

Instructions for Daily Schedules delivery

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1 INTRODUCTION

In the control area of Bosnia and Herzegovina which is managed by NOSBiH daily schedules may be submitted by market participant having valid licence and being registered with NOSBiH.

The market participant shall deliver a daily schedule to NOSBiH through the ESS Platform (*ENTSO-E Scheduling System*), independently or through its BRP.

Daily schedule may contain:

- Plan of hourly amount of total electricity consumption forecast,
- Plan of hourly amount of scheduled electricity generation per generation units connected to the transmission system,
- Plan of hourly amount of planned aggregated generation of "Virtual Power Plant" for all power plants connected to the distribution system which are registered within "Virtual Power Plants",
- Plan of hourly amount of purchase/reception of electricity distributed to partners and cross-border transmission capacity in case of cross-border transactions,
- Plan of hourly amount of sale/delivery of electricity distributed to partners and cross-border transmission capacity in case of cross-border transactions,
- Plan of hourly amount of electricity delivered to cover losses in the transmission system.

2 REPORTING EXCHANGE PLANS TO THE ESS PLATFORM

A daily schedule shall be submitted as a unique document. Each submitted daily schedule should be balanced for all generation/purchase/reception of electricity and for consumption/sale/delivery of electricity for each trading period.

ESS standard defines the format in which all these exchange plans shall be submitted.

The ESS platform shows the information whether the daily schedule is accepted or rejected.

2.1. REPORTING CROSS-BORDER EXCHANGE PLANS

Cross-border exchange implies electricity exchange between market participants from neighbouring control areas.

Cross-border plans must contain information on the border and partners on both sides of the border by using adequate EIC codes and a unique code of the cross-border transmission capacity that is being used. The business type A03 is used for nomination of cross-border exchange plans. Image 2.1.1. shows an example of reporting the cross-border exchange plan.

```

- <ScheduleTimeSeries>
  <SendersTimeSeriesIdentification v="1" />
  <SendersTimeSeriesVersion v="1" />
  <BusinessType v="A03" />
  <Product v="8716867000016" />
  <ObjectAggregation v="A03" />
  <InArea v="10YTSO-1" codingScheme="A01" />
  <OutArea v="10YTSO-2" codingScheme="A01" />
  <InParty v="XBOS-1" codingScheme="A01" />
  <OutParty v="XBOS-2" codingScheme="A01" />
  <CapacityContractType v="A03" />
  <CapacityAgreementIdentification v="OZNAKA KAPACITETA" />
  <MeasurementUnit v="MAW" />

```

Image 5.3.1: An example of reporting the cross-border exchange plan

2.2 REPORTING INTERNAL EXCHANGE PLANS

Internal exchange implies electricity exchange between market participants from BiH control area.

By using adequate EIC codes internal exchange plans must specify a relevant control area of Bosnia and Herzegovina and partners having electricity exchange. The business type A02 is used for nomination of internal exchange plans.

Image 2.2.1. shows an example of reporting the internal exchange plan.

```

- <ScheduleTimeSeries>
  <SendersTimeSeriesIdentification v="2" />
  <SendersTimeSeriesVersion v="1" />
  <BusinessType v="A02" />
  <Product v="8716867000016" />
  <ObjectAggregation v="A03" />
  <InArea v="10YBA-JPCC-----D" codingScheme="A01" />
  <OutArea v="10YBA-JPCC-----D" codingScheme="A01" />
  <InParty v="36XBOS-1" codingScheme="A01" />
  <OutParty v="36XBOS-2" codingScheme="A01" />
  <MeasurementUnit v="MAW" />

```

Image 5.3.2: An example of reporting the internal exchange plan

2.3. REPORTING EXCHANGE PLANS TO COVER COMPENSATIONS

The plan for covering compensations is defined as a specific type of internal exchange. The business type A02 must be used for reporting exchange plans to cover compensations. With this type of internal exchange, in addition to the control area and partners having electricity exchange it is also obligatory to define a metering point for compensations with EIC code. An example of reporting the exchange plan to cover compensations is shown in Image 2.3.1.

```

- <ScheduleTimeSeries>
  <SendersTimeSeriesIdentification v="14" />
  <SendersTimeSeriesVersion v="1" />
  <BusinessType v="A02" />
  <Product v="8716867000016" />
  <ObjectAggregation v="A02" />
  <InArea v="10YBA-JPCC-----D" codingScheme="A01" />
  <OutArea v="10YBA-JPCC-----D" codingScheme="A01" />
  <MeteringPointIdentification v="99Z-INT-COMPEN-X" codingScheme="A01" />
  <InParty v="10XBA-JPCCZEKC-K" codingScheme="A01" />
  <OutParty v="36XBOS-2" codingScheme="A01" />
  <MeasurementUnit v="MAW" />

