Annex to the General Terms and Conditions of the Balance Group Coordinator (GTC BGC) Balancing energy management in the Eastern distribution area

V 5.0

Document history

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1. Scope of application, and distinction between control energy and balancing energy

1.1 Scope of application

The following provisions regulate the organisation of balancing energy management in the Eastern distribution area.

1.2 Distinction between control energy and balancing energy

Balancing energy

Section 7(1)(2) Natural Gas Act defines balancing energy as the difference between injections and withdrawals by a balance group during a defined metering period, where the quantity of energy per measurement period may be either metered or calculated.

Control energy

Section 7(1)(54) Natural Gas Act defines control energy as energy required for the short-term compensation of pressure variations in the system which occur within a given period.

2. Assessment of the required capacity

The distribution area manager (DAM) for the Eastern distribution area shall assess the capacity levels required to compensate for the anticipated imbalance between the injections and withdrawals of all balance groups ("BGs") in the distribution area sufficiently to maintain stability in the distribution area.

Taking into consideration any existing contracts for reserve capacity concluded for the purpose of providing system services, the DAM shall inform the balance group coordinator ("BGC") of the additional capacity required, broken down into injection and withdrawal capacity. Balancing energy supply security in the Eastern distribution area may be assured by appointing market makers which undertake to submit bids for given periods.

3. Use of linepack, OBAs and interconnection point agreements

The distribution area manager may use linepack in the distribution area and, subject to the prior agreement of the market area manager, that in the transmission pipelines, both to balance short-term pressure fluctuations in the distribution area and to bridge the period up to the physical settlement of its balancing energy call-offs at the virtual trading point.

The distribution area manager maintains an account for linepack use in the distribution area. The distribution area manager undertakes, in consultation with the market area manager, to draw down the net balances on the OBA accounts in a timely manner by employing the linepack in the distribution area or balancing energy call-offs on the gas exchange at the virtual trading point or from the merit order list. The provision of reserve control energy and use of control energy under interconnection point agreements is recorded in accordance with the arrangements specified by those agreements. In the event the event that tolerance thresholds are exceeded, the net balances of the OBA accounts shall be drawn down in a timely manner. Control energy procured under interconnection point agreements that have been concluded for the distribution area is recorded in the accounts set up by the balance group coordinator for this purpose. In the event that control energy procured under interconnection point agreements is obtained on the gas exchange at the virtual trading point or by means of merit order list call-offs, this shall be on behalf of and for the account of the balance group coordinator.

4. Call-offs from the virtual trading point

Balancing energy must be procured primarily by way of trading in standardised products in the meaning of section 33(1) GMMO-VO [Gas Market Model Order] on the gas exchange at the virtual trading point.

The DAM calculates the actual and forecast net balance for the distribution area on an hourly basis, and primarily procures the physical balancing energy needed for disturbance free control of the distribution area on the gas exchange at the virtual trading point on behalf of and for the account of the balance group coordinator.

5. Balancing energy offers and call-offs from the merit order list

In the event that no offers have been made on the gas exchange at the virtual trading point, or the DAM requires locational or temporal products to safeguard the disturbance free operation of the distribution network, it may call off bids from the merit order list.

Balancing energy suppliers shall ensure that the energy offered by it can be injected into the distribution area system at the specified rate and at the specified injection and withdrawal points 30 (thirty) minutes after the call-off by the DAM, and is actually withdrawn at the specified rate.

The DAM calls off the required quantity of balancing energy on behalf of and for the account of the BGC. The DAM is responsible for ensuring that the balancing energy it calls off is actually injected into and withdrawn from the system.

Call-offs are for one-hour periods and begin on the hour.

5.1. Eligibility to offer balancing energy

Balance group members which have completed the registration process for balancing energy suppliers (a description of the process is posted on the BGC's website) are eligible to offer balancing energy, subject to the approval of their balance group representatives ("BGRs"), in accordance with the AB-BGV [General terms and conditions of balance group representatives] as amended. In the course of the registration process the balance group members in question must demonstrate that they have access to appropriate flexibility tools, e.g. ability to move gas into and out of storage at short notice, availabilities at the market area's entry/exit points, and volume controllable consumers with online metering and data transmission to the DAM. Balancing energy suppliers must notify the BGC of the entry/exit points where they will offer balancing energy.

