hour) of the change in availability. The information shall be published as soon as possible but no later than one hour after the change in actual availability.
Specification of calculation	If the actual unavailability have been planned and already reported with the correct available capacity, it's not necessary to deliver again the data. The "available capacity during the event" means the available generation capacity during the period specified. A generation unit could never be considered as a consumption unit
Primary owner of the data	Owners of generation units
Data provider	TSOs or other Data Provider of information depending on local organisation.
Aggregation	No aggregation
Publication deadline for ENTSO-E	No later than H+1 after the change in actual availability
Updates	At the latest H+1 after stop date is known

Planned unavailability of production unit	
Regulation Article	15.1.c, 15.2 and 15.3

Regulation text	The planned unavailability of a production unit of 200 MW or more including changes of 100 MW or more in the planned unavailability of that production unit, but not published in accordance with subparagraph (a), expected to last for at least one market time unit up to three years ahead, specifying: – the name of the production unit; – location; – bidding zone; – installed generation capacity (MW); – the production type; – available capacity during the event; – reason for the unavailability of generation asset; and – start date and estimated end date (day, hour) of the change in availability The information shall be published as soon as possible, but no later than one hour after the decision regarding the planned unavailability is made.
Detailed description	The planned unavailability of a production unit of 200 MW or more including changes of 100 MW or more in the planned unavailability of that production unit, but not published in accordance with subparagraph (a), expected to last for at least one market time unit up to three years ahead, specifying: – the name of the production unit; – location; – bidding zone; – installed net generation capacity (MW); – the production type; – available capacity during the event; – reason for the unavailability of generation asset; and – estimated or actual start date and estimated end date (day, hour) of the change in availability. The information shall be published as soon as possible, but no later than one hour after the decision regarding the planned unavailability is made.

Specification of calculation	The “available capacity during the event” means the available generation capacity during the period specified. The reason for the unavailability shall be selected from a pre-defined list If an unavailability is already disclosed concerning a generation unit >100MW, this unavailability do not have to be disclosed here another time (no double disclosing). A production unit could never be considered as a consumption unit
Primary owner of the data	Owners of generation units
Data provider	TSOs or other Data Provider of information depending on local organisation.
Aggregation	No aggregation
Publication deadline for ENTSO-E	The information shall be published H+1 at the latest after the plan is approved
Updates	The information shall be updated with changes at the latest H+1 after information is known

Actual unavailability of production unit	
Regulation Article	15.1.d, 15.2 and 15.3
Regulation text	Changes of 100 MW or more in actual availability of a production unit with an installed generation capacity of 200 MW or more, but not published in accordance with subparagraph (b), expected to last for at least one market time unit, specifying: – the name of the production unit, – location, – bidding zone, – installed generation capacity (MW), – the production type, – available capacity during the event, – reason for the unavailability and – start date and estimated end date (day, hour) of the change in availability; The information shall be published as soon as possible but no later than one hour after the change in actual availability.

Detailed description	Changes of 100 MW or more in actual availability of a production unit with an installed generation capacity of 200 MW or more, but not published in accordance with subparagraph (b), expected to last for at least one market time unit, specifying: – the name of the production unit; – location; – bidding zone; – installed net generation capacity (MW); – the production type; – available capacity during the event; – reason for the unavailability of generation asset; and – estimated or actual start date and estimated end date (day, hour) of the change in availability. The information shall be published as soon as possible but no later than one hour after the change in actual availability.
Specification of calculation	If the actual unavailability have been planned and already reported with the correct available capacity, it's not necessary to deliver again the data. The "available capacity during the event" means the available generation capacity during the period specified. If an unavailability is already disclosed concerning a generation unit >100MW, this unavailability do not have to be disclosed here another time (no double disclosing). A production unit could never be considered as a consumption unit
Primary owner of the data	Operators of generation units
Data provider	TSOs or other Data Provider of information depending on local organisation.
Aggregation	No aggregation
Publication deadline for ENTSO-E	No later than H+1 after the change in actual availability
Updates	at the latest H+1 after stop date is known

