# Terms and conditions for Balance Responsible Parties in the Luxembourg scheduling area in accordance with Article 18 of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing system

Version dated 06.01.2026

## Article 1: Purpose and scope

The present terms and conditions for Balance Responsible Parties have been established by Creos Luxembourg S.A. (hereinafter "Creos"), the Luxembourg transmission system operator (hereinafter "TSO"), in accordance with Article 18 of Commission Regulation (EU) No 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing, as amended (hereinafter referred to as the "EBGL Regulation").

In accordance with Article 18(1) of the EBGL Regulation, the TSOs of a Member State shall, no later than six months after its entry into force, develop a proposal regarding:

a) the terms and conditions for Balancing Service Providers (BSPs);

b) the terms and conditions for Balance Responsible Parties (BRPs).

Furthermore, in accordance with Article 18(2) of the EBGL Regulation, the rules for the suspension and restoration of market activities as well as the rules for settlement in case of market suspension pursuant to Articles 36(1) and 39(4) of Commission Regulation (EU) 2017/2196 of 24 November 2017 establishing a network code on the state of emergency and the restoration of the transmission system, are taken into account.

According to Article 18(3) of the EBGL Regulation, Creos has coordinated with the distribution system operators ('DSOs') that may be affected by the present terms and conditions, as well as with other DSOs and stakeholders during the development phase referred to in Article 10 of the EBGL Regulation.

Given that the Creos control area does not have the necessary reserves to cover its own supply and demand of electricity, it has been decided with the German TSO Amprion GmbH (hereinafter referred to as "Amprion"), in accordance with Article 120 of Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline for the operation of the electricity transmission system[1] to form a common load-frequency control area (LFC area), in which Amprion is responsible for the procurement of balancing services in a transparent, non-discriminatory and market-based process.

Balancing Service Providers with facilities installed in Luxembourg are entitled to participate in the German balancing energy market. This requires providers of balancing services to bundle the facilities from Creos' transmission grid area into a pool of the product types aFRR

[1] COMMISSION REGULATION (EU) 2017/1485 of 2 August 2017 laying down a guideline for the operation of the electricity transmission system

or mFRR, and to manage them via a balancing perimeter. Further information and legal requirements under Articles 18(4) and 18(5) of the EBGL Regulation can be found in the terms and conditions for balancing service providers for frequency restoration with automatic (FCR[2] and aFRR) or manual (mFRR) activation[3].

This document lists the legal requirements under Article 18(6) of the EBGL Regulation for the activity of Balance Responsible Parties and applies to the Luxembourg scheduling area.

Creos is responsible for the role of Balance Coordinator and connecting TSO for the Luxembourg scheduling area regarding the terms and conditions listed here. All relevant documents and explanations related to these terms and conditions are available on the website of the Balance Coordinator[4].

Specifications and explanations of scheduling can be found in the ENTSO-E Scheduling System.

According to Article 18(6) of the EBGL Regulation, the individual determinations as listed below are defined in Articles 3 to 14 of this document:

| **Points in Article 18(6) of the EBGL Regulation** | | **Articles in the terms and conditions** |
|---|---|---|
| a) | Definition of balance responsibility for each connection in a way that avoids any gaps or overlaps in the balance responsibility of different market participants providing services to that connection | • Article 3 |
| b) | Requirements for becoming a Balance Responsible Party | • Article 4 |
| c) | Requirement that all Balance Responsible Parties shall bear financially responsible for their imbalances, and that such imbalances shall be settled with the connecting TSO | • Article 5 |
| d) | Requirements on data and information to be delivered to the connecting TSO to calculate the imbalances | • Article 6 |
| e) | Rules for Balance Responsible Parties to change their schedules prior to and after the intraday energy gate closure time pursuant to paragraphs 3 and 4 of Article 17 of the EBGL Regulation | • Article 7 |

[2] Regulation ILR/E20/8 of 24 March 2020 on the terms of network access and participation in the market for Frequency Containment Reserve

[3] Terms and conditions for balancing service providers for spectrum restoration with automatic (aFFR) or manual (mFFR) activation in accordance with Article 18 of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing.

[4] www.creos.net

| | | |
|---|---|---|
| f) | Rules for the settlement of balance responsible parties defined pursuant to Chapter 4 of Title V of the EBGL Regulation | • Article 8 |
| g) | Delineation of imbalance areas pursuant to Article 54(2) of the EBGL Regulation and of imbalance price areas | • Article 9 |
| h) | Maximum period for the finalisation of the settlement of imbalances with Balance Responsible Parties for any given imbalance settlement period pursuant to Article 54 of the EBGL Regulation | • Article 10 |
| i) | Consequences in case of non-compliance with the terms and conditions applicable to Balance Responsible Parties | • Article 11 |
| j) | Obligation for Balance Responsible Parties to notify the connecting TSO of any modification of their position | • Article 12 |
| k) | Settlement rules pursuant to Articles 52, 53, 54 and 55 of the EBGL Regulation | • Article 13 |
| l) | Where applicable, the provisions for the exclusion of imbalances from the imbalance settlement when they are associated with the introduction of ramping restrictions for the alleviation of deterministic frequency deviations pursuant to Article 137(4) of Regulation (EU) 2017/1485. | • Not applicable |

**Article 2: Definitions**

The terminologies used in these terms and conditions correspond to the definitions contained in Article 2 of the EBGL Regulation and in Article 3 of Commission Regulation 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation.