The BGC will notify the DAM of any changes in the list of registered balancing energy suppliers by sending it an updated list.

Balancing energy may be offered no earlier than 2 (two) working days after the supplier has registered with the BGC and the DAM has set up balancing energy entry/exit points.

The supplier undertakes to inject/withdraw the promised quantity of gas into/from the distribution area upon call-off of the balancing energy. In the event of partial or complete non-fulfilment of a call-off settlement between the BGC and the supplier will be adjusted to the actual quantity of energy delivered/withdrawn.

In the event of non-performance, section 5.4 below shall apply.

5.2. Submission of balancing energy offers on the day ahead market

Balancing energy suppliers may only submit offers via the BGC's online platform, in accordance with the conditions of supply and procurement set out below. Otherwise the GTC BGC shall apply.

Balancing energy suppliers shall submit offers to the BGC. The offers must include the balance group identification code assigned by the MAM, the hour to which the offer applies, the amount of reserve capacity, the energy price, and the injection or withdrawal point. Each balancing energy supplier may submit offers with a minimum duration of 1 (one) hour and a minimum capacity of 1 (one) MWh/h. The offers must be at fixed prices.

Offers for the following gas day must be submitted by 16.00 (market close). Offers for Saturdays, Sundays, and public holidays as well as the following working days must be submitted by 16.00 on the preceding working day. Offers become binding at the market close, after which they may not be modified or withdrawn by balancing energy suppliers. Under exceptional circumstances constituting reasonable grounds, such as technical problems, time pressures owing to the coincidence of weekends and public holidays, or the need to take action in response to a lack of offers, the BGC may, after notifying market participants, defer the market close at short notice.

Should the DAM deem the balancing energy bids placed to be insufficient, it will immediately notify the BGC of same, including the reasons for reaching this conclusion.

The BGC will then reopen the market, determine the new market close and notify all balancing energy suppliers. This notification by the BGC will serve as an invitation to the balancing energy suppliers to offer further quantities in addition to the binding offers made in accordance with the above paragraphs.

The BGC shall keep the market open round the clock for the submission of offers at the request of the DAM. In this case the BGC shall inform market participants in advance that the market will remain open continuously. In the event of continuous market opening the offers shall be transmitted to the DAM at specific times determined and published by the BGC (market close). Offers submitted up to these points in time may no longer be modified or withdrawn.

The BGC ranks the offers, broken down by injection and withdrawal, on the basis of the specified energy prices ("merit order list"). If the prices offered are identical offers of larger quantities of energy take precedence. If both the price and quantity are identical, the ranking is determined by the time at which the bids are received.

The BGC will assign a unique code to each offer.

5.3. Balancing energy call-off

The BGC shall forward the merit order list to the DAM immediately after the market close, and in the case of continuous market opening at the time specified and published by the BGC. The DAM shall then call off the required bids for injection/withdrawal of balancing energy from the suppliers in accordance with the merit order list. The DAM is entitled to call off a minimum of 1 MWh/h from a given offer, rising in steps of 1 MWh/h until the capacity offered has been called off in full.

The DAM is obliged to observe the merit order list. Should this be impossible due to congestion on the pipeline network or technical faults, and normal system control and balancing energy management methods are insufficient to maintain system stability, the DAM is entitled to take the following action:

1. suspension of balancing energy call-off in accordance with the merit order list;
2. simultaneous call-off of balancing energy supply and procurement offers, with the option of recourse to offers with different locations to those stated.

Where the DAM deviates from the merit order list it shall inform the BGC, the balancing energy suppliers passed over and E-Control of the reasons for within 3 (three) working days.

