

Regulation C3

Handling of notifications and schedules - daily procedures

November 2011

Rev. 3

In case of any discrepancy between the Danish text and the English translation,
the Danish text shall prevail

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Revision view

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<p>3 Submission of consumption notifications is no longer mandatory, see proposal for harmonised balance settlement in the Nordic countries. October 2008</p>	KAC
<p>6 Deadline for adjusting regulating power bids changed from 30 minutes to 45 minutes before the actual delivery hour. Deactivation of regulating power bids only possible for bids >10 MW. October 2008</p>	KAC
<p>1+6 EUR is a valid currency in the regulating power market. December 2009</p>	HEP
<p>5 Operational schedules in the form of 5-minute power schedules must be handed in in both Eastern and Western Denmark. New time series for wind turbines used actively in the market. November 2011</p>	HEP
<p>7 Ordering of regulating power via schedules is used in both Eastern and Western Denmark. Direct activation is discontinued. Special marking of regulating power bids comprising wind power. November 2011</p>	HEP
<p>All Editorial corrections</p>	
Appendix no. and text	Revision

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To the reader

This regulation includes the general and specific requirements for the submission of notifications and schedules.

The regulation is structured so that **section 1** outlines the terminology and definitions used in the regulation.

Section 2 outlines the regulatory provisions of the regulation.

Section 3 outlines the general principles and requirements applicable to balance responsible parties (BRPs).

Sections 4-7 set out specific requirements which BRPs must comply with when submitting notifications, operational schedules, capacity schedules and regulating power bids.

Finally, **section 8** describes the services which Energinet.dk makes available to the BRPs.

A copy of the regulation (in English), which is published by Energinet.dk, can be obtained by contacting:

Energinet.dk
Tonne Kjærvej 65
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Tel.: +45 70 10 22 44

The regulation can also be downloaded from www.energinet.dk (English => Electricity => Regulations).

1. Terminology and definitions

1.1 Balance responsible party

A *balance responsible party* (BRP) is a player that has entered into an agreement on balance responsibility with Energinet.dk and thus has been approved by Energinet.dk as the holder of separate balance responsibility for consumption, production or electricity trade.

Balance responsibility is divided into the following three categories:

1. Balance responsibility for production is undertaken by players that are BRPs for production and have entered into related agreements on physical electricity trade.
2. Balance responsibility for consumption is undertaken by players that are BRPs for consumption, including adjustable consumption and grid losses, and have entered into related agreements on physical electricity trade.
3. Balance responsibility for trade is undertaken by players that are BRPs for physical electricity trade.

Physical electricity trade means the hourly power contracts that are included in the BRP's notifications. This means trading in the spot market, the intraday market and bilateral trading with other BRPs in the area.

The categories for which the BRP holds balance responsibility (consumption, production and/or electricity trade) are defined in the player's agreement on balance responsibility with Energinet.dk.

1.2 Time series

Time series are series of values arranged chronologically, such as energies, power, prices and amounts. Each value in the time series is related to a time or a time interval.

1.3 Energy time series/energy notification

An *energy notification* is a time series consisting of a series of data values indicating a volume of energy in a time interval.

1.4 Notification

A *notification* is the BRP's set of hourly energy notifications divided into separate balance responsibilities for production, consumption and electricity trade. The notification forms the binding basis for balance settlement, see Regulation C2.

1.5 Adjusted notification

An *adjusted notification* is the original notification, defined in 1.4, adjusted to changed consumption or production time series during the day of operation, supplemented by new or adjusted time series for intraday trading and bilateral trading during the day of operation.

1.6 Trading notification

A *trading notification* is an hourly energy notification for the exchange of energy between two national BRPs, including Nord Pool Spot, or between a BRP and the BRP's registered counterparty in the TenneT area.

Trading notifications are included in the notification.

1.7 Power time series/power schedule

A *power schedule* is a time series consisting of a series of data values indicating power values for production and adjustable consumption at specific times of the day.

The operational schedule, which is submitted by BRPs for production and BRPs for consumption with adjustable consumption, consists of power schedules at 5-minute intervals.

Facilities are expected to apply linear regulation between 5-minute power values in accordance with the power schedule.

1.8 Operational schedule

An *operational schedule* is the BRP's set of production schedules for electricity generation and adjustable consumption.

The operational schedule consists of a set of related 5-minute power schedules prepared for a 24-hour period at a time.

The number of power schedules and hourly energy notifications included in the operational schedule depends on the type and size of electricity generation facilities and adjustable consumption units, see 5.1.

1.9 Adjustable consumption

Adjustable consumption is consumption that is separate from and independent of ordinary consumption and that has been approved by Energinet.dk as consumption that can be used as regulation reserve.

The use of adjustable consumption as reserves/regulating power requires independent metering and settlement, including exchange of operational schedules.

1.10 Wind power plant

A *wind power plant* is one or several wind turbines with a total rated power greater than 25 kW which are connected to the public electricity supply network.

1.11 Adjustable wind power

By definition, offshore wind farms with an output greater than 25 MW supply adjustable wind power. In addition, wind power plants are considered adjustable if they are used actively by the BRP in either the spot, intraday or regulating power markets through remote control. The definition of adjustable/non-

adjustable wind power applies to each BRP, meaning that if a BRP actively uses some of the wind power plants in the market, the BRP's entire portfolio of wind power plants will be considered as adjustable.