For the purposes of this document, the definitions given in §1 of the amended law of 1 August 2007 on the organisation of the Electricity Market Luxembourg, hereinafter referred to as the Electricity Market Law, will be applicable.

The following definitions shall also apply:

(1) "Local Issuing Office for EIC Codes": Natural or legal person who performs the role of assigning EIC codes, which serves, inter alia, as identifiers for balancing perimeters;

(2) 'EIC Code': ENTSO-E Identification Code; allocated by an issuing office authorised by the ENTSO-E, which allows, among other things, the unique identification of a balancing perimeter;

(3) "Aggregated Load Curve": Load curve calculated by each distribution grid operator for each active balancing perimeter within its network. The aggregated load curve of a balancing perimeter represents the sum of the measured load curves of the metering points assigned to the balancing perimeter for a given distribution grid.

According to the market communication, distribution grid operators have the option of categorising delivery points and calculating several aggregations per balancing perimeter. The aggregated load curves must distinguish between consumption and injections and are the sole responsibility of the respective distribution grid operator;

(4) 'Balancing Energy': means the energy provided to maintain the balance between injections and consumptions of a given balancing perimeter. The sum of the balancing energies allocated to the active balancing perimeters within the scheduling area corresponds to the balancing energy of the scheduling area;

(5) "ESS": ENTSO-E Scheduling System; scheduling system developed by ENTSO-E;

(6) "ENTSO-E": European Network of Transmission System Operators for Electricity; European Organisation of Transmission System Operators;

(7) 'Differential Balancing Perimeter': means a balancing perimeter for which a distribution system operator is responsible and which is used to record the differential consumption volume of a given system, which is calculated on the basis of the difference between the physical injections and the consumption of end customers in that system;

(8) "Market Communication": Model of Market Communication for Electricity in Luxembourg; defines business processes between market participants that are to be handled via the standardised rules of market communication, as well as the data formats to be used for this purpose.

(9) Balancing perimeter "FC-PROD[5]" and "FC-CONS[6]": The two balancing perimeters "FC-PROD" (Forecast Production) and "FC-CONS" (Forecast Consumption) are used exclusively to monitor the scheduling messages exchanged between the various balancing perimeters. They allow the Balance Coordinator to check the consistency of the balance from incoming and outgoing scheduling messages and to provide a general estimate of the load.

(10) FC-Export: Forecast of energy exported to other balancing perimeters

(11) "Business Day": means any day other than a Saturday, Sunday or public holiday in the Grand Duchy of Luxembourg.

(12) "ILR": means the *Institut Luxembourgeois de Régulation*, the national regulatory authority of the Grand Duchy of Luxembourg.

## Article 3: Definition of Balance Responsibility

All electrical energy exchange, injection and consumption, must always be assigned to a balancing perimeter. This balancing perimeter is managed by a Balance Responsible Party, that must hold a valid balancing agreement with the Balance Coordinator, in which its

[5] EIC-Code: 11XFC-PROD-----E
[6] EIC-Code: 11XFC-CONS-----0

responsibility for one or more balancing perimeter(s) is specified. Each balancing perimeter is identified by a unique EIC code and can be managed by only one Balance Responsible Party at a time.

## Article 4: Requirements for becoming a Balance Responsible Party

The status of Balance Responsible Party for a balancing perimeter begins with the definition of the EIC identification code within the framework of a balancing agreement between the Balance Responsible Party and the Balance Coordinator. For each balancing agreement, a Balance Responsible Party can specify a maximum of 10 unique EIC codes, i.e. balancing perimeter. Changes in the assignment of these EIC codes are possible at any time and must be confirmed by the Balance Coordinator. No sub-balancing perimeters can be assigned.

The specified EIC codes must be available to the Balance Responsible Party, otherwise he must request the allocation of an EIC code from a Local Issuing Office (LIO) in accordance with the ENTSO-E Reference Manual. The Balance Responsible Party must declare to the Balance Coordinator the maximum values of energy and power to be exchanged in the scheduling for each balancing perimeter. The notification of changes to these maximum values can be carried out with at least 5 working days in written or electronic form. In the first quarter of each year, the Balance Coordinator shall check the declared maximum values against the actual billing data for the previous year. In case of a difference of more than ±20% from the declared maximum values, the Balance Coordinator informs the Balance Responsible Party about the necessary adjustment of the maximum values by the Balance Responsible Party. If the Balance Responsible Party does not comply with the request for adjustment, the Balance Coordinator shall be entitled to issue a written warning according to Article 11.

The Balance Responsible Party must provide financial security to the Balance Coordinator in order to put one or more balancing perimeter into operation.