The DAM shall call off the balancing energy required on behalf of and for the account of the BGC. The DAM is responsible for ensuring that the balancing energy it calls off is injected into or withdrawn from the system. Call-off shall result in a contractual relationship between the BGC and the balancing energy supplier in question. Call-offs shall last for one hour and begin on the hour. A lead time of 30 minutes applies to call-offs of temporal and locational offers in the distribution area or large consumers that are metered online. If a call-off takes place earlier it is irrevocable except by an email sent by the DAM at least 30 minutes before the actual utilisation of the balancing energy

Balancing energy suppliers will be notified directly of call-offs by emails sent to the addresses specified on the merit order list. Suppliers must provide the DAM and the balance group representative with the contact details of a technical manager and an authorised signatory, both of whom must be reachable by telephone on a specified extension number at all times for the duration of the offer. Such technical manager and the authorised signatory shall be sent the emails with the call-off details simultaneously.

5.4. Non-fulfilment of bids

If a supplier fails to fulfil its obligation to supply control energy the BGC will request such supplier to state the reasons for non-fulfilment, and any other relevant information, in writing within 3 (three) working days. The supplier will be obliged to respond to such a request. If a supplier does not meet its obligation to supply control energy offered or to evidence the reasons for non-fulfilment, the BGC will be entitled to exclude such supplier from future bidding.

If a supplier is not in a position to fulfil its bid if shall inform the DAM immediately by email. If it does so at least 40 minutes before the hour to which the call-off applies this will be deemed to constitute a revocation; any notification that takes place later will deemed to constitute non-fulfilment. In case of revocation, the DAM will remove the offer in question from the merit order list. The supplier shall then satisfy the DAM that it was prevented from fulfill-

ing its obligations by circumstances that were beyond its control or could only have been averted at undue expense.

6. Market makers

In the event that no balancing energy is offered or the quantity offered is inadequate, the BGC is entitled to hold market maker auctions. The amount of capacity to be reserved by market makers is determined by the DAM. The introduction and implementation of market maker auctions must conform to the GTC BGC, and must be notified to the regulator.

If market makers are required, the BGC will invite potential balancing energy suppliers to offer to act as market makers. There is no legal entitlement to the acceptance of such offers by the BGC.

6.1 Selection of offers

Offers from market makers are selected in accordance with the procedure for invitations to tender.

6.2 Contents of market makers' offers

Offers from market makers to supply/procure balancing energy shall include details of the capacity and energy price for availabilities during the call-off period in question. The energy price for balancing energy supplies shall be stated as the maximum rate, and the energy price for balancing energy purchases as the minimum rate. The details will be governed by the market maker contracts concluded by the BGC with the suppliers.

7. Involvement of market makers in the day ahead market

The maximum and minimum unit rates quoted in market makers' offers are included in the merit order list compiled daily in accordance with section 5.2. A market maker may change its unit rate to this end, but the amended rate may not exceed the maximum or be below the minimum unit rate.

The inclusion of market makers in the day ahead market is designed to ensure that market makers' offers are called if they are cheaper than those submitted by regular balancing energy suppliers. This serves to minimise overall system costs.

However, market makers may not receive preferential treatment or be discriminated against in comparison with regular suppliers in the day ahead market.

7.1 Improvement of market makers' offers

The treatment of improved offers is analogous to the conditions established by section 5.2, and in particular those relating to the online platform, the deadline for bids and the deferral of the market close.

In the case of offers to supply balancing energy, the maximum unit rate quoted in the original offer may not be exceeded.

In the case of offers to purchase balancing energy, the unit rate may not be lower than that quoted in the original offer.

8. Balancing

The BGC corrects physical imbalances arising from the difference between actual consumption and the nominated consumer schedules.

Balancing within the distribution area has four components:

1) control energy from **linepack** in the distribution area;
2) control energy from **exchanges** under OBAs between the distribution area and the transmission systems;
3) balancing energy call-offs from the **virtual trading point**;
4) balancing energy called off from the **merit order list**.

Control energy required in the distribution area is called off by the DAM.

9. Physical clearing

Physical clearing comprises data reception, the first and second clearing rounds, and any subsequent charging.

Data reception for each clearing period includes:

- DAM:
  - procurement schedules for each balance group (including daily and hourly balancing consumer balance groups, and the system losses balance groups);
  - hourly biogas delivery schedules for each biogas balance group;
  - call-offs from the VTP and merit order list;
  - schedules at border transfer points in the distribution area (*kleiner Grenzverkehr* ["local border traffic"]) for each balance group.