1.12 Price area

The Danish power system is divided into two price areas: East and West, separated by the Great Belt. Balance responsibility and submission of notifications and schedules are managed separately in the two price areas.

1.13 Deadlines

The handling of notifications and schedules is based on a predefined daily rhythm governed by deadlines for the time before the day of operation and deadlines for the time on the actual day of operation. The deadlines for issuing a preliminary confirmation report and a final confirmation report mentioned in this document refer to the times for exchange of information between BRPs and Energinet.dk.

Energinet.dk may reject notifications and schedules that have been received after the fixed deadlines.

1.14 Units and rounding

- Values in energy notifications are to be stated in MWh per hour to one decimal place
- Values in power schedules are to be stated in MW to one decimal place
- Regulating power bids are to be stated in MW without decimal places
- Gradients in regulating power bids are to be stated in MW to one decimal place per minute
- The price of regulating power bids are to be stated in either EUR or DKK to two decimal places
- Prices and amounts are to be stated in DKK to two decimal places.

Rounding is to be done per value according to standard mathematical rules. Standard mathematical rounding means that values are rounded up when the preceding digit is greater or equal to 5; otherwise the values are rounded down.

1.15 Sign convention

When submitting notifications and schedules for consumption, production or electricity trade, BRPs must use the sign convention defined in Energinet.dk's Regulation F and its appendices.

2. Objective, scope and regulatory provisions

The regulation deals with the general and commercial rules for the daily handling of notifications between Energinet.dk and BRPs. The regulation specifies the elements of this communication and is thus closely related to Energinet.dk's communication requirements described in Regulation F.

- The daily notification is the central theme of the regulation.

The regulation is aimed at BRPs in Denmark, ie players having entered into or wanting to enter into an agreement with Energinet.dk on balance responsibility.

The regulation is effective within the framework of the Danish Electricity Supply Act (lov om elforsyning), see Consolidated Act no. 516 of 20 May 2010, as amended.

2.1 Statutory authority

The regulation has been issued under the provisions of section 31(2) of the Danish Electricity Supply Act (lov om elforsyning), see Consolidated Act no. 516 of 20 May 2010, as amended, and section 7(1) (3-4) of Executive Order no. 891 of 17 August 2011 on transmission system operation and the use of the electricity transmission grid etc. (systemansvarsbekendtgørelsen).

2.2 Complaints and sanctions

Complaints

Complaints about the regulation can be lodged with the Danish Energy Regulatory Authority, Carl Jacobsens Vej 35, DK-2500 Valby.

Complaints about the transmission system operator's administration of the provisions of the regulation can also be lodged with the Danish Energy Regulatory Authority.

Questions regarding the administration of the provisions of the regulation can be directed to the transmission system operator.

Sanctions

If a player repeatedly fails to submit notifications and schedules, Energinet.dk may relieve the player of its balance responsibility, see Regulation C1.

2.3 Commencement

This regulation comes into force on 15 May 2012, superseding:

- Energinet.dk's Regulation C3, rev. 2, of December 2008

In addition to this regulation, reference is made to the appendices to Regulation F, ie the BS document 'Handling of notifications and schedules in the Danish electricity market', which provides a more schematic overview of the various business processes in connection with the handling of notifications and schedules, and the BT document 'Business transactions for submitting notifications and schedules', which specifies the various business processes in detail.

Questions and requests for additional information can be directed to Energinet.dk's contact person for Regulation C3, see Energinet.dk's website, www.energinet.dk. The version of the regulation applicable at any given time can also be found here.

The regulation will be notified to the Danish Energy Regulatory Authority in accordance with the provisions of section 76 of the Danish Electricity Supply Act (lov om elforsyning) and section 8 of the Danish Executive Order on transmission system operation and the use of the electricity transmission grid etc. (systemansvarsbekendtgørelsen).

3. General about trading and handling of notifications and schedules

3.1 Trading before the day of operation ('day-ahead' trading)

Nord Pool Spot's Elspot is the Nordic power exchange for trade in hourly power contracts until 12:00 on the day before the next day of operation.

Exchange on the interconnections between Denmark and the other Nordic countries is determined by Nord Pool Spot on the basis of purchase and sales bids submitted by BRPs taking account of available capacity on the interconnections.

The same applies to a certain degree to the interconnection between Denmark and Germany. However, auctions managed by the German system operator TenneT GmbH are used on the interconnection between Western Denmark and Germany. See Energinet.dk's website (www.energinet.dk) or www.casc.eu (Capacity Allocating Service Company) for further information about the auction on the interconnection between Western Denmark and Germany.

3.2 Trading during the day of operation ('intraday' trading)

Nord Pool Spot's Elbas is the Nordic trading place for trade in hourly power contracts from 14:00 on the day before the day of operation until one hour before the delivery hour. Nord Pool Spot's Elbas has the monopoly for intraday trading on the interconnections between the Nordic price areas as well as on the interconnection between Germany and Zeeland (Kontek) and also offers intraday trading within the two Danish price areas.

On the Jutland-German border intraday trading takes place via a capacity platform, which is open from 17:15 on the day before the day of operation until 1 hour and 15 minutes before the delivery hour. The capacity platform gives access to a transport channel between Jutland and Germany which is a precondition for engaging in intraday trading. The trading capacity available can be seen from the website www.intraday-capacity.com.