3.12 Actual generation

Actual generation per unit	
Regulation Article	16.1.a and 16.2.a
Regulation text	Actual generation output (MW) per market time unit and per generation unit of 100 MW or more installed generation capacity. The information shall be published five days after the operational period.
Detailed description	Actual net generation output (MW) per market time unit and per generation unit of 100 MW or more installed generation capacity. The information shall be published five days after the end of the operational period.
Specification of calculation	Average of all available instantaneous net power output values in each Market Time Unit. A generation unit could never be considered as a consumption
Primary owner of the data	Owners of generation units
Data provider	TSOs or other Data Provider of information depending on local organisation.
Aggregation	No aggregation
Publication deadline for ENTSO-E	D+5
Updates	Usually no update

Aggregated generation per type	
Regulation Article	16.1.b and 16.2.b
Regulation text	Aggregated generation output per market time unit and per production type. The information shall be published no later than one hour after the operational period
Detailed description	Actual aggregated Net generation output (MW) per market time unit and per production type. The information shall be published no later than one hour after the operational period.
Specification of calculation	The actual generation shall be computed as the average of all available instantaneous Net generation output values on each market time unit. If a net generation output is not known, it shall be estimated. The actual generation of small-scale units might be estimated if no real-time measurement devices exist

Primary owner of the data	Owners of generation units or TSOs
Data provider	TSOs or other Data Provider of information depending on local organisation.
Where to aggregate to data	Locally (in Data Provider)
Publication deadline for ENTSO-E	H+1 following the concerned MTU
Updates	Usually no update

Actual wind and solar power generation	
Regulation Article	16.1.c and 16.2.c (merged with Article 16.1b)
Regulation text	Actual or estimated wind and solar power generation (MW) in each bidding zone per market time unit … The information shall be published no later than one hour after the operational period and be updated on the basis of measured values as soon as they become available. The information shall be provided for all bidding zones only in Member States with more than 1% feed-in of wind or solar power generation per year or for bidding zones with more than 5% feed-in of wind or solar power generation per year.
Detailed description	Actual or estimated generation wind and solar power Net generation (MW) in each bidding zone per market time unit. The information shall to be published no later than one hour after the end of each operating period (of one market time unit length) and be updated on the basis of measured values as soon as they become available. The information shall be published for all bidding zones in Members sates with more than 1 % feed-in of wind or solar power generation per year or for bidding zones with more than 5 % feed-in of wind or solar power generation per year.
Specification of calculation	This Article is merged with Article3 16.1b The actual generation shall be computed as the average of all available instantaneous power output values on each market time unit. If Net power generation output is not known, it shall be estimated. The actual generation of small-scale units might be estimated if no real-time measurement devices exist.
Primary owner of the data	Owners of generating units and / or DSOs
Data provider	TSOs or other Data Provider of information depending on local organisation.

Aggregation	Locally (in Data provider)
Publication deadline for ENTSO-E	H+1 following the concerned MTU
Updates	Multiple update possible based on measured data

Pumped storage/reservoir stored energy	
Regulation Article	16.1.d and 16.2.d
Regulation text	Aggregated weekly average filling rate of all water reservoir and hydro storage plants (MWh) per bidding zone including the figure for the same week of the previous year The information shall be published on the third working day following the week to which the information relates. The information shall be provided for all bidding zones only in Member States with more than 10% feed-in of this type of generation per year or for bidding zones with more than 30% feed-in of this type of generation per year.
Detailed description	Aggregated weekly average filling rate of all water reservoir and hydro storage plants (MWh) per bidding zone including the figure for the same week of the previous year. The information shall be published on the third working day following the week to which the information relates. The information shall be provided for all bidding zones only in Member States with more than 10% feed-in of this type of generation per year or for bidding zones with more than 30% feed-in of this type of generation per year.
Specification of calculation	No standard method One aggregated value for both the water reservoir and hydro storage plants The figures of the previous year should be displayed only one year after the transparency platform is operational. The 53th week must be compared to the 52th week. Pumped storage units are considered as generation unit and not consumption unit.
Primary owner of the data	Owners of storage facilities or owners of generation units.
Data provider	TSOs or other Data Provider of information depending on local organisation.
Aggregation	Locally (in Data provider)
Publication deadline for ENTSO-E	End of the third working day of W+1.
Updates	Usually no update

