European Network of Transmission System Operators for Electricity

entsoe

Detailed Data Descriptions

Version 3, Release 4

15 December 2023

Contents

Revision history

Version	Release	Date	Description
1	4	2014-02-24	Implementation of the Transparency Regulation.
2	5	2016-12-12	Revision of manual of procedures. General overhaul of the whole document. Details introduced on flow-based allocations for transparency regulation article 11.1.b. Amendments to articles 12.1.b, 12.1.e, 12.1.f, 13.1.a, 14.1.b, 14.1.d, 15.1.a-d and 17.1.h have impact on format of data publications.
3	0	2018-03-27	Implementation of Guideline on Electricity Balancing. Editorial corrections. Amendments introduced in chapters dedicated to the following transparency regulation articles: 17.1.a, 17.1.b, 17.1.c, 17.1.e, 17.1.f, 17.1.g, 17.1.h and 17.1.j. New chapters added for articles 12.3.a-l of the Guideline on Electricity Balancing.
3	1	2018-10-27	Amendments in response to ACER's opinion. The terms Market Balance Area and Balancing Time Unit have been deprecated and replaced by Scheduling Area and Imbalance Settlement Period (ISP). Introduced concepts of imbalance area, imbalance price area and load frequency control area. Added various other definitions related to Balancing. Reporting under TR articles 17.1.a, 17.1.d, 17.1.e, and 17.1.j will be phased out. Separate reporting for GL EB article 12.3.a introduced. Amendments in chapters dedicated to TR article 17 and GL EB article 12. Reordered and grouped chapters dedicated to TR article 17 and GLEB article 12.
3	2	2019-06-21	Under TR article 11.1.a, the evolution of the offered capacity for intraday allocations shall be published. Under EB GL articles 12.3.h&i, introduced aggregated reporting of market values, costs and benefits. Clarified the areas for which PDF documents will be published under EB GL articles 12.3.d, 12.3.g and 12.3.j. Editorial corrections.
3	3	2022-04-30	Introduced local balancing product type. Clarification on TR 12.1.f Total Scheduled Commercial Exchanges. Aligned TR art. 17.1.f with pricing methodology for standard products.

Version	Release	Date	Description
			Under GL EB art. 12.3.b added publishing of mFRR bids by activation type. Introduced reporting of activation purpose and reason for changes to bid availability. Added reporting for imbalance netting under GL EB art. 12.3.k. Updated GL EB article 12.3.e; activated volume will be published separately per activation type for mFRR standard product. Added definitions and references for CBMP, imbalance netting, mFRR activation types, European platforms, activation purposes and upward/downward regulation. Merged publications under TR art. 17.1.b&c, adding allocation timestamp and type of product. Allocation timestamp added to publication under EB GL art. 12.3.f for coherence. Clarified use of time horizon in both publications. Aligned publication under TR art. 17.1.g with the methodology for harmonised imbalance settlement. Clarified under EB GL art. 12.3.b that offered volume and price of a bid will be published with ISP resolution. Volumes and prices of balancing energy bids based on standard aFRR product, but selected for activation locally by TSO, will be reported separately under TR art. 17.1.f and EB GL art. 12.3.e.
3	4	2023-12-15	Added explanation of negative offered and forecasted capacity values. Introduced continuous allocations. Renamed publication under TR art. 12.1.d to Energy prices and introduced support for voluntary publication of intraday energy prices. Clarified that net positions published under 12.1.e convey implicit allocations only. Added publication of net positions under 12.1.f. Clarified under TR art. 11.1 that offered capacity for intraday timeframe will be published separately per implicit allocation. Clarified under TR art. 12.1.e that congestion income for intraday timeframe will be published separately per allocation. Added definitions of explicit, implicit and continuous allocations, nomination of transfer capacity, congestion income, auction revenue, net position, intraday timeframe and commercial schedules.

Version	Release	Date	Description
			Revised the description of physical flows (TR art. 12.1.g) and introduced the publication of transmission assets of type DC link along with their loss factors. Revised the description of the publication under EB GL art. 12.3.a and TR art. 17.1.h. Under TR article 11.1.b, de-anonymisation of the transmission assets and publication of additional parameters relevant to flow-based allocations. Production type “Energy Storage” introduced to represent batteries. Under TR article 11.1.b, publications of flow-based allocations extended with two attributes applicable to CWE region in day-ahead and intraday timeframes: F_uaf and minRAM_target.

1. Scope and Purpose

The Detailed Data Description specifies the details 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 and for the purpose of this document, referred to as the Transparency Regulation (TR).

Additionally and as foreseen under article 12(5) of the Commission Regulation (EU) No 2195/2017 of 23 November 2017, establishing a guideline on electricity balancing (hereafter referred to as GL EB), this document also outlines the details of the submission of data as required under article 12(3) of the GL EB.

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, in the TR, the guideline on electricity transmission system operation (GL SO) and in the GL EB.

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

Accepted balancing energy bid	With reference to GL EB article 29(6), an accepted balancing energy bid is a bid that has been requested for activation by a TSO or the activation optimization function in a common platform
Actual net generation	The actual output, expressed in megawatts (MW), that a generation unit is feeding into the transmission/distribution system.

auction revenue	Trade income from explicitly allocated transfer capacity
Automatic Frequency Restoration Reserve (aFRR)	As defined by GL SO article 2.2(99)
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.
Balancing product	May be either a standard product as defined by GL EB articles 2(28) and 25, a specific product as defined by GL EB articles 2(36) and 26 or a local product in all other cases
CNEC	A critical network element monitored under a contingency (formerly known as CB/CO – Critical Branch / Critical Outage)
combined dynamic constraint	a limit on the sum of power flows on a set of network elements or partial flows on a set of network elements for the purpose to respect dynamic stability limits
Common platform	As defined by GL EB chapter 2
congestion income	Revenues received as a result of implicit capacity allocation
continuous allocation	Continuous trade means matching of bids from buyers and sellers while allocating available transmission capacity on the basis of first-come-first/served, until the gate closure time before the MTU period for delivery. This is deemed equivalent to the term “continuous implicit allocation” as per CACM regulation recital 13. In the current SIDC continuous trading mechanism, transmission capacity is not priced.
Control area	As defined by TR article 2(6)
Coordinated Capacity Calculator (CCC)	As defined by article 2(11) of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (CACM)
Cross-border marginal price (CBMP)	As defined by the Pricing methodology (24 January 2020)