This financial security can take the form of:

(i) **an unconditional and irrevocable bank guarantee** issued either by the Balance Responsible Party <u>or by its parent company</u>, provided it is issued by a financial institution established in an EU Member State, a member of the European Free Trade Association, or in the United Kingdom, and meets the requirements of a first-demand guarantee; or

(ii) a **cash deposit**, made by bank transfer to an account designated by the Balance Coordinator. This deposit shall serve as financial security under the same conditions as a bank guarantee. Upon request, the Balance Coordinator shall provide the payment instructions and confirm the reception of the funds; or

(iii) a demonstration of **creditworthiness** through an acceptable long-term credit rating, as defined below; or

(iv) **a valid**, **unconditional and irrevocable parental guarantee** issued by the parent company and provided that the parent company has an acceptable credit rating, as defined below.

A credit rating is considered acceptable if it corresponds to:

- at least **BBB+** by Standard & Poor's or Fitch Ratings, or
- at least **Baa1** by Moody's Investor Services.

Proof of the applicable credit rating must be submitted no later than the start date of the balancing perimeter and must be renewed annually by 1st of January.

If no proof is provided within the required timeframe, or if, at any time, the Balance Responsible Party or the parent company no longer meets the acceptable credit rating criteria, it shall immediately notify the Balance Coordinator by registered mail, and shall, within fifteen (15) Business Days, provide the Balance Coordinator with a new financial security (bank guarantee or cash deposit) meeting the requirements set out above, calculated based on the following formula :

$$Minimun\ amount\ of\ the\ bank\ guarantee\ or\ cash\ deposit =$$

$$FC\text{-}Cons_{max,168h} \times \emptyset reBAP_{12months} + 2 \times FC\text{-}Export_{max,day} \times \emptyset reBAP_{12months}$$

with

$FC\text{-}Cons_{max,168h}$ = Declared value of the maximum energy per week [MWh] for FC-CONS (forecast consumption)

$FC\text{-}Export_{max,day}$ = Declared value of the maximum energy per day [MWh] for FC-Export

$\emptyset reBAP_{12months}$ = Average imbalance price of the last 12 fully completed calendar months

Both the Balance Coordinator and the Balance Responsible Party are entitled to request an adjustment of the amount of the bank guarantee or the cash deposit if either:

- the maximum values declared by the Balance Responsible Party change, or
- the average imbalance price has changed,

and as a result, the recalculated amount deviates by 20% or more compared to the currently deposited bank guarantee or cash deposit.

The bank guarantee or cash deposit shall be returned:

(i) if the balancing agreement is terminated and all outstanding obligations are settled;

(ii) if it is replaced by another valid guarantee meeting the applicable criteria; or

(iii) if the Balance Responsible Party or its parent company subsequently demonstrates an acceptable credit rating in accordance with the applicable provisions. In the case of a credit rating held by the parent company, the return of the bank guarantee or the cash deposit is subject to the provision of a valid, unconditional and irrevocable parental guarantee in favour of the Balance Coordinator.

The bank guarantee must explicitly state that the issuing bank undertakes to fulfil payment obligations on behalf of the Balance Responsible Party **immediately and without condition** upon first written request from the Balance Coordinator, without requiring any prior claim, justification, or legal proceedings.

In all cases in which the Balance Responsible Party fails to meet its payment obligations, the bank must assume the payment obligations of the Balance Responsible Party upon first request of the Balance Coordinator. This unconditional and irrevocable substitution as principal obliges the bank to pay the balance owed by the Balance Responsible Party to the Balance Coordinator without delay, up to the maximum amount specified in the bank guarantee. The bank guarantee must contain obligations of the bank in relation to the above.

If the bank guarantee is issued by the parent company, it must be provided under the same terms and must be accompanied by a valid and unconditional parental guarantee that complies with all applicable criteria.

If the bank guarantee is partially drawn upon, the Balance Responsible Party shall, upon request by the Balance Coordinator, provide a new or amended bank guarantee restoring the original guaranteed amount. Such replacement must be provided within ten (10) Business Days, unless otherwise agreed.

## Article 5: Requirement that all Balance Responsible Parties shall be financially responsible for their imbalances, and that the imbalances shall be settled with the connecting TSO

The Balance Responsible Party is obliged to report to the Balance Coordinator the most accurate generation and load forecasts possible for each of his balancing perimeters specified in the balancing agreement. This so-called scheduling must be exchanged with the Balance Coordinator within the deadlines defined in Article 7.

The Balance Coordinator is then responsible for determining and setting the imbalances of all active balancing perimeters in the Luxembourg scheduling area. This settlement is based on the final confirmed scheduling, as well as on the energy supply, injection and consumption, which is transmitted to the Balance Coordinator. Imbalances are calculated every quarter of an hour and are invoiced once a month to the Balance Responsible Party. The Balance Responsible Party bears financial responsibility for its imbalances, which are to be settled with the Balance Coordinator.

Balancing perimeters that do not supply energy to end customers (injection, consumption) are settled with other balancing perimeters purely via their scheduling, which has been finally confirmed by the Balance Coordinator and generally do not show any imbalances. If an imbalance nevertheless occurs due to unbalanced scheduling, the Balance Responsible Party remains financially liable to the Balance Coordinator.