3.13 Balancing

Rules on balancing	
Regulation Article	17.1.a

Regulation text	Rules on balancing including: – processes for the procurement of different types of balancing reserves and of balancing energy, – the methodology of remuneration for both the provision of reserves and activated energy for balancing, – the methodology for calculating imbalance charges, – if applicable, a description on how cross-border balancing between two or more control areas is carried out and the conditions for generators and load to participate.
Detailed description	Documents that contain all relevant information and specific information for market actors on the following topics: – processes for the procurement of different types of balancing reserves and of balancing energy, – the methodology of remuneration for both the provision of reserves and activated energy for balancing, including pricing method (pay-as-bid or marginal price), – the methodology for calculating imbalance charges, – In the case a control area is divided in several areas the area(s) for which volumes and prices of reserves and imbalances apply within the control area shall be indicated, – if applicable, a description on how cross-border balancing between two or more control areas is carried out and the conditions for generators and load to participate. The document should be in .PDF format.
Specification of calculation	No calculation. Language: English; document can link to the document on national website (in original language). It is TSO's choice to publish the whole rules or a summary of the rules containing the main points detailed in regulation.
Primary owner of the data	TSO
Data provider	TSO
Aggregation	Not applicable
publication deadline for ENTSO-E	At the start of the new transparency platform.
Updates	To be updated if needed (if rules change)

Amount of balancing reserves under contract	
Regulation Article	17.1.b and 17.2.a

Regulation text	The amount of balancing reserves under contract (MW) by the TSO, specifying: – the source of reserve (generation or load), – the type of reserve (e.g. Frequency Containment Reserve, Frequency Restoration Reserve, Replacement Reserve), – the time period for which the reserves are contracted (e.g. hour, day, week, month, year, etc.). shall be published as soon as possible but no later than two hours before the next procurement process takes place
Detailed description	The volume of balancing reserves (MW) that are made available to the TSO by contract (either bilateral contracts or tendering process): - For each type of reserve (e.g. Frequency Containment Reserve, Frequency Restoration Reserve manual and automatic, Replacement Reserve), - Source of reserves (load or generation or mixed generation/load). - Up-regulation and/or down-regulation or symmetric reserves. The period for which the reserves are contracted (e.g. hour, day, week, month, year, etc.). These volumes shall only include the pre-contracted reserves (=volumes from the Procurement of Balancing Reserves). **They do not include volumes from the Procurement of Balancing Energy.** The information shall be published for every balancing time unit, and at the latest two hours before the next procurement process takes place. Note that different procurements can be done for the same type of reserve and for the same balancing time units, e.g. weekly and daily procurement of mFRR. Sample:

MONTHLY Procurement	mFRR		
Balancing time unit	**UP**	**DOWN**	**SYMMETRIC**
00:00-00:15			
00:15-00:30			
00:30-00:45			
00:45-01:00			
01:00-01:15			
…			

Procurement of Balancing Reserve

DAILY Procurement	mFRR		
Balancing time unit	**UP**	**DOWN**	**SYMMETRIC**
00:00-00:15			
00:15-00:30			
00:30-00:45			
00:45-01:00			
01:00-01:15			