Countertrading	As defined by TR article 2(13)
Delivery period	As defined by GL EB article 2(32)
Direct activation (DA)	The activation of active power reserves that may be initiated at any point in time after scheduled optimization has begun for given MTU period. It relates to mFRR only
Downward regulation	A decrease in active power output or an increase in active power consumption. This corresponds to the term “negative balancing energy” used within the EB GL article 46.
ENTSO-E	The ENTSO for Electricity
European platform	European platforms for the exchange balancing energy and imbalance netting are defined by EB GL articles 19 through 22
explicit allocation	Allocation mechanism where allocation of capacity is made explicitly available to market participants (via an auction, a first-come/first-serve system, or any another method) in a first step. The energy is traded separately on commodity markets in a second step.
external constraint	The maximum import and/or export constraints of given bidding zone. An external constraint is not associated with any grid elements.
Flow based parameters	TR Art. 2 (definitions) states: ‘flow based parameters’ mean the available margins on critical network elements with associated power transfer distribution factors; The parameters per MTU period are represented by a matrix with one row for each constraint (also referred to as CNEC) determining the flow-based capacity domain constraints. For each row, the following columns: - constraint identifier - TSO(s) which introduced the CNEC. Normally only one TSO but may be two for cross-border CNECs. - the transmission asset name, type, location and EIC code of the critical network element (CNE) and, when applicable, of the contingency - In and Out bidding zones, indicating the direction of the energy flow on the CNE and on the contingency, respectively - indicator whether constraint is pre-solved (describes the flow-based domain) or not - power transfer distribution factor (PTDF) per bidding zone

	- remaining physical margin available for allocation (RAM) in MW - maximum allowable power flow (Fmax) in MW - reference flow (Fref) in MW, may be positive or negative - flow reliability margin (FRM) in MW - maximum admissible current (Imax) in Ampere - flows resulting from previously allocated cross-zonal capacities (Faac) in MW - individual value adjustment resulting from TSO validation process (IVA) in MW - flow for increasing the RAM due to remedial action (FRA) in MW - the linear approximation of a flow in the reference net position in a situation without any cross-zonal exchanges (F0) in MW - flow without commercial exchanges F0_wce (also referred to as F0_core) in MW - flow without commercial exchanges between bidding zones or other synchronous areas (F0_all) in MW - expected flow change due to non-costly remedial actions (F_nrao) in MW - flow after consideration of long-term nominations (F_LTN) in MW - coordinated value adjustment (CVA) in MW - the percentage of Fmax that need to be available as minimum RAM (Ramr) - adjustment of minimum RAM (AMR) in MW - flow resulting from assumed commercial exchanges outside the region (F_uaf) in MW, also referred to as margin available for cross-zonal trade - target capacity for exchanges by deducing the exchanges not related to the region (minRAM_target) expressed as a percentage, also referred to as the target minimum margin available for cross-zonal trade
Frequency Containment Reserve (FCR)	as defined by GL SO article 2.2(6)
Identification of the assets	National code or EIC (in case of the transparency platform)
Imbalance area	As defined by EB GL article 2(11)
Imbalance netting (IN)	As defined by SO GL article 3(128)

Imbalance price area	As defined by EB GL article 2(13)
Imbalance settlement period (ISP)	As defined by GL EB article 2(10) and will be harmonized to 15 minutes as required by GL EB article 53.1.
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.
implicit allocation	Allocation mechanism where allocation of capacity is made implicitly available to market participants in one step together with allocation of commodity (energy) via an organized market and power exchanges
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
interconnector	as defined by article 2(1) of of the Commission Regulation (EU) 2009/714 of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity
intraday timeframe	as defined by CACM article 2(37)

Load frequency control area	as defined by GL SO article 2.2(12)
Load frequency control block	As defined by GL SO article 2.2(18)

Local product	A balancing product that is neither a standard product nor a specific product. May be used to describe legacy products in the interim period only until the TSO joins the European platforms. As soon as the TSO joins the European platforms, only standard and specific products should be available.
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.
Manual Frequency Restoration Reserve (mFRR)	FRR that can be activated manually
Market Time Unit (MTU)	as defined by TR article 2(19)
net position	as defined by CACM article 2(5)
nomination of transfer capacity	Notification of the use of cross-zonal capacity by a physical transmission rights holder and its counterparty or an authorized third party (such as Power exchanges) to the respective TSO's

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

	– 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
Offered balancing energy bid	An offered balancing energy bid is a bid submitted before balancing energy gate closure time by a BSP to TSO with an offer (but not an obligation) to activate balancing energy.
Other remedial actions	As defined by SO GL Article 20(1)
Replacement Reserves (RR)	as defined by GL SO article 2.2(8)
Redispatching	As defined by TR article 2(26)

Scheduled activation (SA)	The activation of active power reserves that may only occur at a specific point in time in relation to given MTU. This relates to mFRR only.
Scheduled commercial exchanges	Scheduled commercial exchanges across bidding zone borders resulting from energy markets. The exchanges may constitute total values or refer to a specific timeframe or type of allocation.
Scheduling area	As defined by GL SO article 2.2(91) and article 110.2
Transmission Capacity Allocator (TCA)	As defined by TR article 2(28)
Unavailable balancing energy bid	As defined by GL EB article 29(14)
Upward regulation	Upwards regulation means an increase in active power output or a decrease in active power consumption. This corresponds to the term “positive balancing energy” used within the EB GL article 46.
Validity period	As defined by GL EB article 2(33)

3. Details and format of the submission of data

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

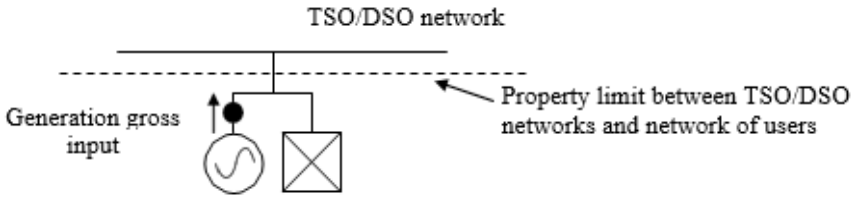
The information provided in H+1 has to be considered as operational data available from systems, information coming as raw metering data, which can be potentially updated based on more accurate metering data, for the sake of precision.

3.1 Preliminary notes for the descriptions

I. ‘Regulation Article’ refers to the Article of the TR or the GL EB.
II. ‘Regulation text’ refers to the relevant text of the Article of the TR or the GL EB 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 TR or the GL EB.
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	TR articles 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 and energy 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	TR articles 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	TR articles 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	TR articles 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	TR articles 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	TR articles 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); – Code of the bidding zone (EIC code); – 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 time unit the start time should be rounded to the start of the market time unit. If unavailability finishes in the middle of a market time 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	TR articles 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	TR articles 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	TR 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 TR article 9.1 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.

DC interconnectors	
Regulation Article	n/a
Regulation text	n/a

Detailed description	The details of all DC interconnectors are published on the central transparency platform; - name - location - loss factor (when available) - EIC - control areas - status and corresponding effective dates
Specification of calculation	n/a
Primary owner of the data	TSO
Data provider	TSO
Aggregation	n/a
Publication deadline for ENTSO-E	n/a
Updates	Whenever the transmission asset becomes subject to a modification.