```

Image 5.3.3: An example of reporting the exchange plan to cover compensations

2.4. REPORTING EXCHANGE PLANS TO COVER LOSSES

The plan for covering losses is defined as a specific type of exchange. The business type A15 must be used for reporting exchange plans to cover losses. Exchange plans to cover losses must specify the control area of Bosnia and Herzegovina and partners having electricity exchange by using adequate EIC codes. With this type of exchange, NOSBiH is always one of the partners. An example of reporting the exchange plan to cover losses is shown in Image 2.4.1.

```

- <ScheduleTimeSeries>
  <SendersTimeSeriesIdentification v="13" />
  <SendersTimeSeriesVersion v="1" />
  <BusinessType v="A15" />
  <Product v="8716867000016" />
  <ObjectAggregation v="A03" />
  <InArea v="10YBA-JPCC-----D" codingScheme="A01" />
  <OutArea v="10YBA-JPCC-----D" codingScheme="A01" />
  <InParty v="10XBA-JPCCZEKC-K" codingScheme="A01" />
  <OutParty v="36XBOS-1" codingScheme="A01" />
  <MeasurementUnit v="MAW" />

```

Image 5.3.4: An example of reporting the exchange plan to cover losses

2.5. REPORTING GENERATION PLANS

Market participant must report its generation plans in accordance with the Market rules. The business type A01 must be used for reporting generation plans. By using adequate EIC codes in generation plans it is obligatory to specify the control area of Bosnia and Herzegovina (the control area that the generation unit is connected to), a metering point of the generation unit's connection and an owner of the generation unit. An example of reporting the generation plan is shown in Image 2.5.1.

```

<ScheduleTimeSeries>
  <SendersTimeSeriesIdentification v="2" />
  <SendersTimeSeriesVersion v="1" />
  <BusinessType v="A01" />
  <Product v="8716867000016" />
  <ObjectAggregation v="A02" />
  <InArea v="10YBA-JPCC-----D" codingScheme="A01" />
  <MeteringPointIdentification v="36Z-PROIZVODNI OBJEKT" codingScheme="A01" />
  <InParty v="36XEPBIHSARAJ--X" codingScheme="A01" />
  <MeasurementUnit v="MAW" />

```

Image 5.3.5: An example of reporting the generation plan

2.6. REPORTING FORECASTED CONSUMPTION

Market participant must report consumption forecast of all consumers within its jurisdiction. The business type A04 must be used for reporting forecasted consumption. By using adequate EIC codes in reporting forecasted consumption it is obligatory to specify the control area of Bosnia and Herzegovina and the market participant covering the consumption. An example of reporting the consumption forecast is shown in Image 2.6.1. If, due to business reasons, it is necessary to separately present consumption of a specific generation unit, it is important then to specify the metering point of the generation unit (Image 2.6.2).

```

- <ScheduleTimeSeries>
  <SendersTimeSeriesIdentification v="1" />
  <SendersTimeSeriesVersion v="1" />
  <BusinessType v="A04" />
  <Product v="8716867000016" />
  <ObjectAggregation v="A03" />
  <OutArea v="10YBA-JPCC-----D" codingScheme="A01" />
  <OutParty v="36XBOS-1" codingScheme="A01" />
  <MeasurementUnit v="MAW" />

```

Image 5.3.6: An example of reporting forecasted consumption

```

- <ScheduleTimeSeries>
  <SendersTimeSeriesIdentification v="TS00018"/>
  <SendersTimeSeriesVersion v="2"/>
  <BusinessType v="A04"/>
  <Product v="8716867000016"/>
  <ObjectAggregation v="A02"/>
  <OutArea v="10YBA-JPCC-----D" codingScheme="A01"/>
  <MeteringPointIdentification v="36Z-KONZUM-1" codingScheme="A01"/>
  <OutParty v="36XBOS-1" codingScheme="A01"/>
  <MeasurementUnit v="MAW"/>

```

Image 5.3.7: An example of reporting forecasted consumption with a metering point

3 ESS DATA EXCHANGE

Guidelines for the implementation of ESS standards (version 3.6) defines basic data exchange processes and their roles on which grounds the processing of daily schedules shall be organized.