- System operator time series:
  - aggregate load profile metered demand data (non-SLP time series of hourly readings) for each supplier – for hourly balancing;
  - aggregate non load profile metered demand data (SLP time series of hourly readings) for each supplier – for daily balancing;
  - aggregate load profile metered demand data (non-SLP, daily balancing, time series of hourly readings) for each supplier of load profile metered consumers that have opted for daily balancing – for consumers opting for daily balancing;
  - in addition, for network areas where a synthetic (bottom-up) approach is used to calculate withdrawals by all non load profile metered consumers, time series of hourly aggregated linepack changes, system losses, own use and metering differences, broken down into positive and negative time series values;
  - aggregate load profile metered injection data (time series of hourly amounts) for each biogas plant;
  - transfers at network boundaries affecting the distribution area (including transfers between transmission and distribution networks, and between distribution networks, at hourly intervals);
  - transfers at border transfer points in the distribution area, allocated to balance groups;
  - metered storage and production data for each distribution network;
  - the metered data of system users with load profile meters (non-SLP users) where such data are read on a daily basis – transmitted by distribution system operators to the balance group coordinator on a daily basis.

The above data shall be transmitted at hourly intervals; the measurement units shall be MWh or kWh.

The BGC shall calculate the quantity of balancing energy on an hourly basis for each balance group subject to hourly balancing under the Gas Market Model Order, whereby an hourly balancing energy price (the weighted price of call-offs multiplied by a factor corresponding to the direction of the balance group's balancing energy) shall be invoiced for hourly imbalances.

The BGC shall calculate the quantity of balancing energy on a daily (gas day) basis for each balance group subject to daily balancing under the Gas Market Model Order, whereby the daily balance of hourly imbalances shall be invoiced. A marginal balancing energy price shall be invoiced for the daily balance, depending on whether the balance of the respective balance group is positive or negative.

The BGC will calculate the quantity of balancing energy for distribution area and biogas balance groups, as well as balance groups for border transfer points in the distribution area on a daily (gas day) basis; the daily net balances of the hourly imbalances will be invoiced. A balancing energy price (gas exchange price) will be charged for the daily net balances.

Calculation and allocation of residual load errors in network areas where system operators use a synthetic (bottom-up) approach to calculate withdrawals by all consumers that are not metered on an hourly basis

The application of a bottom-up approach depends on the establishment of a network linepack balance group for the system operator, in addition to the system losses balance group, to balance linepack changes, system losses, metering differences and own use less procurement for own use. If a procedure for the allocation of the residual load error is employed the BGC will eliminate the imbalance in the system losses balance group at the settlement stage.

The calculation and allocation of residual load errors for each network area at the clearing stage is performed in accordance with the following criteria:

1. The BGC calculates the synthetic load profile (SLP) demand on a top-down basis, using the aggregate network exchanges, by deducting the total time series for linepack changes, system losses, and own use and metering differences, as well as load profile metered withdrawal components.
2. The BGC calculates SLP demand on a bottom-up basis, using the aggregate of all SLP withdrawal components.
3. The BGC calculates the residual load error on the basis of the difference between SLP demand on a top-down and a bottom-up basis.
4. Using the daily totals of the SLP withdrawal components, the BGC calculate a each supplier's share of the residual load error on a linear basis (daily share), and allocates the residual load error in the form of a daily average load (i.e. a fixed quantity per hour) to the adjustment components configured for each supplier in accordance with these shares. A positive residual load error adds to a supplier's costs, and a negative residual load error reduces them.
5. Daily measurement of the residual load error (netting off) gives rise to imbalances in the system losses balance group in individual hours. The BGC uses two data components to automatically transfer the imbalances in the latter balance group to the network linepack balance group. Consequently, balancing energy only occurs in the network linepack balance group.
6. An identical procedure is used to calculate and allocate the residual load error in both the first and second clearing rounds.

The **first clearing** round takes place monthly and involves determining the balancing energy per balancing group on an hourly and a daily basis by netting off the consumer schedule against the total of the aggregate metered data (time series of hourly data) and the aggregated load profiles, making adjustments for the pro rata residual load error where necessary.