3.6 Information relating to the unavailability of transmission infrastructure

Planned unavailability in the transmission grid	
Regulation Article	TR articles 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 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”) o Asset 1 : asset ID, location, type, reason, status o Asset 2 : .. - List of impacts (of the above “list of assets”) o Border A>B : new NTC (timeserie) o … o Border C>A : new NTC (timeserie) o 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	TR articles 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 TR 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	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	TR 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	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	TR 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)
- Forecasted capacities shall not be published for regions and time horizons where flow-based allocations are conducted

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

- Two cases could occur: “normal case” and “cancellation

	• 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 Between Norwegian bidding zones, the offered transfer capacity for implicit auctions can be negative. The purpose of negative offered transfer capacity is to ensure that the physical flows do not violate physical limitations of AC interconnectors, since physical flows may differ from the commercial exchange in an AC grid. The published values for the cross-zonal capacity offered to a market process should be equal to the corresponding trading constraints used by the market algorithm. The published forecasted values week/month/year ahead should be consistent with the expected minimum values to be offered to the market algorithms in the respected time frames. The cross-zonal capacity for a border between bidding zones may have a positive or a negative value for a given direction. A negative value implies a restriction imposed by the energy market algorithm to restrict the commercial exchange across the border to one direction in addition to limiting its value range. Such restriction may be necessary in order to ensure that the actual physical flow resulting from the commercial schedules stay within the operational limits of the grid.
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	TR 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	Refer to the definition of 'flow-based parameters'. Final data only shall be published. The following attributes apply to the publications for the Nordic region only: Faac, FRA, F0 The following attributes apply to the publications for the Core region only: F0_wce (also referred to as F0_core), F0_all, F_nrao, F_LTN, Ramr, CVA, F_uaf, minRAM_target In and Out bidding zones are the same in case the CNE is internal to a given bidding zone. A positive value in in the reference flow (Fref) indicates that in the base case energy will flow in the direction indicated by the In and Out bidding zones, while a negative value indicates that energy will flow in the opposite direction. A positive value in the expected flow change due to non-costly remedial actions (F_nrao) indicates that the RAM on the CNEC is increased by the optimization of remedial actions, while a negative value indicates the RAM is decreased. Combined dynamic, external and anonymous constraints do not contain any references to grid elements or contingencies. With reference to Article 2(d) of Council Directive 2008/114/EC, the CNEC identifier may be replaced with an anonymous identifier, which shall be stable across all relevant capacity calculation time frames. With reference to the same Article, the anonymous identifier may not even be stable. For such CNEC, no references to grid elements or Orientation will be included.
Specification of calculation	For the Core region: Refer to chapter 3 of the Explanatory note on the day-ahead and intraday common capacity calculation methodologies for the Core CCR. For the Nordic region: Refer to articles 12 and 13 of all TSOs' of the Nordic Capacity Calculation Region proposal for capacity calculation methodology
Primary owner of the data	TSO
Data provider	Transmission Capacity Allocator (TCA) or Coordinated Capacity Calculators (CCC) on behalf of TSOs

Aggregation	Not applicable
Publication deadline for ENTSO-E	One hour before spot market gate closure
Updates	Normally not expected

Yearly forecasted cross-zonal capacity	
Regulation Article	TR 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. 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 CCC
Data provider	TSO or CCC
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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 gate closure of 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	TR 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. 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 CCC
Data provider	TSO or CCC
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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 gate closure of the monthly allocation process.
Updates	Yes

Weekly forecasted cross-zonal capacity	
Regulation Article	TR 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. 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 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 CCC
Data provider	TSO or CCC

Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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

Day ahead forecasted cross-zonal capacity	
Regulation Article	TR article 11.2
Regulation text	No
Detailed description	The forecasted NTC (MW) per direction between bidding zones, including technical profiles. One value per MTU.
Specification of calculation	Optional publication
Primary owner of the data	TSO or CCC
Data provider	TSO or CCC
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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

Yearly offered cross-zonal capacity	
Regulation Article	TR 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: 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 CCC
Data provider	TSO or CCC
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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 gate closure of the yearly allocation process but no later than 15 December.
Updates	Yes

Monthly offered cross-zonal capacity	
Regulation Article	TR 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: 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 CCC
Data provider	TSO or CCC
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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 gate closure of the monthly allocation process.
Updates	Yes

Weekly offered cross-zonal capacity	
Regulation Article	TR 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: 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 CCC
Data provider	TSO or CCC
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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	Yes

Day ahead offered cross-zonal capacity	
Regulation Article	TR 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 CCC

Data provider	TSO or CCC
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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	TR 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, with separate publications for each intraday and continuous allocation. **b) In case of FB allocation method :** **Relevant flow-based parameters**
Specification of calculation	
Primary owner of the data	TSO or CCC
Data provider	TSO or CCC
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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	For intraday allocations: 1h before the first allocation and 15 minutes before any subsequent allocations. For continuous allocations: As soon as TSOs receive the information from the trading platform. A snapshot of the most recent values of the offered capacity shall be published at least every 15 minutes. The full evolution of the offered capacity shall be available for download no later than 24 hours after the last allocation. Note: real-time information is available on the trading platform. Due to continuous trading, the snapshot of the most recent offered capacity values published on Transparency Platform reflects the offer made of remaining capacity after previous trades. Therefore the displayed values may be smaller than the finally allocated capacity. For the evolution of the offered capacity, data consumers are referred to the download.
Updates	All changes to the offered capacity shall be published. Due to technical constraints in the Transparency Platform, data providers must avoid submitting updates more frequently than once every 15/5/1 minute, with the exact limit to be determined based on recurrent technical assessments. ENTSO-E will communicate the applicable limit to the concerned data providers. Note: Updates and evolution of intraday offered capacities are expected for continuous allocations only.