The purchase and sale of energy cannot be performed via the capacity platform but must be undertaken separately via bilateral trading. It is possible for central counterparties (CCPs) (eg an exchange) to establish trading platforms for the purpose of setting up intraday trading on the Jutland-German border. Trading capacity is allocated via the capacity platform. The transmission system operators (Energinet.dk and TenneT GmbH) approve the access to the trading capacity.

In addition to Elbas and the capacity platform, BRPs have the option to trade themselves into balance within their own price area via bilateral trading up to one hour before the delivery hour.

The transmission system operators release exchange capacity to the intraday market. The exchange capacity may have been adjusted relative to the capacity

previously made available to the spot market. The trading capacities may change during the day of operation, but trades already agreed are guaranteed.

3.3 Handling of notifications and schedules

The exchange of notifications and schedules between BRPs and Energinet.dk comprises two elements called market share and operational share.

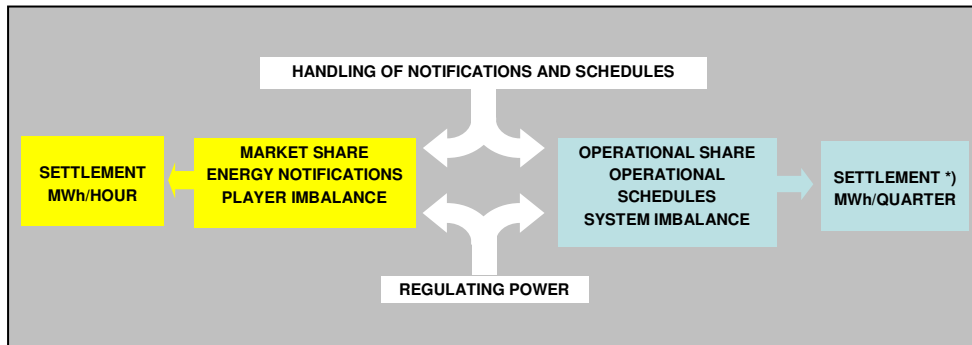


Fig. 3.1: Handling of notifications and schedules

The market share comprises the BRPs’ notifications that are used as a basis for settlement of the BRPs’ hourly imbalances (MWh/h) including any regulating-power trade. Hourly imbalances are settled by Energinet.dk as balancing power towards the BRP, see Regulation C2.

The operational share comprises the BRPs’ operational schedules including regulating power, if relevant, and is used by Energinet.dk for the continuous monitoring and handling of the balance in the entire power system.

For the handling of the market share, all BRPs must submit their notifications for production, consumption or trade as a binding basis for the settlement of balancing power. Notifications can be adjusted up to 45 minutes before the current delivery hour.

For the handling of the operational share, all BRPs for production and all BRPs for consumption that handle adjustable consumption must submit operational schedules for planned production/adjustable consumption.

The operational schedules form the basis of Energinet.dk’s handling of imbalances and thus trade in regulating power.

The handling of notifications and schedules is based on a predetermined daily rhythm governed by deadlines for the time before the day of operation and deadlines for the time on the actual day of operation.

The most important deadlines are given below.

Balance responsible players	Time	Energinet.dk/Nord Pool
	07:30	
Deadline for submission of daily forecasts for facilities expected to be in operation, see 6.1.2	09:00	
	09:30	TenneT announces capacity on the interconnection to Germany
	10:00	
	12:00	Nord Pool Spot announces binding trading capacities
Deadline for submission of bids to Nord Pool Spot's Elspot	14:00	
	14:30	<ul style="list-style-type: none"> Nord Pool Spot announces prices and volumes Nord Pool Elbas announces transfer capacities
Deadline for submission of notifications and schedules to TenneT	15:00	
Deadline for submission of notifications for the next day of operation	16:00	Energinet.dk issues preliminary confirmation report
Deadline for submission of adjusted notifications	17:00	Deadline for the issue of final confirmation report
<ul style="list-style-type: none"> Deadline for submission of operational schedules for the next day of operation Deadline for submission of regulating power bids for reserve obligations 	17:15	
	00:00	Capacity platform between Energinet.dk and TenneT announces transfer capacities for the next day of operation
Before the day of operation		
Deadline for trading on Nord Pool Spot's Elbas for the next delivery hour 01:00-02:00 and cross-border trading between Energinet.dk and TenneT for the delivery hour 02:00-03:00.	00:00	
	00:15	During the day of operation (illustrated by the delivery hour 00:00-01:00)
<ul style="list-style-type: none"> Deadline for submission of adjusted notification for the next delivery hour Deadline for regulating power bids and changes to bids for the next delivery hour 	01:00	Energinet.dk issues confirmation report immediately after receipt of adjusted notifications in case of balance
Start of next delivery hour		

Fig. 3.2: Deadlines for exchange of information

4. Notifications

4.1 Notification requirements

Notifications must include all facilities for which the BRP holds responsibility. Notifications are prepared for 24 hours at a time.

4.1.1 Balance responsibility for production

The notification submitted by the BRP for production must include hourly energy notifications divided into:

- Production, excluding non-adjustable wind power - total amount in MWh/h
- Non-adjustable wind power – total amount in MWh/h
- Trading notifications – distributed on players in MWh/h.

The total electricity generation and number of purchases of the BRP for production must be equal to the total sales of the BRP for production, ie the notification must balance hour by hour.

4.1.2 Balance responsibility for consumption

The notification submitted by the BRP for consumption must include hourly energy notifications divided into:

- Trading notifications – distributed on players in MWh/h.