The SOs shall provide the BGC with the data required to perform the first clearing. These include the time series of the aggregate load profile metered data (hourly amounts) and the aggregate standardised load profiles, broken down by injections and withdrawals, per balance group/supplier, and where necessary the time series of the aggregate linepack changes, system losses, own use and metering differences. SOs shall transmit the data to the BGC within 3 (three) working days of the end of the month to which the data relate. If the BGC requests the transmission of missing or corrected data, the SO in question shall provide such data within 2 (two) working days.

The **second clearing** round also takes place monthly, but is carried out 15 months after the operative month, and takes into consideration actual metered volumes. The second clearing round also takes into account any volume adjustments outstanding from the first clearing (e.g. proxy values, retrospective supplier transfers by consumers and changes resulting from transfer dates), as well as any adjustments to the calorific value of injected gas.

Data for the month in question must be transmitted to the BGC no later than the final working day of the 15th subsequent month.

The data for the second clearing round must be transmitted directly to the departments responsible for handling such data at the BGC. The same metering point codes as those used for the first clearing round must be used for the second clearing round.

Subsequent charging can be performed for given months and balance groups between the first and second clearing rounds at the request of the BGRs affected. This process permits corrections where the quality of the original data was inadequate (e.g. aggregated meter readings). The BGC is entitled to impose an additional fee reflecting the resultant expense on a BGR that requests subsequent charging.

The BGC will make the data available for download from its website.

The BGC will set a binding closing date for clearing after completion of the second clearing round and the related quality assurance. After this date the BGC will perform no further subsequent charging.

10. Balancing energy prices

The balance group coordinator will calculate market-based balancing energy prices for the commercial balancing of deviations between consumer schedules and metered quantities, as well as for the balancing of special balance groups for distribution networks, and of differences between nominated and metered biogas injection volumes.

- For balancing energy clearing and settlement for system users in accordance with section 18(6) Gas Market Model Ordinance (hourly balancing), a volume weighted average hourly price will be calculated on the basis of the call-offs by the distribution area manager on the gas exchange at the virtual trading point and from the merit order list. Balancing energy procured by balance group representatives will be subject to a surcharge of 20 percent, and that supplied by them to a discount of ten percent on the volume-weighted average hourly price. In the absence of call-offs by the distribution area manager the price for the current day on the gas exchange at the virtual trading point will be applied as the balancing energy price. In the event that the exchange fails to establish a price on the day in question the most recent hourly balancing energy price will be applied.
- Pursuant to sections 18(5 and 7) (daily balancing) Gas Market Model Order 2012, balancing energy prices for system users will be calculated on the basis of the balancing energy call-offs by the distribution area manager on the gas exchange at the virtual trading point and the distribution area manager's balancing energy call-offs from the merit order list. The highest purchase price will be applied to procurement call-offs, and the lowest to supply call-offs (marginal prices). In the absence of any call-offs by the distribution energy manager, the previous day's marginal prices will be applied.
- The reference price on the gas exchange at the virtual trading point for the gas day in question will be applied to the clearing and settlement performed for the special distribution network balance groups, and the differences between nominated and metered biogas injections. In the event that no such price is set, the most recent gas exchange reference price will be applied.

The balancing energy price will be quoted in cent/kWh, rounded to three decimal places.

If the balance group coordinator's balancing energy clearing and settlement process fails to cover costs or results in a surplus, this will be charged on to the balance group representatives over the following six months in accordance with section 18(5 and 7) Gas Market Model Order, by means of a levy on system users' demand volumes. This levy will be taken into account in the balancing energy clearing and settlement process, and will be stated in cent/kWh.

Upon every change in the levy rate the balance group coordinator must, of its own accord and in a transparent manner, notify the regulator of all its expenses and revenue in respect of balancing energy, the underlying volumes and price framework, and the forecast differences related to the levy.

11. Disclosure duties and transparency

Section 87(4)(2) Natural Gas Act 2011 as amended requires the BGC to set balancing energy prices for the purposes of calculating, allocating and invoicing balancing energy, and publishing them regularly in an appropriate form.