Restrictions on Direct Current links	
Regulation Article	TR article11.3
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	TR 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 TR article 11(4) 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, TCAs shall be considered as primary owners of the report they provide.
Publication deadline for	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	TR 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.
Specification of calculation	
Primary owner of the data	TCA / TSOs
Data provider	TCA / 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 TR 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	At the latest H+1 after each capacity allocation.
Updates	Normally not expected

Total Capacity Nominated from explicit allocation	
Regulation Article	TR 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. Note: Data published under TR article 12.1.f contains nominations from both explicit and implicit allocations.
	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. Schedules for Remedial actions shall be excluded from the published values.
Specification of calculation	
Primary owner of the data	TCA / TSO
Data provider	TCA / TSO
Aggregation	According to the actual cross zonal capacity calculation and allocation procedures, the data required under TR 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	TR 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 TR 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 TR article 11.
Updates	Normally not expected

Energy Prices	
Regulation Article	TR 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 energy prices in each bidding zone (Currency/MWh). Publication of energy prices is applicable for bidding zones covered by an implicit allocation of cross-border transmission capacity. In addition to the mandatory publication of day-ahead energy prices, data providers may on a voluntary basis publish intraday energy prices as well. 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	TR 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	**Net positions:** The netted sum of electricity exports and imports (i.e. commercial schedules) shall be published for each bidding zone per market time unit with indicator whether the value represents import or export. Separate publications are foreseen for the day-ahead timeframe and for the aggregated (i.e. total) net position. The *day-ahead implicit net position* consists of the sum of all commercial exchanges across all bidding zone borders from implicit day-ahead allocations. The *total implicit net position* consists of the sum of all commercial exchanges across all bidding zone borders from implicit day-ahead allocations as well as all implicit intraday allocations (including continuous allocations), as a single publication of values for the entire day. The explicit allocations, TSO-TSO schedules (due to redispatch and countertrade) and balancing schedules are not included. **Congestion income:** For congestion income the revenues received as a result of implicit capacity allocation shall be published 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. Separate publications are foreseen for the day-ahead and each intraday allocation.
Specification of calculation	Not applicable
Primary owner of the data	- net positions are calculated by Market Operator (PXs) or TSO - 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	For congestion income, the information shall be published no later than one hour after each capacity allocation. The day-ahead implicit net position shall be published no later than one hour after the last day-ahead allocation. The total implicit net position shall be published and updated no later than one hour after each intraday allocation.
Updates	Normally not expected

Scheduled commercial exchanges from explicit and implicit allocations	
Regulation Article	TR 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 MTU period and per direction between bidding zones the day-ahead and total scheduled commercial exchanges will be published. Additionally, for every MTU period the day-ahead and total net positions per bidding zone will be published. *Scheduled commercial exchanges* means aggregated schedules, in MW and per MTU period for all previous time horizons (e.g. yearly, monthly, quarterly, weekly, daily, intraday) corresponding to explicit allocations after each nomination process, implicit and continuous allocations. Total and day-ahead values shall be published separately: 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 total value published consists of all commercial exchanges in aggregated form from all allocations: Yearly, monthly, quarterly, weekly, daily and intraday. Data shall be published for one dayand resolution is market time unit. Schedules for remedial actions, exchange of balancing energy, emergency assistance and unintended flows shall be excluded from the published values.
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 TR 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. The transparency platform will calculate and publish the net position values per bidding zone based on the submitted cross-zonal values.
Publication deadline for ENTSO-E	The day-ahead values shall be published no later than one hour after the last day-ahead allocation. In case of explicit allocations, the day-ahead values shall be published no later than one hour after the day-ahead nomination process. The total values shall be published and updated no later than two hours after each intraday allocation. For explicit allocations, the total values shall be published and updated no later than two hours after each intraday nomination process.
Updates	Normally not expected

Physical Flows	
Regulation Article	TR 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 power between neighbouring bidding zones. For DC links, the values refer to the sending end, unless specified otherwise in the explanatory text accompanying the data publication (some TSOs publish mid-point values). The flow at the receiving end will be lower, and the difference is equal to the transmission loss. See also chapter 3.5 Transmission infrastructure. For AC links, losses are deemed as not significant.

Specification of calculation	Average netted values (in MW). Values are netted over the period of measurement.
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 TR 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 the end of the operating period
Updates	Yes

Transfer capacities allocated between bidding zones in Member States and third countries	
Regulation Article	TR 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 TR articles 12.1.a or 12.1.f, there need not to be any reporting under this TR 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	TR 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 from - the start and end date (day, hour) of the action; - comments. Although the Transparency Regulation requests the "capacity affected by the action taken (MW)", 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 platform)

[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.*

Data provider	TSOs (the initiator of the action must send the information to the transparency platform)
Aggregation	No
Publication deadline for ENTSO-E	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	TR 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 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	TR 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 TR articles 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	TR articles 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	TR articles 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	One week before the first year to which the data refers.
Updates	Usually no update

Day ahead aggregated generation	
Regulation Article	TR articles 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	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	TR articles 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 that will be published independently: • 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	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	TR articles 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
	– 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	TR articles 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	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	TR articles 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	TR articles 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	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	TR articles 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 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	D+5
Updates	Usually no update

Aggregated generation per type	
Regulation Article	TR articles 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	H+1 following the concerned MTU
Updates	Usually no update

Actual wind and solar power generation	
Regulation Article	TR articles 16.1.c and 16.2.c (merged with TR article 16.1.b)

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 TR article 16.1.b 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	H+1 following the concerned MTU
Updates	Multiple update possible based on measured data

Pumped storage/reservoir stored energy	
Regulation Article	TR articles 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 and energy storage units are considered as generation units and not consumption units.
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	End of the third working day of W+1.
Updates	Usually no update

3.13 Balancing

This chapter provides details of the balancing data submissions data required under TR article 17 and GL EB article 12(3). As in the previous chapters dedicated to Load, Transmission, Congestion management and Generation, each sub-chapter is dedicated to a specific regulation clause. Additionally and for these balancing data only, the sub-chapters have been organized into specific topics: Balancing capacity, Balancing energy, etc.

By default and unless explicitly stated otherwise, balancing transparency data shall be reported per scheduling area. Exceptionally data may have to be reported per load frequency control area when such area covers two or more scheduling areas and specific information is not available from the individual scheduling areas. This is the case for the TSOs Amprion, Creos and Terna.

3.13.1 Balancing capacity

Balancing capacity is expressed in MW/ISP and corresponding prices as currency/MW/ISP.

Amount and prices paid of balancing reserves under contract	
Regulation Article	TR articles 17.1.b&c and 17.2.a&b
Regulation text	TR articles 17.1.b and 17.2.a: 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. TR articles 17.1.c and 17.2.b: Prices paid by the TSO per type of procured balancing reserve and per procurement period (Currency/MW/period); … shall be published as soon as possible but no later than one hour after the procurement process ends.
Detailed description	The balancing reserves that are made available to the TSO by contract, either bilaterally or by tendering process, shall be published. For each procurement the following details are provided: - Type of reserve (e.g. Frequency Containment Reserve, Frequency Restoration Reserve manual and automatic, Replacement Reserve) - Source of reserves: load, generation or mixed generation/load - Direction: Up, down or symmetric - The delivery period for which the reserves are contracted - Scheduling area