Procurement of Balancing Energy

Specification of calculation	Types of reserves can be : - Frequency Containment Reserve, - Automatic Frequency Restoration Reserve - Manual Frequency Restoration Reserve - Replacement Reserve Source of reserves can be load, generation or mixed generation/load. Note: The specification of source of reserves does not imply separate products and prices for different sources. This goes to say that the data publication requirements are allowing for flexibility in the data publications regardless of market design (i.e. the "mixed" means that data providers are not necessarily aware of the source). Time period can be: year, month, week, day, hour, … (this is different depending on the procurement process) Volumes should be published separately for Up-regulation and/or down- regulation or symmetric reserves. Primary owner of data has to aggregate according to all attributes [types mentioned above. Example: Frequency Containment Reserve , yearly, generation, up]
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market
Aggregation	TSO/ operator of balancing market
Publication deadline for ENTSO-E	As soon as possible, at the latest two hours before the next procurement process takes place. Note: In order to ensure consistency with price (Regulation Article 17.1.c) it would be advisable to also publish H+1 after the procurement process ends.
Updates	To be updated if needed
Comments	Need information on the different time periods that can be contracted for every control area (for transparency platform configuration)

Prices of the reserved capacity of balancing reserves	
Regulation Article	17.1.c and 17.2.b
Regulation text	Prices paid by the TSO per type of procured balancing reserve and per procurement period (Currency/MW/period). The information shall be published as soon as possible but no later than one hour after the procurement process ends.

Detailed description

The price paid by TSO for procured balancing reserves for every balancing time unit separated by

- Types of reserves
- If applicable, source of reserves (generation or load or mixed generation/load)
- Up and/or down regulation or symmetric reserves
- Time period for which the procurement process is made.

Note: "Symmetric reserves" are capable of regulation in both directions, with the reserve capacity payment for "x MW" corresponding to x MW reserve in both directions during the contract period. If separate payments are done for each direction of symmetric reserves, they shall be published separately as reserves for upwards or downwards regulation.

For pay-as-bid price scheme, the average price shall be published, and for marginal price scheme, the marginal price shall be published. For every publication, the pricing scheme shall be indicated.

This doesn't include prices from international assistance between TSOs as there is no capacity reservation between TSOs.
Note that different procurements can be done for the same type of reserve and for the same balancing time units, e.g. weekly and daily procurement of FCR.

Sample:

MONTHLY Procurement			
Pay as bid	mFRR		
Balancing time unit	UP	DOWN	SYMMETRIC
00:00-00:15			
00:15-00:30			
00:30-00:45			
00:45-01:00			
01:00-01:15			
...			

Procurement of Balancing Reserve

DAILY Procurement			
Pay as bid	mFRR		
Balancing time unit	UP	DOWN	SYMMETRIC
00:00-00:15			
00:15-00:30			
00:30-00:45			
00:45-01:00			

Procurement of Balancing Energy

Specification of calculation	Types of reserves can be : - Frequency Containment Reserve, - Automatic Frequency Restoration Reserve - Manual Frequency Restoration Reserve - Replacement Reserve Source of reserves can be load, generation or mixed generation/load. Note: The specification of source of reserves does not imply separate products and prices for different sources. This goes to say that the data publication requirements are allowing for flexibility in the data publications regardless of market design (i.e. the "mixed" means that data providers are not necessarily aware of the source). Procurement time period can be: year, month, week, day, hour, … (this is different depending on the procurement process and explanation published under 17.1.a) Prices should be published separately for Up-regulation and/or down- regulation or symmetric reserves. Price shall be average or marginal depending on the procurement process scheme (whether pay-as-bid or marginal).
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market
Aggregation	Calculation is performed by TSO/ operator of balancing market (not aggregation)
Publication deadline for ENTSO-E	As soon as possible but no later than one hour after the procurement process takes place
Updates	To be updated if needed
Comments	Need information on the different procurement time periods for every balancing market (for transparency platform configuration)