**Article 6: Requirements on data and information to be delivered to the connecting TSO to calculate the imbalances**

For the balancing coordination in the Luxembourg scheduling area, the Balance Coordinator applies the rules defined by the ENTSO-E Scheduling System (hereinafter referred to as "ESS"). The permitted message types are those defined in the version of the ESS supported by the Balance Coordinator as part of its scheduling management systems.

The data formats are described in detail in the ESS documentation published by ENTSO-E. [7]

**Scheduling – general information**

- The scheduling is a forecasted daily program that lists all energy transactions between the balancing perimeters for every quarter of an hour.
- The unit of measurement for the quarter-hourly values given in the scheduling is MW. The resolution of schedules is 1 kW (three decimal places).
- Every exchange of electrical energy between two balancing perimeters as well as every exchange of electrical energy between scheduling areas must be the subject of scheduling, which is transmitted to the Balance Coordinator by the concerned Balance Responsible Parties.
- Scheduling that concerns an energy exchange with a scheduling area outside Creos' responsibility is referred to as external scheduling.
- Scheduling that is limited to the exchange of energy within the scheduling area, which Creos is responsible for, is referred to as internal scheduling.
- Scheduling is transmitted by means of electronic data communication, with the technical design specified by the Balance Coordinator.
- The Balance Coordinator is entitled to reject schedules if the maximum values declared in the balancing agreement are exceeded by double in several hours or if it can lead to a significant imbalance in the balancing perimeter in question. In such a case, the Balance Coordinator is obliged to immediately inform the rejection to the Balance Responsible Party by e-mail and to request a corrected scheduling.
- Each Balance Responsible Party supplying a physical load is obliged to provide scheduling transactions from its balancing perimeter to the FC-CONS balancing perimeter. Physical loads include: the consumption of differential balancing perimeters, the calculated grid losses and the consumption of delivery points supplied from the balancing perimeter.

[7] http://www.entsoe.eu

- Each Balance Responsible Party whose balancing perimeter contains metering points with injection is obliged to provide scheduling transactions from its own balancing perimeter to the FC-PROD balancing perimeter.

**Article 7: Rules for Balance Responsible Parties to change their schedules prior to and after the intraday energy gate closure time pursuant to paragraphs 3 and 4 of Article 17**

**a) Day-ahead scheduling (hereinafter referred to as "Day-Ahead")**

The Balance Responsible Party must submit scheduling for each of its active balancing perimeters to the Balance Coordinator no later than 2:30 p.m. on the day before the planned delivery. This deadline applies to both internal and external scheduling.

In case of discrepancies in the schedules, the concerned Balance Responsible Parties will work together to troubleshoot. The correction must be made by sending a new scheduling by the affected Balance Responsible Parties no later than 2:30 p.m. on the day prior the planned delivery. If no new scheduling is submitted within the above-mentioned timeframe, the Balance Coordinator will apply the minimum rule. This sets the time series in question to the lowest value for the respective quarter of an hour of the two balancing perimeters. This is true even if one of the corresponding values is zero. If there are no time series for one of the two balancing perimeters, the missing scheduling time series are interpreted as a zero value time series using the minimum rule.

The deadline for clarifying discrepancies in internal scheduling is set at 2:30 p.m. From this point on, the Balance Coordinator is no longer obliged to accept changes to internal scheduling.

If no scheduling has been submitted for a given balancing perimeter by this deadline, no energy supply can be made for this balancing perimeter.

In the event of discrepancies in the external schedule registrations, the Luxembourg and German Balance Coordinators and the concerned Balance Responsible Party will work together to troubleshoot. The concerned Balance Responsible Party, who has a discrepancy in its external schedule declarations, must opt for one of the two external scheduling that it has submitted to the German and Luxembourg Balance Coordinators. If the Balance Responsible Party does not make a decision by 3:30 p.m., the Balance Coordinators bilaterally decide either on one of the scheduling or on a zero value time series. The deadline for clarifying discrepancies in external scheduling is set at 3:30 p.m.

**b) Intraday scheduling (hereinafter referred to as "Intraday")**

In **Intraday**, Balance Responsible Parties can modify their scheduling, which was initially registered as day-ahead, up to the time of the Gate Closure Time (GTC). The GTC for internal and external scheduling adjustments in intraday is 15 minutes prior of each quarter-hour change. Intraday adjustments are possible from 2:30 p.m. on the day before the scheduling is carried out and end with the GTC, which corresponds to the lead time of 15 minutes for the last possible quarter of an hour on the day of the implementation. The time of receipt in the

scheduling system of the Balance Coordinator applies, and not the sender or time of generation by the Balance Responsible Party.

The cut-off time (COT) determines the final point in time of the coordination process between the Balance Coordinators concerned. The COT is also 15 minutes before each quarter-hour change.

In the case of intraday adjustments across scheduling zones, the affected schedules must be coordinated by the Balance Responsible Party with the respective Balance Coordinator in due time.