The notification may also include:

- Non-adjustable consumption – total amount in MWh/h
- Adjustable consumption – total amount in MWh/h.

BRPs may choose whether to submit consumption time series. The total electricity consumption and sales of BRPs for consumption having chosen to submit consumption time series must be equal to the total purchases of the BRP for consumption. The notification must balance hour by hour.

The notification is considered always to balance for BRPs for consumption having chosen not to submit consumption time series, and the consumption notification is calculated as the total sum of notifications with opposite sign.

4.1.3 Balance responsibility for trade

The notification submitted by the BRP for trade must include hourly energy notifications divided into:

- Trading notifications – distributed on players in MWh/h.

A trading notification must always correspond to the trading notification of a counterparty and must balance hour by hour. The total number of purchases made by the BRP for trade must be equal to the total sales of the BRP for trade.

4.2 Submission and check of notifications on the day before the day of operation

4.2.1 In general

Notifications for the next day of operation must be submitted to and received by Energinet.dk via one of the types of communication defined in Regulation F not later than before the preliminary confirmation report is issued on the day before the day of operation.

Energinet.dk checks the notifications of all the BRPs in the period after the preliminary confirmation report is issued and until the final confirmation report is issued. The check includes checks to ensure correspondence between the counterparties' trading notifications as well as checks to ensure that the notifications balance hour by hour¹.

In case of discrepancies or errors noted by Energinet.dk, the BRP must strike a balance as soon as possible by resubmitting adjusted notifications before the final confirmation report is issued.

The time for issuing the final confirmation report will be brought forward if all notifications have been received, checked and approved for balance before the deadline for the issue of the final confirmation report.

Energinet.dk may reject notifications received after the deadlines mentioned.

The notification received by Energinet.dk closest to the deadline applies.

The BRP is responsible for submitting notifications sufficiently early in order for them to reach Energinet.dk before the deadlines. This also applies if normal ways of communication are not available and the emergency communication described in Regulation F has been activated.

In special cases, Energinet.dk may choose to postpone the deadlines for receipt of adjustments of incorrect notifications. In such cases, Energinet.dk will inform all BRPs simultaneously and state the reason for the changed deadlines and indicate the new deadlines.

Energinet.dk will inform the BRPs of the status with regard to the approval of submitted notifications by means of two messages called 'Preliminary confirmation report' and 'Final confirmation report'.

4.2.2 'Preliminary confirmation report'

The preliminary confirmation report is issued after 15:00 and until the final confirmation report is issued not later than 16:00.

¹ The check whether the notifications balance hour by hour is only made for players having volunteered to submit consumption time series.

In case of discrepancy between two BRPs' corresponding trading notifications two by two or imbalance in individual notifications, the relevant BRPs will receive a balance message.

Energinet.dk issues preliminary confirmation reports to the extent necessary in case of discrepancies.

Situations may arise when, after the issue of a preliminary confirmation report, a new preliminary confirmation report is issued because a BRP has subsequently adjusted its notification contrary to the counterparty's notification.

4.2.3 'Final confirmation report'

The final confirmation report will be issued after the preliminary confirmation report not later than 16:00.

The final confirmation report can be issued immediately after the preliminary confirmation report has been issued if all BRPs have achieved total balance.

If errors or discrepancies with regard to trading notifications have not been corrected by the deadline for the issue of the final confirmation report, Energinet.dk will adjust the notifications according to the rules in 4.2.4.

4.2.4 Adjustment of notifications in case of discrepancy between a player's submitted electricity trades

If it is discovered after the issue of the final confirmation report at 16:00 that there are discrepancies between two notifications for electricity trade, Energinet.dk will adjust the notifications according to the following rules:

- In case of discrepancy between two trading notifications, Energinet.dk will adjust one notification so that the numerically lowest value will apply, ie the electricity trade will be restricted.
- If the two trading notifications are numerically equal, but have the same sign, Energinet.dk will adjust both trading notifications to 0.
- If a BRP has submitted a trading notification and its counterparty has not submitted a corresponding notification, Energinet.dk will adjust the BRP's trading notification to 0, ie corresponding to a situation where the counterparty has submitted a trading notification with the value 0.

Exception 1:

Trading notifications with regard to intraday trading where the counterparty is power exchanges or CCPs are exempt from the above-mentioned rules. It is assumed that trading notifications submitted by power exchanges and CCPs in connection with intraday trading are always correct. This means that, in case of discrepancies, Energinet.dk will adjust the BRP's electricity trade with power exchanges and CCPs with regard to intraday trading so that it corresponds to the power exchange's and the CCPs' electricity trade with the BRP.

Exception 2:

Trading notifications for Jutland-German cross-border trading, ie trade between a BRP in Denmark and the BRP's registered counterparty in TenneT's area, are also exempt from the above-mentioned rules. In case of such electricity trade, it is assumed that TenneT is always right. This means that, in case of discrepancies, Energinet.dk will adjust the Danish BRP's electricity trade with the counterparty so that it corresponds to the message received by Energinet.dk from TenneT.

4.2.5 Adjustment of notifications for system operation purposes

Under section 27c of the Danish Electricity Supply Act, Energinet.dk can announce limits to the feed-in of specific production units into certain substations (nodes). Until the final approval of notifications on the day before the day of operation, Energinet.dk can also demand that submitted notifications be adjusted without any financial compensation being made if this is required to ensure normal security of supply and system operation. The BRPs will be contacted in such cases.