Accepted aggregated offers (volumes)	
Regulation Article	17.1.d and 17.2.c
Regulation text	Accepted aggregated offers per balancing time unit, separately for each type of balancing reserve… shall be published as soon as possible but no later than one hour after the operating period

Detailed description	Aggregated accepted volumes (MW) available for activation per balancing time unit, separated by - Types of reserves - If applicable, source of reserves (generation or load or mixed generation/load) - Up and/or down regulation or symmetric reserves. Note: The specification of source of reserves does not imply separate products and prices for different sources. This goes to say that the data publication requirements are allowing for flexibility in the data publications regardless of market design (i.e. the "mixed" means that data providers are not necessarily aware of the source). These volumes shall include all balancing reserves available for activation, including volumes from pre- contracted reserves and non-contracted reserves. The information shall be published as soon as possible but no later than one hour after the end of the operating period.
Specification of calculation	Types of reserves can be : - Frequency Containment Reserve, - Automatic Frequency Restoration Reserve - Manual Frequency Restoration Reserve - Replacement Reserve Source of reserves can be load or generation. Reserves should be published separately for up-regulation and/or down-regulation or symmetric. The operating period is of one balancing time unit length. The aggregated volumes of offers might include offers from cross control area balancing but no volume from international assistance between TSOs.
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market
Aggregation	TSO/ operator of balancing market
Publication deadline for ENTSO-E	As soon as possible but no later than one hour after the operational period.
Updates	To be updated if needed

Volumes of activated balancing energy	
Regulation Article	17.1.e and 17.2.d
Regulation text	the amount of activated balancing energy (MW) per balancing time unit and per type of reserve … shall be published no later than 30 minutes after the operating period
Detailed description	Activated amount of balancing energy per balancing time unit (MWh) separated per : - Types of reserves - If applicable, source of reserves (generation or load or mixed generation/load)) - Up and down regulation Note: The specification of source of reserves does not imply separate products and prices for different sources. This goes to say that the data publication requirements are allowing for flexibility in the data publications regardless of market design (i.e. the “mixed” means that data providers are not necessarily aware of the source). To be published no later than 30 minutes after the end of the operating period.
Specification of calculation	Types of reserves can be : - If applicable, Frequency Containment Reserve - Automatic Frequency Restoration Reserve - Manual Frequency Restoration Reserve - Replacement Reserve Source of reserves can be load or generation or mixed generation/load. The amount of activated balancing energy should be published separately for up-regulation and down-regulation. The operating period is one balancing time unit length. One value for total volume activated, per types of attributes (type; source if applicable; direction; operating period) and balancing time unit. The total volumes of offers might include offers from cross control area balancing as well as volumes coming from international assistance between TSOs.
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market
Aggregation	TSO/ operator of balancing market
Publication deadline for ENTSO-E	No later than 30 minutes after the end of the operating period;

Updates	In case the data are preliminary, the figures shall be updated when the data become available

Prices of activated balancing energy	
Regulation text	Prices paid by the TSO for activated balancing energy per balancing time unit and per type of reserve; price information shall be provided separately for up and down regulation … Shall be published as soon as possible but no later than one hour after the operating period
Detailed description	The price paid by TSO for activated balancing reserves, per balancing time unit, separated by - Types of reserves - If applicable, source of reserves (generation or load) - Up and down regulation Note: Upwards regulation means an increase in active power output or a decrease in active power consumption while downwards regulation means a decrease in active power output or an increase in active power consumption. Negative prices for upwards is where the balancing service provider pays to produce more or consume less and negative price for downwards is where the TSO pays the balancing service provider for producing less or consuming more It shall be published no later than one hour after the end of the operating period. For pay-as-bid price scheme, the average price of all activated balancing bids of the respective balancing time unit, shall be published, and for marginal price scheme, the marginal price shall be published. For every publication, the pricing scheme shall be indicated.
Specification of calculation	Types of reserves can be : - If applicable, Frequency Containment Reserve - Automatic Frequency Restoration Reserve - Manual Frequency Restoration Reserve - Replacement Reserve Source of reserves can be load, generation Reserves should be published separately for up-regulation and down- regulation. The operating period is of one balancing time unit length. Price shall be average or marginal depending on the procurement process scheme (whether pay-as-bid or marginal). The pricing regime shall be indicated.
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market