	- Date and time of procurement - Type of product (mandatory when more than one exists in given scheduling area) - Time horizon, if applicable: Long term, multiple year, yearly, semestrial, quarterly, monthly, weekly, daily, intraday, hourly - Pricing scheme: Pay-as-bid or marginal - Volume per ISP - Price per ISP These volumes shall only include the pre-contracted reserves, i.e. volumes from the Procurement of Balancing Reserves. **They do not include volumes from the Procurement of Balancing Energy.** Volumes from international assistance between TSOs are not included as there is no corresponding capacity reservation between TSOs The information shall be published for every ISP. Note that different procurements can be done for the same type of reserve and for the same ISP, e.g. monthly and daily procurement of mFRR. Symmetric direction is only applicable to Frequency Containment Reserves, unless an exemption has been granted as foreseen under GL EB article 32(3). 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 delivery period. Time horizon depends on the procurement process and will be explained by the publication under TR article 17.1.a / GL EB article 12.3.g. Type of product shall be either standard, specific or local.
Specification of calculation	The specification of source of reserves does not imply separate products and prices for different sources, allowing for flexibility in the data publications regardless of market design. “Mixed” may also indicate that data provider is not aware of the source. Volumes are expressed in MW per ISP. Prices are expressed as currency/MW/ISP. Volumes and prices shall be published as time series with separate values per ISP for the entire duration of the delivery period. For symmetric reserves, only one price shall be published which applies to both upward and downward 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.
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	Volumes shall be published as soon as possible, at the latest two hours before the next procurement process takes place. In case procurement process occurs more frequently, data shall be published no later than by the start of the following procurement. Prices shall be published as soon as possible but no later than one hour after the procurement process takes place.
Updates	Volumes and prices shall preferably be submitted at the same time. However, the publication deadlines prescribed by TR articles 17.2.a&b indeed permit volumes to be submitted as an update to the already published prices, or vice versa.
Comments	Under TR article 17.1.b aggregated volumes are published, while publications under GL EB article 12.3.f will reflect individual procured offers. Under TR article 17.1.c a single average or marginal price is published, while under GL EB article 12.3.f prices of individual procured offers will be published.

Procured balancing capacity	
Regulation Article	GL EB article 12.3.f
Regulation text	information on offered volumes as well as offered prices of procured balancing capacity
Detailed description	Data shall describe individual bids, not aggregated values. Only accepted offers will be published. Data providers shall submit the following information describing the procured capacities: - Scheduling area - Type of reserve: FCR, aFRR, mFRR, RR - Direction: Up, Down, Symmetric (Symmetric only applicable to FCR) - Source: Generation, Load or Mixed (optional) - Type of product - Time horizon, if applicable: Long-term, multiple year, yearly, semestrial, quarterly, monthly, week-ahead, day-ahead, intraday, hourly - Delivery period - Date and time of procurement - Offered volume per ISP - Offered price per ISP Unit of measurement for capacity is MW and for price currency/MW/ISP. Time horizon depends on the procurement process and will be explained by the publication under GL EB article 12.3.g.
Specification of calculation	Type of product indicates the balancing reserve product. For a divisible bid, the maximum offered volume shall be submitted. In case of linked or multipart bids, the procured bids shall be submitted separately. Note: Offered volume of procured balancing capacity shall be published, which is not necessarily the same as procured volume. The initially offered volume may be higher than the actually procured volume. For example: TSO has an inelastic need of 90MW. Balancing service provider(s) make the following divisible bids: bid A offers 10 MW at price 5 € / MW bid B offers 100 MW at price 7 € / MW bid C offers 30 MW at price 9 € / MW. To satisfy its need, TSO procures all 10 MW of bid A, but only 80 MW of bid B. Under GL EB article 12.3.f TSO publishes bid A with 10 MW offered capacity and Bid B with 100 MW offered capacity. Under TR article 17.1.b TSO publishes the aggregated 90 MW of procured capacity.

Primary owner of the data	TSO or operator of balancing market
Data provider	TSO or operator of balancing market
Aggregation	Not applicable.
Publication deadline for	no later than one hour after the results of the procurement have been notified to the bidders
Updates	Not expected under normal circumstances

3.13.2 Balancing energy

Balancing energy is expressed in MWh and corresponding prices in currency/MWh/ISP, with the exception of balancing energy bids (GL EB articles 12.3.b and 12.3.e) that are expressed in MW since they consist of capacity offered for activation during a specific time interval. As long as the applicable market time unit is not shorter than the ISP, data shall be published per ISP.

Prices of activated balancing energy	
Regulation article	TR articles 17.1.f and 17.2.e
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 ISP separated by - Types of reserves - If applicable, source of reserves (generation or load or mixed generation/load) - Up and down regulation - Optionally, the type of product may be specified - Scheduling area 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. If no volumes were activated, no price will be published for the specific combination of type and source of reserve. For pay-as-bid price scheme the average price of all activated balancing bids of the respective ISP shall be published, and for marginal price scheme the marginal price shall be published. For every publication, the pricing scheme shall be indicated.

	The methodology for pricing balancing energy (as of 24 January 2020) applies to the prices published for standard products.
Specification of calculation	Types of reserves can be: - If applicable, Frequency Containment Reserve - Automatic Frequency Restoration Reserve - Manual Frequency Restoration Reserve - Replacement Reserve Prices for aFRR standard product selected for activation centrally by the aFRR platform are deemed equivalent to the CBMPs published under article 3.16 of the implementation framework for the aFRR platform. Prices for aFRR standard product selected for activation locally by the TSO are published separately under TR art. 17.1.f, with a single value per scheduling or imbalance price area, direction and ISP. For the mFRR standard product, prices shall be published separately for scheduled and direct activation. For direct activation the highest accepted price in upward direction and the lowest accepted price in downward direction (as per the second step in article 6.1 of the pricing methodology) will be published. The CBMPs for the given ISP and the following one may be determined by simply comparing with the published CBMPs for scheduled activation, as foreseen by the third step in article 6.1 of the pricing methodology. Price shall be average or marginal depending on the procurement process scheme (whether pay-as-bid or marginal). The pricing regime shall be indicated. By default, prices shall be reported by scheduling area, however in balancing markets based on an integrated scheduling process, where local congestion within the scheduling area may influence the balancing energy price, reporting by imbalance price areas is preferred.
Primary owner of the data	TSO/ European platform
Data provider	TSO/ European platform
Aggregation	TSO/ European platform
Publication deadline for ENTSO-E	As soon as possible but no later than one hour after the end of the ISP
Updates	To be updated if needed