Discrepancies in schedules adjustments notified intraday must be clarified between the Balance Responsible Parties of the concerned balancing groups before the expiry of the intraday registration deadline (COT) and settled by timely scheduling notification. If differences between two balancing groups continue to occur after the intraday registration period, the last valid and matching scheduling time series will be considered (last confirmed). This also applies if the corresponding scheduling time series shows zero values or is missing.

The scheduling messages adjusted intraday do not differ formally from the day-ahead schedule registrations and must always contain all energy transactions of the Balance Responsible Party on the day in question, i.e. also the energy transactions of the Balance Responsible Party which are not affected by the adjustment. Elapsed time intervals on the day of implementation must be transmitted with the values already agreed.

**c) Day-after scheduling (hereinafter referred to as "day-after")**

Subsequent scheduling reports are only possible for scheduling adjustments within the scheduling zone until 4:00 p.m. on the calendar day following the fulfilment day of the scheduling. If the following calendar day is not a working day, subsequent scheduling adjustments are allowed until 4:00 p.m. of the next working day, but no later than 4:00 p.m. of the third calendar day following the fulfilment day. In the event of discrepancies in the scheduling reports, the involved market participants can make corrections within the deadlines specified here. If there are still discrepancies after this period, the last valid and matching version of the scheduling notification (Last confirmed) applies, as with the intraday.

Later schedule registrations (day-after) enable each Balance Responsible Party to compensate bilaterally for deviations between affected balancing perimeters within the scheduling zone up to the day-after deadline. In particular, the day-after schedule registration is used to correct the balancing perimeters that impacted by a call for balancing energy.

**d) Urgent call**

The urgent call gives the Balance Coordinator the opportunity to receive final schedules at short notice. In order to keep potential damage and effects on system security as low as possible, the Balance Coordinator can request the subsequent scheduling by means of an urgent call until 4:00 p.m. of the current day, this also applies to previous days if the deadline for the subsequent scheduling has not yet been reached for these days. If an urgent call has been issued, a final scheduling notification must be made by the concerned Balance Responsible Party at 10:00 a.m. the latest on the following calendar day. Any request for a

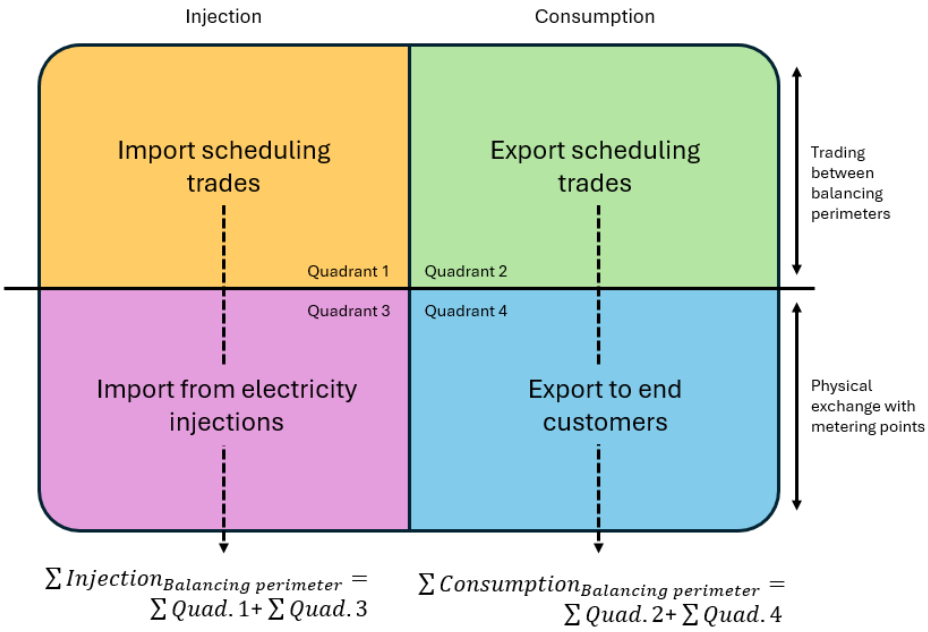
new scheduling by the urgent call must be justified by the Balance Coordinator and communicated to the Balance Responsible Party. If the Balance Responsible Party does not submit the data in due time, the last schedule transmitted by the Balance Responsible Party will be used for further processing. The new schedules resulting from the urgent call are conclusive and therefore relevant for settlement purposes. Failure to submit the schedules requested by the Balance Responsible Party or failure to submit them on time shall in any case constitute a breach of fundamental obligations arising from the balancing agreement.

In order to ensure that the urgent call is operationally and procedurally feasible, the Balance Coordinator may make a test call up to twice a year without any concrete suspicion of abuse. These tests must be completely fulfilled by the Balance Responsible Party after the Balance Coordinator has clearly announced them as such.

All scheduling must always be aligned with the Balance Coordinator in due time by all Balance Responsible Parties of the balancing perimeter through which the subsequently adjusted energy transactions are carried out. Even in the case of later schedule registration, energy transactions of the Balance Responsible Party of the day in question must be included in the scheduling.