Aggregation	TSO/ operator of balancing market
Publication deadline for ENTSO-E	As soon as possible but no later than one hour after the end of the operating period
Updates	To be updated if needed

Imbalance prices	
Regulation Article	17.1.g and 17.2.f
Regulation text	Imbalance prices per balancing time unit. The information shall be published as soon as possible.
Detailed description	Prices for negative and positive imbalances per balancing time unit, to be published as soon as possible. In addition where applicable, separated prices shall be given for consumption and production. For energy deficit, the price applies to the TSO payment to the balancing service provider. For energy surplus, the price applies to the balancing service provider payment to the TSO. A negative price means that energy is received together with a compensation.
Specification of calculation	Only two cases are foreseen: 1. For one Control Area, there is one price for positive imbalance and one for negative imbalance, these prices being applied to generation and consumption. 2. For one Control Area, there is one price for positive imbalance for generation, one price for negative imbalance for generation and one price for consumption. The operating period is of one balancing time unit length.
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market
Aggregation	TSO/ operator of balancing market
Publication deadline for ENTSO-E	As soon as possible
Updates	If needed

Total imbalance volume per balancing time unit	
Regulation Article	17.1.h and 17.2.g
Regulation text	Total imbalance volume per balancing time unit … Shall be published no later than 30 minutes after the operating period

Detailed description	Total aggregated volume of the imbalance per balancing time unit expressed in MWh. If final values are not available, an estimated value is published, and shall be updated with final values as soon as possible. The volume represents either a surplus or a deficit. The status of the data (estimated or final) shall also be indicated Data shall be submitted as absolute values.
Specification of calculation	Aggregated volumes of imbalance according to methodology described in 17.1.a (The total imbalance has to be published in accordance with calculation method defined in local rules approved by regulators) Data can have two states: estimated or final. The operating period is one balancing time unit length.
Primary owner of the data	TSO
Data provider	TSO/Market Operator
Publication deadline for ENTSO-E	As soon as possible and no later than 30 minutes after the end of the operating period.
Updates	In case the data are preliminary, the figures shall be updated when the data become available.

Monthly financial balance	
Regulation Article	17.1.i and 17.2.h
Regulation text	monthly financial balance of the control area, specifying: – the expenses incurred to the TSO for procuring reserves and activating balancing energy, – the net income to the TSO after settling the imbalance accounts with balance responsible parties The information shall be published no later than three months after the operational month. In case the settlement is preliminary, the figures shall be updated after the final settlement
Detailed description	Monthly information on the financial expenses and incomes related to the system balancing and imbalances : - The expenses represent netted value (expenses and income) resulting from the reservation of the balancing reserves (procurement of Balancing Reserves as well as the procurement of Balancing Energy) and activation of balancing reserves. – The net income represents netted value (income and expenses) resulting from the settlement of imbalance energy trades. – The information shall be published per balancing area, per month at the latest on the last calendar day of M+3. If settlement is preliminary, the figures shall be updated after the final settlement.