Balancing energy bids	
Regulation Article	GL EB article 12.3.b
Regulation text	information on all balancing energy bids: i. type of product; ii. validity period; iii. offered volumes; iv. offered prices; v. information on whether the bid was declared as unavailable;
Detailed description	Data providers shall submit balancing energy bids containing the following minimum information: - Scheduling area - Reserve type: aFRR, mFRR, RR - Type of product - Direction: Up or Down - Validity period - Delivery period - Offered volume - Offered price - Indicator whether the bid was available or declared as unavailable per GL EB article 29(14) - Indicator whether it is a linked, exclusive or multipart bid, when applicable. Offered volume and price of a bid is published as a timeseries with separate values per ISP. Unit of measurement for volumes is MW and for prices currency/MWh. All bids shall be published, no matter whether they were accepted or not, except for those covered by GL EB article 12.4 and subject to NRAs' approval pursuant to GL EB article 5.4.a. Type of product shall distinguish between standard or specific product and for mFRR standard product whether it may be activated scheduled only or either direct or scheduled. Bids may be reported as local products until standard and specific products have been defined as foreseen by EB GL articles 25 and 26. Whether a bid is available or unavailable is only relevant for standard products which can be activated by other TSOs (i.e. cross-border scenarios). Optionally a free text comment may accompany the bid to provide further explanation and justification. As required by the methodology for determining activation purpose, for unavailable bids that were activated locally the

	activation purpose shall be declared, if information is available: Redispatching, countertrading or other remedial action. For unavailable RR standard product bids one of the following reasons shall be declared: Internal congestion or operational security constraints. For some areas and reserve types where the GL EB has not yet been implemented, prices may not be available. For reserve type FCR there are no balancing energy bids, only balancing capacity bids. Hence, publication of data for reserve type FCR is not applicable.
Specification of calculation	If the bid was converted into a standard product, the volume shall be reported as a standard product. For a divisible bid, the maximum offered volume per market time unit shall be published. For exclusive bids, the largest offered volume per market time unit shall be published. Anonymisation is assured by excluding the identity of the Balancing Service Provider. Note: A divisible bid may have only part of its offered energy accepted. Refer also to GL EB article 2(35). Exclusive bids are a set of associated bids and only one or none of the bids may be accepted. Linked bids are a set of associated bids and if one of them is accepted then all the other ones must also be accepted. Multipart bids are a set of associated bids and if one of them is accepted then all the other ones with a more competitive offer price must also be accepted. Publication of complex energy bids (linked, exclusive and multipart) shall be reassessed when there is a higher degree of certainty regarding their applicability and composition.
Primary owner of the data	TSO or operator of balancing market
Data provider	TSO or European platform
Aggregation	For linked and multipart bids, an aggregated volume shall be published per market time unit. For linked, multipart and exclusive bids, a single volume-weighted average price shall be published per market time unit.
Publication deadline for	The last market time unit of the bid's delivery period is deemed to be 'the relevant market time unit' for GL EB

ENTSO-E	articles 12.3.b, c and d. Therefore, the submission deadline shall be 30 minutes after the end of the delivery period.
Updates	The detailed reason for changes to the availability of a standard aFRR or mFRR bid are published separately, with a cross-reference to the data published under this EB GL art. 12.3.b. For details refer to the detailed data description dedicated to the additional transparency publications foreseen by the balancing platforms' implementation frameworks.

Information on bid conversion	
Regulation Article	GL EB article 12.3.c
Regulation text	information on whether the balancing energy bid was converted from a specific product or from an integrated scheduling process
Detailed description	Only relevant for bids that have undergone conversion to standard product from a specific product or from an integrated scheduling process. For such bids, the type of product prior to conversion shall be indicated. Submitted and published together with GL EB article 12.3.b.
Specification of calculation	Not applicable
Primary owner of the data	TSO or operator of balancing market
Data provider	TSO or operator of balancing market
Aggregation	Not applicable
Publication deadline for	30 minutes after the end of the delivery period
Updates	Not applicable

Aggregated balancing energy bids	
Regulation Article	GL EB article 12.3.e
Regulation text	aggregated information on balancing energy bids: i. total volume of offered balancing energy bids; ii. total volume of offered balancing energy bids separately per type of reserves; iii. total volume of offered and activated balancing energy bids separately for standard and specific products; iv. volume of unavailable bids separately per type of reserves;
Detailed description	Data providers shall submit aggregated volumes of offered, activated and unavailable balancing energy bids, indicating: - Scheduling area - Type of reserve: aFRR, mFRR, RR - Direction: Up or Down

	- Type of product Unavailable volumes are applicable for standard products only, as per GL EB article 29.14. Data is submitted and published per ISP. Unit of measurement is MW. For mFRR standard product, the activated volume will be published with separate values for scheduled and direct activation. For aFRR standard product, the activated volume will be published with separate values reflecting whether the bids were selected for activation centrally by the European platform or locally by TSO. For reserve type FCR there are no balancing energy bids, only balancing capacity bids. Hence, publication of data for reserve type FCR is not applicable. Note: Publication of data under items (ii) and (iii) are deemed to fulfill the obligations of TR articles 17.1.d and 17.1.e as well.
Specification of calculation	Specific products converted to standard products shall be reported as standard products. For every ISP, the submitted volumes shall be the average value of capacity in MW. If there were no offered, activated or unavailable bids for a given ISP, corresponding zero volumes shall be explicitly reported.
Primary owner of the data	TSO
Data provider	TSO or European platform
Aggregation	Data provider shall aggregate per reserve type and type of product. Central transparency platform shall aggregate the grand totals foreseen under points (i) and (ii).
Publication deadline for ENTSO-E	30 minutes after the end of the ISP
Updates	Not expected under normal circumstances

Accepted aggregated offers (volumes)	
Regulation Article	TR articles 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	With the entry into force of GL EB, it is deemed sufficient that the aggregated offers of balancing energy are published under GL EB article 12.3.e.ii. As a transitory measure, separate publication of data under TR article 17.1.d, as prescribed by Manual of Procedures (MoP) version 2.1, will be supported.

Volumes of activated balancing energy	
Regulation Article	TR articles 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	With the entry into force of GL EB, it is deemed sufficient that the activated balancing energy is published under GL EB article 12.3.e.iii. As a transitory measure, separate publication of data under TR article 17.1.e, as prescribed by Manual of Procedures (MoP) version 2.1, will be supported.

3.13.3 Imbalance

Imbalance prices	
Regulation Article	TR articles 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 ISP shall be published as soon as possible. If final prices are not available intermediate figures are published and shall be updated with final values as soon as possible.

GL EB article 55 prescribes the following:

	Imbalance price positive	Imbalance price negative
Positive imbalance	Payment from TSO to BRP	Payment from BRP to TSO
Negative imbalance	Payment from BRP to TSO	Payment from TSO to BRP

The table is applied as follows:

If the Balancing Responsible Party (BRP) has an energy deficit (i.e. negative imbalance) and the published price is positive, the BRP pays to TSO for the energy that the BRP receives.

If the BRP has an energy deficit (i.e. negative imbalance) and the published price is negative, the TSO pays to BRP for the energy that the BRP receives.

If the BRP has an energy surplus (i.e. positive imbalance) and the published price is positive, the TSO pays to BRP for the energy that the TSO receives.

If the BRP has an energy surplus (i.e. positive imbalance) and the published price is negative, the BRP pays to TSO for the energy that the TSO receives.