4.3 Adjustment of notifications during the day of operation

Submitted notifications, approved the previous day, may be adjusted during the day of operation to changed consumption or production forecasts via intraday trading and bilateral trading by submission of an adjusted notification.

Adjustments to notifications must be submitted to and received by Energinet.dk not later than 45 minutes before the delivery hour.

The notification received last before a deadline by Energinet.dk will apply. Energinet.dk may reject adjustments to notifications received too late.

The content of the adjusted notification must correspond to the originally approved notification for the day of operation, but supplemented by adjustments for intraday trading and/or bilateral trading in order to create balance between adjusted consumption or production forecasts or adjusted trades².

Notifications may not include regulating power orders placed during the day of operation by Energinet.dk.

Immediately after receipt of adjusted notifications, they are checked by Energinet.dk. The check is carried out for the entire notification.

Energinet.dk checks whether a BRP's adjusted notifications for intraday trading and bilateral trading correspond to the counterparty's notifications for intraday trading and bilateral trading and that the notifications balance. The check comprises both the BRPs' new adjusted notifications and already approved (and unadjusted) trades.

² See examples of adjustment of notifications in section 8

The principles for this check and any correction of discrepancies between trading notifications and imbalances in the individual notification are the same as described for notifications submitted on the day before the day of operation, see 4.2. Any necessary adjustment of notifications for the next delivery hour will be effected without the participation of the BRP.

The BRP(s) will be informed as soon as possible if balance requirements have not been met.

5. Operational schedules for adjustable production and consumption

5.1 Operational schedule requirements

Operational schedules updated on an ongoing basis in the form of 5-minute power schedules for the expected production from adjustable facilities and expected offtake of adjustable consumption, respectively, are used by Energinet.dk to calculate the physical balance in the power system up to and during the actual day of operation and to limit imbalances occurring during the day of operation in the most efficient and financially advantageous way.

BRPs for production and BRPs for consumption with adjustable consumption must therefore inform Energinet.dk on an ongoing basis of the expected operation of their facilities in the form of operational schedules.

Energinet.dk needs to know the extent and duration of expected imbalances as early as possible. The first version of the operational schedule for the next day of operation must be submitted to and received by Energinet.dk by 17:00 on the day before the day of operation by means of one of the message types defined in Regulation F.

5.1.1 Operational schedules

5-minute power schedules form the basis for handling real-time power imbalances and regulating power orders. In Western Denmark they form the basis of the settlement of power imbalances with regard to production. The power schedules must reflect the expected operation of the electricity generation facilities and the adjustable consumption at any time.

The number of power schedules included in the operational schedule depends on the type of electricity generation facility and consumption:

- For offshore wind farms ≥ 25 MW, one power schedule must be submitted for each wind farm
- For adjustable facilities ≥ 10 MW (wind power excluded), one power schedule must be submitted for each facility
- For adjustable facilities < 10 MW (wind power excluded), a total must be submitted for all facilities
- For adjustable consumption ≥ 10 MW, one power schedule must be submitted for each consumption site
- For adjustable consumption < 10 MW, a total must be submitted for all consumption sites.

For wind power plants (with the exception of offshore wind farms ≥ 25 MW) special rules apply:

- If the BRP actively uses the wind power plants in the market (either in the spot, intraday or regulating power markets) through remote control of the turbines, the BRP must submit a special 5-minute time series indicating the

number of MWs (installed capacity) produced by the total portfolio of operational wind power plants that have been closed down.

- If the BRP solely handles non-adjustable wind power, the BRP need not submit power schedules or other operation information during the day of operation.

5.1.2 Content of time series in operational schedules

Operational schedules for BRPs for production must as a minimum include the following time series:

- Production schedule for each facility/total number of facilities in MW
- Current minimum capacity for each facility in MW (≥ 10 MW)
- Current maximum capacity for each facility in MW (≥ 10 MW).

Operational schedules may also include a special 5-minute time series indicating the number of MWs (installed capacity) produced by the total portfolio of operational wind power plants that have been closed down, see 5.1.1.

If the facility is used for the supply of ancillary services, the schedule may include time series as mentioned in 6.1.3 according to individual agreement between the BRP and Energinet.dk.

Operational schedules for BRPs for consumption with adjustable consumption made available to Energinet.dk must include the following time series:

- Total adjustable consumption for each consumption site in MW
- Current minimum capacity for each consumption site (≥ 10 MW)
- Current maximum capacity for each consumption site (≥ 10 MW).

5.1.3 Communication between BRPs and Energinet.dk

If a BRP holds balance responsibility for electricity generation facilities including more than non-adjustable wind power or balance responsibility for adjustable consumption, it is required that Energinet.dk can get in contact with a person with the BRP at any time. The person may be a production engineer at one of the BRP's power plants or facilities.

The contact must have a general overview of the power plants/facilities for which the BRP holds balance responsibility and must ensure that adjusted operational schedules are submitted on an ongoing basis in accordance with the expected operation at all power plants/facilities under the BRP's balance responsibility.

To ensure effective communication, there can only be one contact (at a time), alternatively one place of contact, per BRP.

5.2 Submission of adjusted operational schedules during the day of operation

The operational schedule must be updated as required during the day of operation to reflect the actual operation. This also applies to the special time series in relation to wind power plants <25 MW activated through remote control.