Specification of calculation	Values are aggregated per month (2 values per month) by the Primary owner of the data. The expenses and the net income can be positive or negative as well.
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market
Aggregation	TSO/ operator of balancing market
Publication deadline for ENTSO-E	At the latest on the last calendar day of M+3 for month M
Updates	In case the settlement is preliminary, the figures shall be updated after the final settlement

Aggregated volumes of offers for cross-border balancing activation	
Regulation Article	17.1.j and 17.2.i
Regulation text	if applicable, information regarding Cross Control Area Balancing per balancing time unit, specifying: – the volumes of exchanged bids and offers per procurement time unit, … shall be published no later than one hour after the operating period
Detailed description	If applicable, where cross-control area balancing is performed, volumes of TSO-TSO balancing reserves offers for up and/or down regulation received per control area from all applicable connecting control areas for activation for the next balancing time unit. The information shall be published, where applicable, at the latest one hour after the end of the operating period. In cases where cross-control area balancing is performed based on a TSO-TSO Model with Common Merit Order List among several TSOs this information is already published by 17.1.d. Thus no separate publication is required by 17.1.j
Specification of calculation	Per control area, the sum of upwards and the sum of downwards offers received from all applicable connecting control areas. The volumes do not include any volume from international assistance between TSOs.
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market
Aggregation	TSO/ operator of balancing market

Publication deadline for ENTSO-E	No later than one hour after the operating period.
Updates	If needed

Prices for cross-control area balancing for bids and offers	
Regulation Article	17.1.j and 17.2.i
Regulation text	if applicable, information regarding Cross Control Area Balancing per balancing time unit, specifying: – the minimum and maximum prices of exchanged bids and offers per procurement time unit, … shall be published no later than one hour after the operating period
Detailed description	If applicable, where cross-control area balancing is performed, maximum and minimum prices of TSO-TSO upwards and downwards bids and offers for the activation of Balancing Energy received per control area from all applicable connecting control areas. The information shall be published, where applicable, at the latest one hour after the operating hour. Only bids/offers for activation (MWh) are included in this requirement. Balancing reserve capacity (MW) is not included.
Specification of calculation	If applicable, four prices shall be published: The maximum bid/offer price for upwards regulation 1) The minimum bid/offer price for upwards regulation 2) The maximum bid/offer price for downwards regulation 3) The minimum bid/offer price for downwards regulation This does not include prices coming from international assistance between TSOs as there is no bidding/offering process in international assistance between TSOs.
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market
Aggregation	TSO/ operator of balancing market
Publication deadline for ENTSO-E	At the latest one hour after the end of the operating period;
Updates	If needed

Volumes of cross-control area balancing energy activated	
Regulation Article	17.1.j and 17.2.i
Regulation text	if applicable, information regarding Cross Control Area Balancing per balancing time unit, specifying: – volume of balancing energy activated in the control areas concerned … shall be published no later than one hour after the operating period
Detailed description	If applicable, where cross-control area balancing is performed, the upwards and downwards volume of activated balancing energy in the control area from all applicable connecting control areas. Example for further clarification: Assumption: cross-control area balancing between Area A, B, C In one Balancing Time Unit in Area A the Activation of 100 MW is required, publication of the total amount (100 MW) is already published according to Art. 17.1.e In addition to 17.1.e in case of cross-control area balancing also the indication of the origin (Control Area) of the activated balancing energy is required. i.e.: – 60 MW of the total amount (100MW) were actually activated from Balancing Service Providers in Area A – The remaining amount (40 MW) is activated from Balancing Service Providers of the other Areas (B and C) so 40 MW is published as 17.1.J. In case where cross-control area balancing is performed based on a TSO-TSO Model with Common Merit Order List among several TSOs this information is implicitly already published as amount of activated balancing energy (17.1.e) and total imbalance volume (17.1.h). The information shall be published, where applicable, at the latest one hour after the operating hour.
Specification of calculation	Per control area, the upwards and/or downwards volumes of activated in the acquiring area from all applicable connecting control areas. The volumes do not include any volume from international assistance between TSOs as there is no bidding/offering process in international assistance between TSOs.
Primary owner of the data	TSO/ operator of balancing market
Data provider	TSO/ operator of balancing market
Aggregation	TSO/ operator of balancing market

Publication deadline for ENTSO-E	At the latest one hour after the end of the operating period;
Updates	If needed