Guidelines for the implementation of ESS standards allows some alternative possibilities for certain processes. The following text describes the way NOSBiH deals with exchange processes and processing of daily schedules.

3.1. RECEPTION OF DAILY SCHEDULE AND ACKNOWLEDGEMENT MESSAGE

Upon receipt of the daily schedule, its technical validity shall be verified, i.e., whether it contains all necessary attributes and whether the XML document is valid.

If the daily schedule is not technically correct, shall be rejected and the market participant shall receive a message with *Reason Code "A02" (Message fully rejected)* giving reasons for its rejection (negative acknowledgment message). The market participant may resend the corrected daily schedule with the same version of the document.

If the daily schedule is technically correct, the market participant shall receive a message with *Reason Code "A01" (Message fully accepted)* informing the market participant that its daily schedule is accepted (positive acknowledgment message). The positive acknowledgment message means that the delivered daily schedule is formally correct, and it does not provide information on quality of the data delivered within the daily schedule.

Only upon receipt of the positive acknowledgment message, the market participant may consider that its daily schedule is delivered to NOSBiH.

3.2. DAILY SCHEDULE – ANOMALY REPORT

After the period for daily schedules nomination is completed, the process of harmonization of submitted exchange plans shall start as well as the data verification.

The harmonization shall be performed for cross-border exchange plans and for plans within the control area separately.

At 2 p.m. there shall be made a preliminary harmonization of exchange plans within the control area of Bosnia and Herzegovina and verification of harmonization of daily schedules submitted by that time.

After this verification is completed, the market participant having non-harmonized plan, or an unbalanced daily schedule shall be given the report providing a preliminary explanation on errors discovered in the daily schedule.

Upon expiry of the period for daily schedules nomination, at 2:30 p.m. starts the process of harmonization of exchange plans within the control area of Bosnia and Herzegovina, cross-border exchange plans and verification of harmonization.

After this verification is completed, the market participant having non-harmonized plan, or an unbalanced daily schedule shall be given the ANO report providing information for the receiving party to correct.

In case of any non-harmonization and unbalanced daily schedules, the ANO report contains a specific *Reason Code* according to *ENTSO-E GENERAL CODE LIST FOR DATA INTERCHANGE*.

3.1.1 DAILY SCHEDULE - INTERMEDIATE CONFIRMATION

If cross-border exchange plans are not harmonized, the market participant shall receive a report on intermediate confirmation of the daily schedule informing the recipient on non-harmonized plans and a proposal for the plan's change if market participants do not reach an agreement on disputed transactions.

In case of any non-harmonization of cross-border plans of daily schedules, the report on intermediate confirmation contains a specific *Reason Code* according to *ENTSO-E GENERAL CODE LIST FOR DATA INTERCHANGE*.

3.3. DAILY SCHEDULE – FINAL CONFIRMATION

After the process of harmonization is completed, market participants shall receive a report confirming the daily schedule for their cross-border exchange plans. If cross-border exchange plans are harmonized without any changes made by NOSBiH, then the report contains *Reason Code A06 – Schedule accepted*.

If certain cross-border exchange plans are harmonized by being imposed by the system operator, then the report contains *Reason Code A86 - confirmation with adjustment*.

4 GATE CLOSURE TIME FOR DAILY SCHEDULES NOMINATION

4.1. GATE CLOSURE TIME FOR DAILY SCHEDULES NOMINATION FOR DAY AHEAD

Due time for daily schedules nomination is the time by which market participants must submit their daily schedules to the system operator. Daily schedules submitted after the deadline shall be automatically rejected.

Nominations of daily schedules in a day ahead time frame (D-1) shall be done in two steps:

- Nomination of plans pertaining to long-term cross-border transmission rights use (annual and monthly cross-border transmission capacity) which must be completed until 8:00 a.m. in a day "D-1" for a day "D".
- Nomination of internal exchange plans, generation plans, consumption forecast and exchange plans pertaining to daily cross-border transmission rights use which must be completed until 2:30 p.m. in a day "D-1" for a day "D".



Image5.3.1: Nomination time and the time for daily schedules corrections in a day D-1

4.2. GATE CLOSURE TIME FOR DAILY SCHEDULES NOMINATION FOR INTRADAY TIME FRAME

Nomination of a daily schedule in intraday time period (D) may be done from 6:00 p.m. in a day "D-1" until "H-0h45min" in a day "D", where "H" is an hour when the planned exchange is starting.