If a BRP's expected physical production or physical consumption deviates from the operational schedule by more than 10% of the installed capacity per facility or 10% of the total for facilities under 10 MW for more than 10 minutes, the BRP must submit a new operational schedule to Energinet.dk. A minimum limit of 10 MW applies irrespective of installed capacity.

In case of an outage or the like, the consequences of which are such that the BRP cannot comply with the operational schedule last submitted, a new operational schedule must be submitted as it must in any other situation with imbalance.

The new operational schedules submitted during the day of operation will be 'merged' with previously submitted schedules.

The 'merging' is effected with a certain delay in relation to the time when the new schedule was received by Energinet.dk. The time for the merging is described in detail in the BS document 'Handling of notifications and schedules in the Danish electricity market'.

It is the resulting 'merged' operational schedule that forms the basis of the settlement of power imbalances for BRPs holding balance responsibility for production in Western Denmark, see Regulation C2.

6. Capacity forecasts and capacity schedules

Energinet.dk uses capacity forecasts and capacity schedules to make grid reliability calculations, etc.

The following schedules must be submitted:

- 4-week forecast
- Daily forecast
- Capacity schedules for reserve obligations.

6.1.1 4-week forecast

BRPs for production must submit schedules for all electricity generation facilities ≥ 25 MW indicating the facilities that can be expected to be operational in a coming 4-week period. A total must be submitted for facilities < 25 MW.

The schedules must give the following information for each facility ≥ 25 MW for each of the four weeks:

- Name of unit/facility
- Operational condition of the facility (from the list below)
- Nominal capacity (MW)
- Estimated maximum capacity in expected operational mode (MW)
- Brief description of cause of restrictions.

Estimated capacity must be entered with one value for each of the four weeks. Nominal capacity must be entered with one value for the 4-week period. Deviations during the 4-week period from the values entered must be stated under the description of cause of restrictions.

The operational mode of the facility may be one of the following:

- **Operational:** The electricity generation facility is immediately operational and can start from completely cold condition in the time specified in the technical data for the facility. Reduced capacity must be described briefly.
- **Conditionally operational:** The electricity generation facility is not immediately operational due to restrictions caused by, for example, staff issues, plant defects, fuel, environment etc. A brief description must be given of the restriction, and its estimated duration must be stated.
- **Maintenance:** The electricity generation facility is inoperational for maintenance according to approved maintenance schedule. A timetable must be included in the description.
- **Out of order:** The electricity generation facility is inoperational. A timetable for repair and commissioning must be included in the description.
- **Mothballed:** The electricity generation facility is not available. The earliest date when it can be expected to be operational must be stated in the description.

- **Not yet commissioned:** The electricity generation facility is under construction. Estimated time of commissioning must be specified in the description.
- **Scrapped:** The electricity generation facility is in the process of being scrapped and will no longer be available.

The schedule for facilities <25 MW must include the following information for each of the four weeks:

- Total nominal capacity for facilities expected to be in operation (MW)
- Estimated total maximum capacity available (MW)
- Short description of cause of any restrictions.

Estimated capacity must be entered with one value for each of the four weeks. The total nominal capacity must be entered with one value for the 4-week period. Deviations during the 4-week period from the values entered must be stated in the description of cause of restrictions.

The schedules must be submitted every Thursday by 17:00, covering the subsequent four weeks beginning with the next Monday at 00:00.

The schedules must be resubmitted in case of material adjustments and must be available in an updated version on the day before the day of operation and during the day of operation.

6.1.2 Daily forecast

For all electricity generation facilities ≥ 25 MW, BRPs for production must submit schedules for the facilities that can be expected to be in operation during the next day of operation. A total must be submitted for facilities <25 MW.

The schedules must include the following information for each facility ≥ 25 MW:

- Name of unit/facility
- Current maximum production capacity (MW)
- Current minimum production capacity (MW).

The schedules must include the following information for facilities <25 MW:

- Total current maximum production capacity (MW)
- Total current minimum production capacity (MW).

The production capacity must be stated on an hourly basis.

The daily forecast must be submitted to Energinet.dk by 07:30 on the day before the day of operation.

6.1.3 Capacity schedules for reserve obligations

BRPs for production must submit operational schedules for the next day of operation as described in 5.1 and 5.2.

BRPs having entered into an agreement with Energinet.dk on the supply of ancillary services and regulation reserves must also submit schedules for ancillary services together with and in addition to the operational schedules for production and adjustable consumption:

- Frequency-controlled normal operation reserves (MW)
- Frequency-controlled disturbance reserves (MW)
- Primary reserves (MW)
- LFC reserves (MW)
- Fast reserves (15 minutes) (MW)
- Slow reserves (60/90 minutes) (MW)
- Regulating power for upward regulation (MW)
- Regulating power for downward regulation (MW).

In addition, the following information must be provided for facilities having the possibility of using overload areas:

- Current possible maximum load, including overload (TOTMAX)
- Current possible minimum load, technical minimum (TOTMIN).

The number of schedules to be submitted for ancillary services and their resolution (hourly schedules and 5-minute schedules respectively) must comply with the agreement between the BRP for production and Energinet.dk.

7. Regulating power

7.1 General

Energinet.dk activates regulating power to maintain the physical balance of the system. The activation is effected taking into account the price of regulating power, the current operational situation and the transfer capacity in the transmission grid, see Regulation C2.