Specification of calculation

EB GL art. 55.3 stipulates that each TSO shall determine the imbalance price for each imbalance direction in its imbalance price area(s) for every ISP.

Imbalance prices shall be reported by default per imbalance price area, which in the majority of cases coincide with the scheduling area. The imbalance price area may differ from the scheduling area when the bidding zone covers several control areas as foreseen by GL SO article 110.2, when required by EB GL article 2(13) or when balancing markets are based on an integrated scheduling process, where local congestion within the scheduling area may influence the imbalance price.

Two different price regimes are foreseen by article 2 of the imbalance settlement harmonization methodology:

1. Single imbalance pricing; the price for positive imbalance and the price for negative imbalance are equal in sign and size.
2. Dual imbalance pricing; the price for positive imbalance is not equal to the price for negative imbalance in sign

	and/or size. Articles 9.6 of the imbalance settlement harmonization methodology foresees that one or several of the following additional components may be included in the price calculation: (a) a scarcity component to be used in nationally defined scarcity situations; (b) an incentivising component to be used to fulfil nationally defined boundary conditions; (c) a component related to the financial neutrality of the connecting TSO. According to article 9.7 of the same methodology, the values of these components shall be published for those ISPs in which they were applied. The terms and conditions published under EB GL art. 12.3.g provide the detailed explanation how the components are applied in the imbalance price calculation. Status of data is either intermediate or final. Imbalance prices and additional components are expressed in currency/MWh.
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	In case data is intermediate, the prices shall be updated when final values become available.

Total imbalance volume	
Regulation Article	TR articles 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	Two values shall be published 1) Total aggregated volume of the imbalance D (i.e. open loop area control error, see specification of the calculation below) per ISP expressed as a single absolute value in MWh and accompanied by an explicit indicator expressing deficit, excess or balance. 2) The difference between measured MV and scheduled flows SV over all interconnectors: MV – SV, expressed as a signed value in MWh per ISP. If final values are not available an estimated value is published and shall be updated with final values as soon as possible (refer to Updates below). The status of the data (estimated or final) shall also be indicated.

Specification of calculation	The error D = (MV - SV) - AR + BEx, where D = imbalance volume MV = sum of measured flows over all interconnectors SV = sum of scheduled flows over all interconnectors. It should include all planned exchanges, hence also balancing energy exchanges. HVDC ramping should not be included. AR = activated reserves within a control area/block AR = RR + mFRR + aFRR + IN - kΔf BEx = TSO-TSO energy exchange due to balancing and/or other purposes (e.g. emergency energy delivery, redispatching) IN = Imbalance Netting kΔf = frequency bias factor * frequency deviation = estimated FCR activation Calculation of AR may be based upon volumes requested for activation by TSO when metered volumes, as actually delivered by the BSP(s), are not known to the TSO by the submission deadline. AR>0 means net up regulation AR<0 means net down regulation D>0 means surplus D<0 means deficit MV>0, SV>0 means export direction MV<0, SV<0 means import direction BEx>0 means that TSO has a surplus of balancing energy compared to its local needs BEx<0 means that TSO has a deficit of balancing energy compared to its local needs With reference to GL EB article 54.6, deficit is equivalent to negative imbalance while excess is equivalent to positive imbalance. Note: By default data shall be published by imbalance area, which in the majority of cases coincide with scheduling area. Imbalance area may differ from scheduling area as foreseen under EB GL article 54.2
Primary owner of the data	TSO
Data provider	TSO
Publication deadline for ENTSO-E	As soon as possible and no later than 30 minutes after the end of the ISP.

Updates	In case the data are preliminary, the figures shall be updated when imbalance adjustment (as foreseen under GL EB article 49) is known and not later than by the start of the imbalance settlement process (as foreseen under GL EB article 52).

Current balancing state	
Regulation Article	GL EB article 12.3.a
Regulation text	information on the current balancing state of its scheduling area
Detailed description	Data providers shall submit the total imbalance volume(i.e. open loop area control error), specifying: - imbalance area (refer to Note below) - Error - State: Excess, Deficit or Balanced - Time interval Data is submitted and published with minute resolution. Unit of measurement is MW. With reference to GL EB article 54.6, deficit is equivalent to negative imbalance while excess is equivalent to positive imbalance. Note: By default data shall be published per imbalance area, which in the majority of cases coincide with the scheduling area. Imbalance area may differ from scheduling area, as noted in EB GL article 54.2. In case the control area covers two or more scheduling areas, reporting by load frequency control area is preferred.
Specification of calculation	The formula defined for total aggregated imbalance volume in TR article 17.1.h shall be applied. The error is calculated as an average value over each minute.
Primary owner of the data	TSO
Data provider	TSO
Aggregation	Not applicable

Publication deadline for ENTSO-E	30 minutes after the end of the minute being described
Updates	Not foreseen.

3.13.4 Financial balance

Monthly financial balance	
Regulation Article	TR 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/procurement of capacity from balancing reserves as well as from the activation of balancing energy from contracted and/or non-contracted reserves. – The net income represents netted value (income and expenses) resulting exclusively from the settlement of imbalance with BRPs. GL EB article 55 is applied as follows: A positive value for expenses means cash flow from TSO to BSPs while a negative value implies that cash flows from BSPs to TSO. A positive value for net income means that cash flows from BRPs to TSO while a negative value implies that cash flows from TSO to BRPs. The information shall be published per control 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	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

3.13.5 Cross-border capacity

Allocation of cross-zonal balancing capacity	
Regulation Article	GL EB article 12.3.h
Regulation text	information on the allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves: i. date and time when the decision on allocation was made ii. period of the allocation iii. volumes allocated iv. market values used as a basis for the allocation process
Detailed description	Data published shall describe each individual allocation. Data providers shall indicate: - In and Out bidding zones or technical profiles, where applicable - Reserve Type - Time horizon: Long-term, week-ahead or day-ahead - Delivery period - Allocated cross-zonal capacity - Market value for exchange of balancing capacity or sharing of reserves - Market value for exchange of energy (within given time horizon Long-term /Week-ahead/Day-ahead) - Decision timestamp Unit of measurement for capacity is MW/MTU. When market value can be determined per direction across borders it is measured by currency/MW/MTU. When market value is determined for an entire region and time horizon, its unit of measurement is currency. Notes: The MTU used in single day-ahead coupling applies. Region refers to a balancing capacity cooperation between two or more TSOs.