## Article 8: Rules for the settlement of Balance Responsible Parties

Each balancing perimeter is settled based on the balance of four Quadrants, as shown in the following figure.




$$Imbalance_{Balancing\ perimeter} = \sum Consumption_{Balancing\ perimeter} - \sum Injection_{Balancing\ perimeter}$$

The Balance Coordinator determines the billing data of the 4 Quadrants on a monthly basis for each active balancing perimeter and for each quarter-hourly period of the preceding month in accordance with the following provisions.

- Import scheduling trades (Quadrant 1): Sum of balancing perimeter import trades by other balancing perimeters based on the most recently validated scheduling.

- Import from electricity injections (Quadrant 3): Sum of actual injections based on the aggregated load curves transmitted by the grid operators.

- Export scheduling trades (Quadrant 2): Sum of balancing perimeter export trades to other balancing perimeters based on the most recently validated scheduling.

- Export to end customers (Quadrant 4): Sum of actual consumption based on the aggregated load curves transmitted by the grid operators.

The quarter-hourly values are the average power that is measured or reported per quarter-hour integration period.

The balancing results from the difference between the total consumption and injection for the concerned balancing perimeter.

In order to determine the actual billing data for injection and consumption, the grid operators are obliged to calculate the aggregated load curves for the active balancing perimeter in their grid and to transmit them to the Balance Coordinator and to the Balance Responsible Parties by the 10th working day of a month *m+1* for the supplies of the month *m*.

The individual aggregations are arranged by the Balance Coordinator into horizontal and vertical aggregation load curves using an aggregation matrix. Horizontal aggregation enables the calculation of the load curves relevant to the balancing perimeter (Quadrant 3 and Quadrant 4). Vertical aggregation, on the other hand, makes it possible to determine the sum of supplies within a balancing perimeter of a distribution grid.

The Balance Coordinator is obliged to provide the Balance Responsible Party with the data required for the review of the balancing sheets. In particular, the Balance Coordinator shall deliver the aggregated load curves resulting from the horizontal aggregation for the balancing of supplies of a month m at the latest by the 15th working day of month *m+1*.

**Article 9: Delineation of an imbalance area pursuant to Article 54(2) and an imbalance price area**

The Luxembourg scheduling area is defined by the transmission grid system on Luxembourg territory. The area is delimited by the interconnection points with the SOTEL grid, the German and the Belgian transmission grid. The scheduling area includes all distribution grids connected to the transmission grid.

In the scheduling area for which the Balance Coordinator is responsible, the applied imbalance price is the same across the control areas in the Federal Republic of Germany. This imbalance price (reBAP) is calculated and published by the German TSOs in accordance with the legal requirements and applicable provisions of the Federal Network Agency.

Cross-border scheduling is limited to the German border alone.

**Article 10: Maximum period for the finalisation of the settlement of imbalances with Balance Responsible Parties for any given imbalance settlement period pursuant to Article 54**

The Balance Coordinator is obliged to carry out a monthly settlement regarding the balancing sheets to the Balance Responsible Party. Billing will be initiated as soon as the imbalance prices are known to the Balance Coordinator, but no later than 3 months after the end of the billing month.

**Article 11: Consequences in case of non-compliance with the terms and conditions applicable to Balance Responsible Parties**

The balancing energy is intended exclusively for the compensation of imbalances caused by unavoidable and inherent inaccuracies in the forecasts of the Balance Responsible Parties for their balancing perimeter. Any use of balancing energy for other purposes, in particular to cover all or part of the consumption of a balancing perimeter, is to be regarded as misuse.

A balancing perimeter is considered exhibiting a significant imbalance if one of the two following criteria is fulfilled:

1) **Identification of main contributors to a significant imbalance of the scheduling area**

   A significant imbalance of the scheduling area is given if the average imbalance (deviation of measured energy and the forecasted schedule) of a given calendar day exceeds 15% and ±35 MW[8] in at least one of the directions. For the calculation of the average imbalance in one given direction, the quarter-hours during which an imbalance in the other direction occurred are not considered[9].

   For each calendar day on which a significant imbalance of the scheduling area has occurred, the main contributors (balancing perimeters with significant imbalance) will be identified.

   A balancing perimeter is considered a main contributor if, on the calendar day identified with a significant imbalance of the scheduling area as above, the perimeters' average imbalance in a given direction (positive or negative) between its netted measured energy (Quadrant 4 minus Quadrant 3) and its netted forecasted schedule (Quadrant 1 minus Quadrant 2), calculated over the quarter-hours where the perimeter and the scheduling area have an imbalance in the same direction, exceeds 15% of the average imbalance of the scheduling area in that direction

   An example for the calculation is included in the Annex.

[8] > 35 MW in case of a positive imbalance and < –35 MW in case of negative imbalance
[9] Meaning that zero-values due to an imbalance in the other direction will not be included in the calculation

**2) Identification of a significant perimeter deviation over at least 3 days**

When the perimeter exceeds an average absolute deviation of 30% between the netted measured energy (Quadrant 4 minus Quadrant 3) and the netted forecasted schedule (Quadrant 1 minus Quadrant 2) for three (3) or more consecutive days, the balancing perimeter exhibits a significant imbalance.