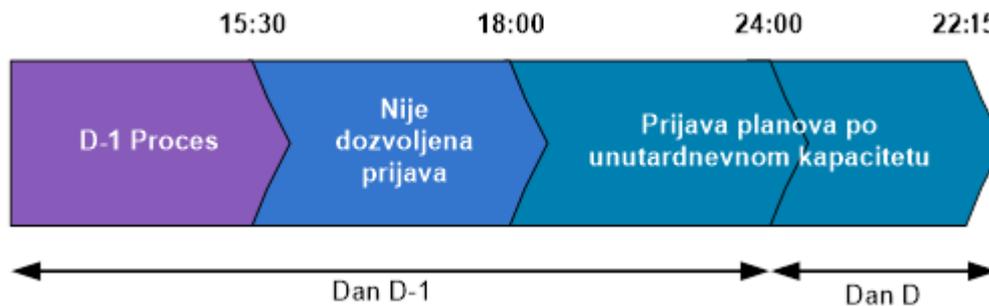


Image 5.3.1: Nomination time in intraday time frame

Already harmonized and confirmed cross-border transactions are rejected in a way that transactions with same values shall be nominated in the opposite direction for hours to which the rejection pertains to.

With each nomination affected by a change of the cross-border plan, it is necessary to ensure cross-border transmission capacities. Intraday cross-border capacity allocated by NOSBiH should be reserved 60 minutes before the start of a scheduled exchange at the latest since after that deadline allocated transmission capacities are taken. The nomination of intraday cross-border exchange plans may be done up to 45 minutes before the beginning of an hour for which cross-border exchange is planned. The nomination of internal exchange plans and exchange plans to cover losses may be done up to 5 minutes before the beginning of an hour for which exchange is planned. The nomination of generation plans, and forecast/plan may be done up to 5 minutes before the beginning of an hour for which exchange is planned.

Last version of the daily schedule as adopted by NOSBiH shall be binding and shall be used in imbalance calculation phase.

If the EES platform becomes technically unavailable, nominations in an intraday time frame shall not be done until this problem is resolved.

5 HARMONIZATION OF DAILY SCHEDULES

5.1. HARMONIZATION IN A DAY AHEAD TIME FRAME

Harmonization of daily schedules in a day ahead time frame (D-1) shall be done in two steps:

- harmonization of plans pertaining to long-term cross-border transmission rights use (annual and monthly cross-border transmission capacity) which starts at 8:00 a.m. in a day "D-1" for a day "D", in three correction cycles lasting for 10 minutes, and ends at 8:30 a.m.
- harmonization of internal exchange plans and exchange plans pertaining to daily cross-border transmission rights use which starts at 2:30 p.m. in a day "D-1" for a day "D", in four correction cycles lasting for 15 minutes, and ends at 3:30 p.m.

If within a correction cycle some errors or non-harmonized exchange plans are discovered in the market participant's daily schedule submitted in a day D-1, the market participant shall receive an email through the ESS platform informing the recipient on errors that should be removed. After receiving the message about errors, the market participant shall submit a new version of the daily schedule (marked with greater number than previous version) with no errors now. New version of the daily schedule shall be submitted before the beginning of a new correction cycle so that it can be taken into consideration in that correction cycle.

If the market participant does not make necessary changes of plans until the cut-off time (3:30 p.m.), NOSBiH may adjust its daily schedule in one of these ways:

- a) Modifying the non-harmonized plan to lower value
- b) Modifying the non-harmonized plan to zero

NOSBiH may declare the daily schedule or its parts invalid in these cases:

- a) If the daily schedule contains cross-border exchange plans for which no cross-border transmission capacity is ensured
- b) If the daily schedule contains cross-border exchange plans which are not harmonized with neighbouring system operator
- c) If the daily schedule contains exchange plans which are not harmonized within the BiH Control Area
- d) If the daily schedule contains internal exchange plan exceeding the issued grid restrictions within BiH
- e) If the daily schedule contains any data technically infeasible or illogic (e.g., larger generation than technically possible)
- f) If the daily schedule is not balanced.

5.2. HARMONIZATION IN INTRADAY TIME FRAME

Intra day harmonization shall be done after each nomination for the entire day, 45 minutes before the beginning of an hour. Harmonization shall be done in one correction cycle and it shall last for 10 minutes.

If the harmonization process indicates to discrepancy in reported intraday exchange plans, the system operator has the right to modify the values of nominated intraday plans.