Specification of calculation	Market values are calculated according to GL EB articles 39 through 42. As a transitory measure, until the prescribed methodologies have been fully implemented, a single value may be reported. Allocated cross-zonal capacity is provided as a time series of zero or positive values with MTU resolution for the duration of the entire allocation. Depending on the allocation mechanism, market values may either be provided with similar time series per direction across borders or as single daily/weekly/long-term values for the entire region and time horizon.
Primary owner of the data	TSO or operator of balancing market
Data provider	TSO or operator of balancing market
Aggregation	Not applicable
Publication deadline for ENTSO-E	24 hours after the allocation and no later than 6 hours before the use of the allocated cross-zonal capacity
Updates	Not expected under normal circumstances. Note that data required under GL EB article 12.3.i are to be submitted as an update to the data submitted under this GL EB article 12.3.h.

Use of cross-zonal balancing capacities	
Regulation Article	GL EB article 12.3.i
Regulation text	information on the use of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves: i. volume of allocated and used cross-zonal capacity per market time unit ii. volume of released cross-zonal capacity for subsequent timeframes per market time unit iii. estimated realised costs and benefits of the allocation process

Detailed description	The allocations are the same as the ones described under GL EB article 12.3.h. Allocated capacity represents reserved cross-zonal capacity, which is available ex-ante and published under GL EB article 12.3.h. Other data is available only ex-post. Data providers shall submit the following information for every allocation: - In and out bidding zones or technical profiles, where applicable - Reserve Type - Time horizon: Long-term, week-ahead or day-ahead - Delivery period - Used and released volumes - Estimated realised costs - Estimated realised benefits Volumes are expressed in MW/MTU. When costs and benefits can be determined per direction across borders they are expressed in currency/MW/MTU. When costs and benefits are determined for an entire region and time horizon, the unit of measurement is currency. Notes: The MTU used in single day-ahead coupling applies. Region refers to a balancing capacity cooperation between two or more TSOs.
Specification of calculation	Allocated x-zonal capacity (A) represents reserved x-zonal capacity. Released cross-zonal capacity (R) represents the amount of allocated cross-zonal capacity that was returned to energy markets (yearly, monthly, day-ahead, intraday). Used cross-zonal capacity (U) represents the amount of cross-zonal capacity that was used for balancing purposes only: U = A – R. Volumes shall be published as time series of zero or positive values with MTU resolution covering the complete delivery period. Depending on the allocation mechanism, costs and benefits may either be provided with similar time series per direction across borders or as single daily/weekly/long-term values for the entire region and time horizon.
Primary owner of the data	TSO or operator of balancing market
Data provider	TSO or operator of balancing market

Aggregation	Not applicable
Publication deadline for ENTSO-E	one week after the use of allocated cross-zonal capacity
Updates	Not expected under normal circumstances. Note that data required under this GL EB article 12.3.i are to be submitted as an update to the allocated capacity previously submitted under GL EB article 12.3.h.

Aggregated volumes of offers for cross-border balancing activation	
Regulation Article	TR articles 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	With the entry into force of GL EB, it is deemed sufficient that aggregated volumes of offered balancing energy bids are published under GL EB 12.3.e(iii). As a transitory measure, separate publication of data under TR article 17.1.j, as prescribed by Manual of Procedures (MoP) version 2.1, will be supported.

Prices for cross-control area balancing for bids and offers	
Regulation Article	TR articles 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	With the entry into force of GL EB, it is deemed sufficient that balancing energy prices are published under TR article 17.1.f. As a transitory measure, separate publication of data under TR article 17.1.j, as prescribed by Manual of Procedures (MoP) version 2.1, will be supported.

Volumes of cross-control area balancing energy activated	
Regulation Article	TR articles 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	With the entry into force of GL EB, it is deemed sufficient that aggregated volumes of activated balancing energy bids are published under GL EB 12.3.e(iii). As a transitory measure, separate publication of data under TR article 17.1.j, as prescribed by Manual of Procedures (MoP) version 2.1, will be supported.

3.13.6 Balancing rules, terms, conditions and common report

Terms and conditions	
Regulation Article	GL EB article 12.3.g
Regulation text	the initial terms and conditions related to balancing referred to in Article 18
Detailed description	A single PDF document shall be published, covering also the obligations under TR article 17.1.a. The report shall explicitly indicate the GL EB and TR articles that its content refers to. By default, the PDF shall be published per control area. However, as foreseen by EB GL article 18.1, a single publication is possible when the terms and conditions are applicable to a load frequency control area consisting of two or more TSOs.
Specification of calculation	Not applicable
Primary owner of the data	TSO
Data provider	TSO
Aggregation	Not applicable
Publication deadline for ENTSO-E	one month before the application and any amendments to the terms and conditions immediately following approval by the relevant regulatory authority
Updates	When amended

Rules on balancing	
Regulation Article	TR 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	With the entry into force of GL EB, the rules on balancing shall be published together with the information required by GL EB article 12.3.g. As a transitory measure, separate publication of data under TR article 17.1.a, as prescribed by Manual of Procedures (MoP) version 2.1, will be supported.

Information on bid conversion into standard products	
Regulation Article	GL EB article 12.3.d
Regulation text	information regarding how balancing energy bids from specific products or from integrated scheduling process have been converted into balancing energy bids from standard products
Detailed description	There will be a PDF with static information for every applicable combination of specific product and standard product how conversion is performed. Likewise, information describing applicable conversion of bids from integrated scheduling process into standard products will be provided. This information complements the data published under GL EB articles 12.3.b&c. By default, the PDF shall be published per scheduling area. However, if the information applies to more than one scheduling area it may be published per control area.
Specification of calculation	Not applicable
Primary owner of the data	TSO or operator of balancing market
Data provider	TSO or operator of balancing market
Aggregation	Not applicable

Publication deadline for	30 minutes after the end of the delivery period
Updates	Data provider shall update PDF whenever a new product is introduced or the product conversion is modified.

Approved methodologies	
Regulation Article	GL EB article 12.3.j
Regulation text	approved methodologies referred to in Articles 40, 41 and 42
Detailed description	PDF document per region
Specification of calculation	Not applicable
Primary owner of the data	TSO
Data provider	Balancing capacity cooperation or TSO
Aggregation	Not applicable
Publication deadline for ENTSO-E	one month before the application
Updates	When amended

Algorithm	
Regulation Article	GL EB article 12.3.k
Regulation text	description of the requirements of any algorithm developed and amendments to it referred to in Article 58
Detailed description	PDF document per process (RR, mFRR, aFRR), IN
Specification of calculation	Not applicable
Primary owner of the data	European platform
Data provider	European platform
Aggregation	Not applicable
Publication deadline for ENTSO-E	one month before the application
Updates	When amended

common annual report	
Regulation Article	GL EB article 12.3.l
Regulation text	common annual report referred to in Article 59

Detailed description	PDF document. A detailed version and a shorter version.
Specification of calculation	Not applicable
Primary owner of the data	ENTSO-E
Data provider	ENTSO-E
Aggregation	Not applicable
Publication deadline for ENTSO-E	Detailed version two years after entry into force of GL EB. Shorter version three years after entry into force of GL EB.
Updates	Every second year