If a significant imbalance occurs in a balancing perimeter, the Balance Responsible Party and the Balance Coordinator shall jointly attempt to clarify whether and to what extent this imbalance could have been avoided by the Balance Responsible Party and inform ILR of the result.

The Balance Coordinator is entitled to issue a written warning to the Balance Responsible Party if, in the opinion of the Balance Coordinator, the clarification is insufficient or unjustified. The Balance Coordinator is also authorised to issue a written warning to the Balancing Responsible Party if the latter fails to comply with the demand for improvement in its balancing perimeter. If no clarification is provided by the Balance Responsible Party, the Balance Coordinator is also authorised to issue a written warning to the Balance Responsible Party.

A balancing perimeter may, in specific and limited cases, exhibit a significant imbalance not covered by points 1 and 2 of this Article. In such an event, the Balance Coordinator shall immediately inform ILR and provide all relevant information, supporting documentation, and contextual details. Subject to the favourable opinion of ILR, the Balance Coordinator is entitled to issue a written warning to the Balance Responsible Party and shall further send to ILR a copy of the written warning issued to the Balance Responsible Party.

In case of 3 written warnings within a period of 12 months, the Balance Coordinator may terminate the balancing agreement without notice. The ILR shall be duly informed of such termination.

In the event of a failure by the Balance Responsible Party to comply with its scheduling obligations, the procedures defined in Chapter 3 of the modified Regulation E08/09/ILR of 30 April 2008[10] shall apply

The ILR shall be informed without delay when the Balance Responsible Party has demonstrably returned to compliant scheduling behaviour.

**<u>Article 12: Obligation for Balance Responsible Parties to submit to the connecting TSO any modifications of the position</u>**

The Balance Coordinator is obliged to calculate the balancing perimeter settlement for the payroll month *m* by the 15th working day of month *m+1* and to transmit them to the Balance Responsible Party.

The Balance Responsible Party is responsible for reviewing these balancing settlements. If discrepancies arise, the Balance Responsible Party must inform the Balance Coordinator

[10] Règlement E08/09/ILR du 30 avril 2008 déterminant les modalités décrivant le fonctionnement de la fourniture du dernier recours.

immediately, but no later than the end of month *m+1*. If the discrepancies are justified, the Balance Coordinator will carry out a recalculation based on new aggregated load curves provided by the DSOs concerned. The transmission of new aggregations by the relevant DSOs must take place within a period set and communicated by the Balance Coordinator.

However, the Balance Coordinator may refuse any correction of aggregations of month *m* that have been submitted independently by a grid operator as soon as the deadline of the 15th working day of month *m+1* has passed.

If a calculation error has been made by the Balance Coordinator, the Balance Responsible Party is entitled to contest the balancing settlement.

**Article 13: Settlement rules**

The Balance Coordinator is obliged to submit to the Balance Responsible Party a monthly settlement regarding the imbalances in the form of an imbalance energy settlement for each balancing perimeter. For this purpose, the imbalances determined in accordance with Article 8 shall be invoiced to the Balance Responsible Party for each balancing perimeter for each period of 15 minutes with the valid imbalance price.

The invoice submitted to the Balance Responsible Party must contain all the information necessary for its verification. In particular, the invoice must include the identification of the concerned balancing perimeter, the sum of the quantities/amounts of the positive and negative imbalances and the period of the affected supplies.

The Balance Coordinator is also obliged to publish the imbalance price per quarter-hourly period on a monthly basis on his website. The publication will take place as soon as the Balance Coordinator has the necessary data.

**Article 14: Precedence of the Terms and Conditions**

In the event of any conflict or inconsistency between the provisions of the balancing agreement and the Terms and Conditions, the provisions of the Terms and Conditions shall prevail.

This applies in particular where individual provisions of the Terms and Conditions have been reproduced, paraphrased or cross-referenced in the balancing agreement for operational or explanatory purposes.

## Glossary

| Denomination in English | Denomination in French | Denomination in German |
|---|---|---|
| Balancing capacity | Capacité d'équilibrage | Regelleistung |
| Balance Coordinator | Coordinateur d'équilibre | Bilanzkreiskoordinator |
| Balancing Energy | Energie d'équilibrage | Regelarbeit |
| Balancing market | Marché de l'équilibrage | Regelreservemarkt |
| Balancing perimeter | Périmètre ou zone d'équilibre | Bilanzkreis |
| Balance Responsible Party (BRP) | Responsable d'équilibre (RE) | Bilanzkreisverantwortlicher |
| Balancing services | Services d'équilibrage | Regelreserve |
| Balancing service provider (BSP) | Fournisseur de services d'équilibrage (FSE) | Regelreserveanbieter |
| Control area | Zone de contrôle | Regelzone |
| Distribution system operator | Gestionnaire de réseau de distribution | Verteilnetzbetreiber |
| End consumer | Client final | Endkunde |
| Frequency Containment Reserve | Réserve de stabilisation de la fréquence (FCR) | Frequenzhaltungsreserve |
| Frequency Restoration Reserve | Réserve de restauration de la fréquence (FRR) | Frequenz-wiederherstellungsreserve |
| Imbalance | Déséquilibre | Bilanzkreisabweichung |
| Imbalance area | Périmètre ou zone de déséquilibre | Bilanzkreisabweichungsgebiet |
| Imbalance price | Prix du déséquilibre | Ausgleichenergiepreis |
| Load-frequency control area | Zone de réglage fréquence-puissance | Leistungs-Frequenz-Regelzone |
| Metering point | Point de mesure | Messpunkt |
| Point of delivery | Point de fourniture | Versorgungspunkt |
| Scheduling | Programmation | Fahrplan |
| Scheduling area | Zone de programmation | Fahrplangebiet |
| Supplier | Fournisseur | Lieferant |
| Transmission system operator | Gestionnaire de réseau de transport | Übertragungsnetzbetreiber |