7.2 Submission of regulating power bids

A regulating power bid from a BRP for production, alternatively from a BRP for consumption with adjustable consumption, consists of a time series and must include the following information:

Common to the bid:

- BRP
- Unique bid reference
- Price area (DK1 or DK2)
- Delay in relation to regulation
- Start and stop gradient for regulation
- Name of unit (optional)
- Contract id (reference to agreements with Energinet.dk).

For each time interval (in whole hours) in which the regulating power bid is offered, the following information must be provided:

- Volume of regulating power in MW
- Price of regulating power in DKK/MWh or EUR/MWh.

Delay in relation to regulation indicates the time from the placing of an order to the start of regulation. The default time is five minutes for regulating power ordered via schedules.

Bids from wind power plants that are not offshore wind farms ≥ 25 MW cannot be pooled with those made by other types of electricity generation facilities, ie they must be 'pure' regulating power bids comprising only generation from wind power plants that are not in the category offshore wind farms ≥ 25 MW.

Regulating power bids comprising wind power plants must be marked with a special product code. The product code can be seen from the appendix to Regulation F, ie the BT document 'Business transactions for submitting notifications and schedules'.

For BRPs under an obligation to supply regulating power, the first bid, as a minimum corresponding to the reserve obligation, must be submitted to Energinet.dk by 17:00 on the day before the day of operation.

New regulating power bids can be submitted and the price and volume of existing bids adjusted up to 45 minutes before commencement of the delivery hour

(calculated from the time of receipt by Energinet.dk). Energinet.dk will not accept bids or adjustments received after the deadline.

7.2.1 Ordering of regulating power via schedules

The regulation is based on a 5-minute power schedule (referring to the bid) sent by Energinet.dk to the BRP with or without indication of which unit is to perform the regulation. The power schedule is a supplement to the notifications last submitted by the BRP.

Regulating power bids >10 MW can be activated in part. However, the regulating power order must not be lower than 10 MW at any time³.

It will always be the total number of activations that is stated in the schedule last submitted.

The BRP plans and load dispatches the regulation prior to the start of the regulation and returns the operational schedule that includes the regulation. A new schedule must be submitted for the day before and the day after midnight for orders covering a span of time beginning before and ending after midnight.

The 'merging' of a previously submitted operational schedule and a new schedule is described in more detail in the BS document 'Handling of notifications and schedules in the Danish electricity market'.

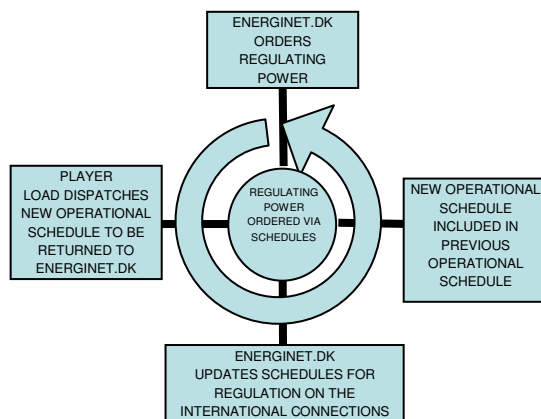


Fig. 6.2.1: Ordering of regulating power via schedules

The above-mentioned requirements as to the activation of regulating power mean that the BRP must be able to load dispatch the regulating power order and submit a new operational schedule to Energinet.dk, at worst within 5 minutes from the time of ordering. This deadline is necessary for Energinet.dk to be able to meet the requirements laid down by the common Nordic regulating power market.

³ Except during activation (ramp-up) or deactivation (ramp-down).

8. Services available to BRPs

The following services are available to the BRPs:

8.1 Forecasts and trading capacities

8.1.1 Electricity consumption forecasts

Forecasts in the form of hourly energy notifications for electricity consumption during the next day of operation, separately for Eastern and Western Denmark, are published daily on Energinet.dk's website.

8.1.2 Forecasts for wind power production

Forecasts in the form of hourly energy notifications for the wind power production during the previous day of operation, separately for Eastern and Western Denmark, are published daily on Nord Pool Spot's website.

8.1.3 Forecast for trading capacities in the coming week

Indicative forecasts for the trading capacity between Denmark and its neighbouring areas for the coming week are published every week on Nord Pool Spot's website.

8.1.4 Capacities between Western Denmark and Germany

Binding trading capacities for the next day of operation that are offered at an auction on the interconnection between Western Denmark and TenneT are published daily on TenneT's website.

8.1.5 Capacities between Elspot areas for Elspot trading and intraday trading

Binding trading capacities that are made available to Nord Pool Spot for trading in the spot market for the next day of operation are published daily on Nord Pool Spot's website.

Trading capacities for actual and next day of operation made available to Nord Pool Spot for trading in the Elbas market are updated on an ongoing basis and published on Nord Pool Spot's website.

Trading capacities for actual and next day of operation made available to the capacity platform on the Jutland-German border are published on the website www.intraday-capacity.com.

8.1.6 Services

The above-mentioned forecasts for electricity consumption in the form of time series will be made available to BRPs on Energinet.dk's server immediately after publication and in case of adjustments/updates.

8.2 Messages of approval of notifications

8.2.1 Preliminary confirmation report for the day of operation

Energinet.dk offers to send a preliminary confirmation report to the BRPs. The preliminary confirmation report indicates whether the BRP has obtained balance or not and whether the BRP's trading notifications correspond to those of its counterparty or not, and information about the time series forming the basis of the preliminary confirmation report.