If there is a difference in reported exchange plans, the rule of lower value shall be applied.

5.3. LICENCE SUSPENSION

In case of non-compliance and violation of NOSBiH Rules for delivery and harmonization of daily schedules, it is possible to initiate the procedure of suspending the licence.

6 FORMAT OF XML DOCUMENT FOR DAILY SCHEDULES REPORTING

A document providing the daily schedule must contain all plans for the calendar day for which it is being submitted.

6.1. MESSAGE HEADER

- a) **Message identification:** Marking of documents must be distinctive and unambiguous which means that the document must contain a date to which the document refers to and the name of BRP submitting the document. BRP may freely choose a method for marking the document. It is NOSBiH's recommendation to use this form for marking: "YYYYMMDD_BRS_EIC CODE".
- b) **Message version:** the version of last submitted document.
- c) **Message type:** A01 must be entered, marking daily schedule of a market participant.
- d) **Process type:** A01 must be entered, marking daily schedule for day ahead.
- e) **Schedule classification type:** A01 must be entered, marking a detailed review of plans.
- f) **Sender identification – coding scheme:** A01 must be entered, determining that only a sender's EIC code is allowed for identification.
- g) **Sender role:** A08 must be entered, marking the balance responsible party.
- h) **Receiver identification – coding scheme:** A01 value must be used, determining that a receiver's EIC code is to be used. 10X EIC code must be used for the TSO.
- i) **Receiver role:** A04 value must be used for the TSO receiving daily schedules.
- j) **Message date and time:** the date and time a daily schedule document was created. UTC Time must be used (for example 2016-08-22T10:49:48Z).
- k) **Schedule time interval:** start and end of a day for which the daily schedule document is being submitted.

It is necessary to take into consideration the practice of advancing clocks (image 6.1.1.).



Image 5.3.1: Schedule time interval

6.2. SCHEDULE TIME SERIES

- a) **Senders time series identification:** BRP may freely choose a marking method.
- b) **Senders time series version:** Time series version is marked with numbers starting with number 1, each new version of time series must be marked with higher number according to the ESS standard.
- c) **Business type:** approved types are given in Table 6.2.1. in the daily schedule.
- d) **Product:** since the daily schedule contains time series with hourly/15-minute values of power, it is obligatory to use the active power code ("8716867000016").
- e) **Object aggregation:** Values given in Table 6.2.1. must be used.

Table 5.3.1:

Business type	Object aggregation	Description
A01	A02	The generation unit's plan of generation in the control area
A02	A03	Sale within the control area
A02	A02	Sale for covering compensations within the control area
A15	A03	Sale for covering losses within the control area
A03	A04	Cross-border sale
A04	A03	Forecasted consumption in the control area
A04	A02	Forecasted consumption of a defined consumption undertaking

- f) **Metering point identification:** there should be used EIC code at the metering point if value A02 is used for *Object aggregation*.
- g) **In/Out area - coding scheme:** A01 must be entered, which means that only EIC codes of control areas are allowed for identification.
- h) **In/Out party - coding scheme:** A01 must be entered, which means that only EIC code is allowed for partner identification in a transaction.

i) Capacity contract type: There must be entered the type of cross-border transmission capacity which is being used (annual – A04, monthly-A03, daily-A01, intra-day- A07).

j) Capacity agreement identification: code of awarded cross-border transmission capacity.

k) Measurement unit: All values in time series in the daily schedule must be expressed in MW, it is possible to use only “MAW”.

6.3. PERIOD

a) Period/time interval: It is obligatory to enter interval for each time series within the daily schedule and it must correspond to the time interval of the daily schedule.

b) Period/resolution: Time series may contain 15-minute i.e., hourly values, and ‘PT15M’ i.e. ‘PT60M’ can be used.

6.4. INTERVAL

a) **Interval/pos:** positions of 15-minute/hourly values are entered in chronological order. With 15-minute resolution there must be entered values for all positions from 1 to 96 (from 1 to 92 for the transition between Daylight Saving Time to Standard Time, and from 1 to 100 for the transition between Standard Time to Daylight Saving Time) i.e. it is obligatory to list values for positions from 1 to 24 for hourly resolution (from 1 to 23 for the transition between Daylight Saving Time to Standard Time, and from 1 to 25 for the transition between Standard Time to Daylight Saving Time).

b) Interval/qty: values for relevant positions are entered here. It is allowed to use only integer values with maximum three decimals, and a point is used as a separator.