## Annex

In this annex, a numeric example for the process of the identification of main contributors to a significant imbalance of the scheduling area is given.

Note that the example is only intended to illustrate and clarify the different calculation steps of the process and does not include any existing balancing perimeters or historical values. For simplification, the example is limited to only 16 quarter-hours and two balancing perimeters, whereas, as described in Article 11, the process applies to an entire calendar day (96 quarter-hours) and all balancing perimeters of the scheduling area.

### Imbalance – Scheduling Area

| | Scheduling area | | | |
|---|---|---|---|---|
| 1/4h | Scheduled [MW] | Measured [MW] | Positive or negative Imbalance [MW] | Percentage [%] |
| 1 | 126 | 92 | 34 | 27,0% |
| 2 | 150 | 163 | -13 | 8,7% |
| 3 | 175 | 120 | 55 | 31,4% |
| 4 | 110 | 80 | 30 | 27,3% |
| 5 | 195 | 234 | -39 | 20,0% |
| 6 | 142 | 94 | 48 | 33,8% |
| 7 | 149 | 116 | 33 | 22,1% |
| 8 | 125 | 82 | 43 | 34,4% |
| 9 | 154 | 133 | 21 | 13,6% |
| 10 | 147 | 105 | 42 | 28,6% |
| 11 | 135 | 136 | -1 | 0,7% |
| 12 | 162 | 190 | -28 | 17,3% |
| 13 | 196 | 214 | -18 | 9,2% |
| 14 | 117 | 113 | 4 | 3,4% |
| 15 | 183 | 137 | 46 | 25,1% |
| 16 | 183 | 149 | 34 | 18,6% |

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| | | | |
|---|---|---|---|
| Sum pos. Imbalance [MW]: 390 | Sum neg. Imbalance [MW]: -99 | | |
| Average pos. System imbalance: | 35,5 | 24,1% | >15% & > 35 MW |
| Average neg. System imbalance: | -19,8 | 11,2% | < 15% & > - 35 MW |

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### Imbalance - Balancing Perimeters

| | Perimeter 1 | | Perimeter 2 | | Perimeter.... | |
|---|---|---|---|---|---|---|
| | Positive Imbalance [MW] | Negative Imbalance [MW] | Positive Imbalance [MW] | Negative Imbalance [MW] | Positive Imbalance [MW] | Negative Imbalance [MW] |
| | 0 | -3 | 5 | 0 | | |
| | 0 | -2 | 6 | 0 | | |
| | 0 | -5 | 9 | 0 | | |
| | 1 | 0 | 6 | 0 | | |
| | 3 | 0 | 4 | 0 | | |
| | 6 | 0 | 8 | 0 | | |
| | 4 | 0 | 5 | 0 | | |
| | 5 | 0 | 9 | 0 | | |
| | 5 | 0 | 3 | 0 | | |
| | 4 | 0 | 0 | -1 | | |
| | 4 | 0 | 3 | 0 | | |
| | 0 | -3 | 0 | -4 | | |
| | 0 | -4 | 0 | -2 | | |
| | 0 | -1 | 2 | 0 | | |
| | 7 | 0 | 10 | 0 | | |
| | 4 | 0 | 6 | 0 | | |
| **Contribution to imbalance [MW]:** | **36,0** | **-9** | **63,0** | **-6** | | |
| **Contribution to imbalance [%]:** | **9,2%** | **9,1%** | **16,2%** | **6,1%** | | |

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1 Calculation of total imbalance of the scheduling area for both directions during the given calender day

2 Calculation of the average imbalance of the scheduling area for both directions.
For each direction only the ¼ hours with an imbalance in this direction are considered, i.e. in this example the average in pos. direction is calculated over 11 ¼ hours and the average in neg. direction over 5 ¼ hours.

3 If the average imbalance of the scheduling area is > 15 % and:
- > 35MW → significant imbalance in pos. direction
- < -35 MW → significant imbalance in neg. direction.

4 Calculation of the contribution of a perimeter to the imbalance of the scheduling area during the given calender day. The 1/4h during which the perimeter exibits an imbalance in the same direction as the scheduling area (marked in red) are summed.

5 If the average contribution of the perimeter to the imbalance of the scheduling area (4/2) is > 15%, a significant imbalance of the perimeter is identified.