The BRP may choose to

- always receive a preliminary confirmation report, or
- only receive a preliminary confirmation report if the BRP has not obtained balance or if the BRP's trading notifications do not correspond to those of its counterparty.

8.2.2 Final confirmation report on notifications

Energinet.dk sends a message concerning final confirmation report on notifications to the BRPs. The message includes information about the BRP's balance and the approved notifications forming the basis of the final confirmation report.

8.2.3 Preliminary confirmation report after adjustment of notifications

In connection with trades during the day of operation (after approval of trade for the day of operation), the BRP may choose to receive a preliminary confirmation report for delivery hours after the next delivery hour.

A preliminary confirmation report includes information about the BRP's balance and the notifications forming the basis of the preliminary confirmation report.

The BRP may choose to only receive such preliminary confirmation report if it has submitted new notifications and if the BRP has either not obtained balance or its trading notifications do not correspond to those of the counterparty.

8.2.4 Final confirmation report on notifications after intraday trading

If a BRP adjusts its notifications or a counterparty adjusts a trading notification with the relevant BRP, Energinet.dk sends a final confirmation report for the next delivery hour to the BRP. A final confirmation report includes information about the BRP's balance and the approved notifications forming the basis of the final confirmation report.

8.2.5 Confirmation report as time series

BRPs may choose to receive the approved notifications as time series immediately after approval. This applies both after the approval of notifications on the day before the day of operation and after approval of adjusted notifications after intraday trading.

8.3 Messages via SMS

Energinet.dk offers to send short status messages of preliminary and final confirmation reports on notifications, and during the day of operation adjusted notifications, to BRPs via SMS.

SMS messages can be sent to groups of contacts registered by the BRP with Energinet.dk.

8.4 Access to other time series

Energinet.dk offers access to the following time series via Energinet.dk's website:

- Elspot trading between price areas
- Intraday trading between price areas
- Total bilateral electricity trade on the border between Germany and Western Denmark
- Electricity consumption per price area (indirect metering)
- Total electricity generation per price area.

The time series are indicative. The two last-mentioned time series are updated with a delay and are of preliminary quality - not settlement quality.

9. Examples of adjustment of notifications during the day of operation

Example 1: Adjustment of production notification by BRPs for production.

A1) Production deficit – adjusted via Elbas (all values in MWh/h)

	Notification	Current balance	Adjusted notification
Production	+ 2000	+ 1800	+ 1800
Elspot purchase			
Elspot sale	- 800	- 800	- 800
Bilateral purchase			
Bilateral sale	- 1200	- 1200	- 1200
Elbas purchase			+ 200
Sum	0	- 200	0

A2) Production deficit – adjusted via bilateral trading (all values in MWh/h)

	Notification	Current balance	Adjusted notification
Production	+ 2000	+ 1800	+ 1800
Elspot purchase			
Elspot sale	- 800	- 800	- 800
Bilateral purchase			+ 200
Bilateral sale	- 1200	- 1200	- 1200
Sum	0	- 200	0

B1) Production surplus - adjusted via Elbas (all values in MWh/h)

	Notification	Current balance	Adjusted notification
Production	+ 2000	+ 2200	+ 2200
Elspot purchase			
Elspot sale	- 800	- 800	- 800
Bilateral purchase			
Bilateral sale	- 1200	- 1200	- 1200
Elbas			- 200
Sum	0	+ 200	0

B2) Production surplus - adjusted via bilateral trading (all values in MWh/h)

	Notification	Current balance	Adjusted notification
Production	+ 2000	+ 2200	+ 2200
Elspot purchase			
Elspot sale	- 800	- 800	- 800
Bilateral purchase			
Bilateral sale	- 1200	- 1200	- 1200
Bilateral trading			- 200
Sum	0	+ 200	0

Example 2: Adjustment of consumption notifications by BRPs for consumption

A1) Current consumption lower than anticipated – adjusted via Elbas (all values in MWh/h)

	Notification	Current balance	Adjusted notification
Consumption	- 2000	- 1800	- 1800
Elspot purchase	+ 800	+ 800	+ 800
Elspot sale			
Bilateral purchase	+ 1200	+ 1200	+ 1200
Bilateral sale			
Elbas			- 200
Sum	0	+ 200	0

A2) Current consumption lower than anticipated – adjusted via bilateral trading (all values in MWh/h)

	Notification	Current balance	Adjusted notification
Consumption	- 2000	- 1800	- 1800
Elspot purchase	+ 800	+ 800	+ 800
Elspot sale			
Bilateral purchase	+ 1200	+ 1200	+ 1200
Bilateral sale			
Bilateral trade			- 200
Sum	0	+ 200	0

B1) Current consumption higher than anticipated - adjusted via Elbas (all values in MWh/h)

	Notification	Current balance	Adjusted notification
Consumption	- 2000	- 2200	- 2200
Elspot purchase	+ 800	+ 800	+ 800
Elspot sale			
Bilateral purchase	+ 1200	+ 1200	+1200
Bilateral sale			
Elbas			+ 200
Sum	0	- 200	0

B2) Current consumption higher than anticipated – adjusted via bilateral trading (all values in MWh/h)

	Notification	Current balance	Adjusted notification
Consumption	- 2000	- 2200	- 2200
Elspot purchase	+ 800	+ 800	+ 800
Elspot sale			
Bilateral purchase	+ 1200	+ 1200	+ 1200
Bilateral sale			
Bilateral trade			+ 200
Sum	0	- 200	0