Intraday Auctions (IDA) - summary

OTE, a.s.

- This document summarizes information on Intraday Auctions with electricity and is divided into the following chapters:

1. **Inclusion of IDA in Short-term Electricity Markets**
2. **IDA Solution Concept**
   - 2.1 Legislation
   - 2.2 Description of the Process
   - 2.3. Impact on the Continuous Intraday Market (IM)
   - 2.4 Non-standard IDA Process
   - 2.5 Technical Solution at the Central Level
3. **Orders at IDA**
   - 3.1 Order Granularity
   - 3.2 Orders Submission
   - 3.3 Supported Order Types
4. **IDA Documentation**
5. **IDA Settlement**
6. **Conclusion**
7. **List of abbreviations**

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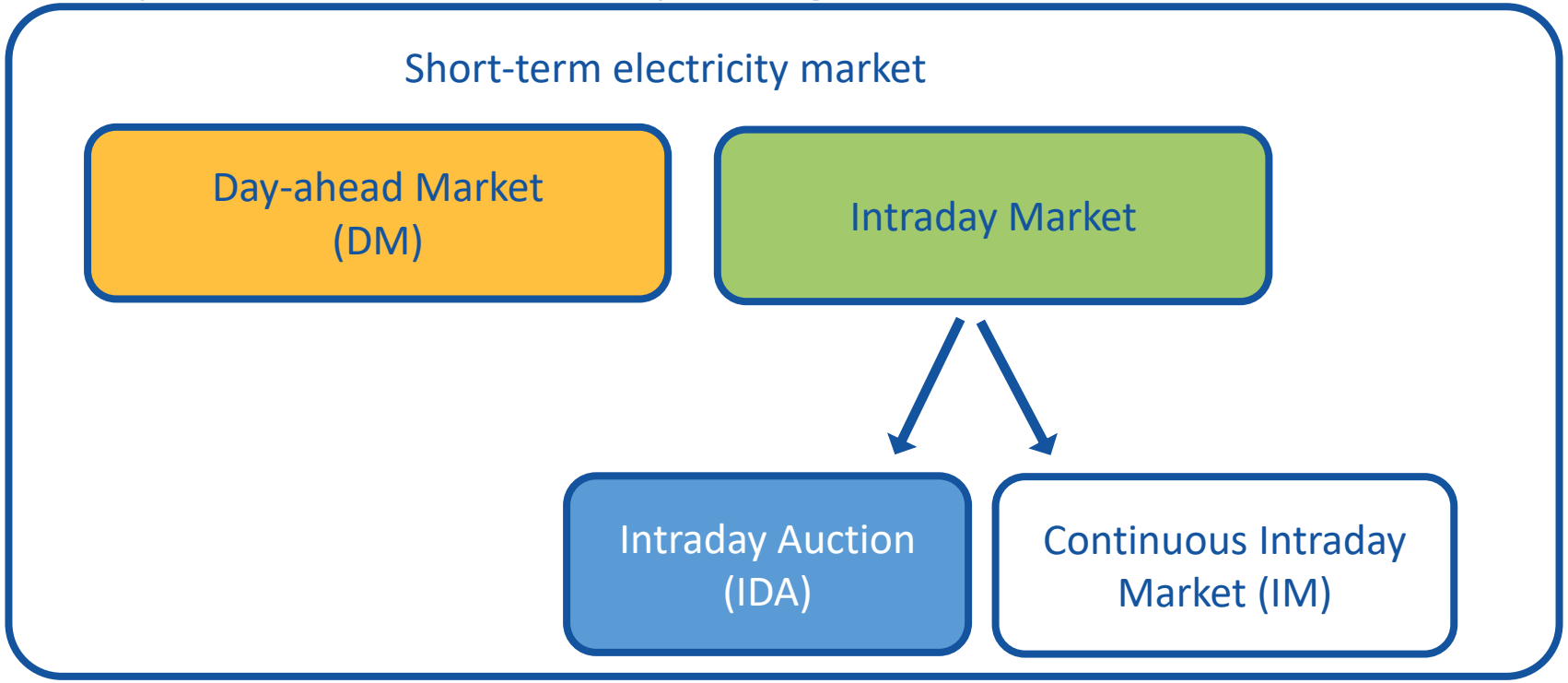
- Short-term electricity markets organized by OTE include Day-ahead Market (DM) and Intra-Day Market
  - **The intraday market is organized as Continuous Intraday Market (IM) and also through Intraday Auction (IDA).** Thus, IDA complement the Continuous Intraday Market and expand the possibilities of the intraday trading.



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- IDAs have been implemented since June 14, 2024 within the framework of the EU single electricity market on the basis of Decision No. 01/2019 on establishing a single *Methodology for Pricing Intraday Cross-Zonal Capacity* by the Agency for the Cooperation of Energy Regulators (ACER)

- **IDA = an implicit Intraday Auction** held within a single intraday European electricity market (SIDC) for the purpose of allocating available intraday cross-border capacity through a market coupling mechanism between individual bidding zones (i.e. the electricity is traded together with the cross-border capacity in the form of an auction)

- The purpose of introducing the IDAs is to **harmonize the calculation and allocation of cross-border capacities** on the intraday market and to **price intraday cross-border capacities** to reflect their shortage at a given time and thereby send an adequate price signal to the market

SIDC countries isupporting IDAs

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- IDAs are organised by Nominated Market Operators (NEMOs) in cooperation with Transmission System Operators (TSOs), in the same way as DM and IM. In the Czech Republic, OTE, a.s., is the the Nominated Market Operator.
  - Parameters and offered products in IDA are determined centrally and largely harmonized in accordance with the European NEMOs

- **3 auctions** are organized **for the respective delivery day (D):**
  - **IDA1 at 15:00 D-1**; traded periods 00 – 24 h of the day D
  - **IDA2 at 22:00 D-1**; traded periods 00 – 24 h of the day D
  - **IDA3 at 10:00 D**; traded periods 12 – 24 h of the day D

- The capacity allocation method is based on NTC mechanism (the capacity allocation based on flow-based mechanism is currently under development and will be implemented at a later stage)

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- IDA is based on similar auction mechanism as DM, but IDA has a shorter course compared to DM:
  1. **Pre-coupling:** The collection and upload of input data for IDA — 20 min
  2. **Coupling**: The process of calculating IDA results up to the moment of their validation
  3. **Post-coupling**: The upload and processing of IDA results and other output data

  — 20 min (in extraordinary situations up to 30 min)

- **Tradable cross-border capacities** for a given IDA are available on the ENTSO-E Transparency Platform 15 minutes before the gate closure time of a given IDA and can be updated up to 5 min prior to the gate closure time of the given IDA. OTE does not publish these capacities.

- The value of the cross-border capacities is determined by transmission system operators taking into account the current situation in the network and the allocations done so far (this topic is outside the responsibility of OTE, you can request more detailed information from the transmission system operator)

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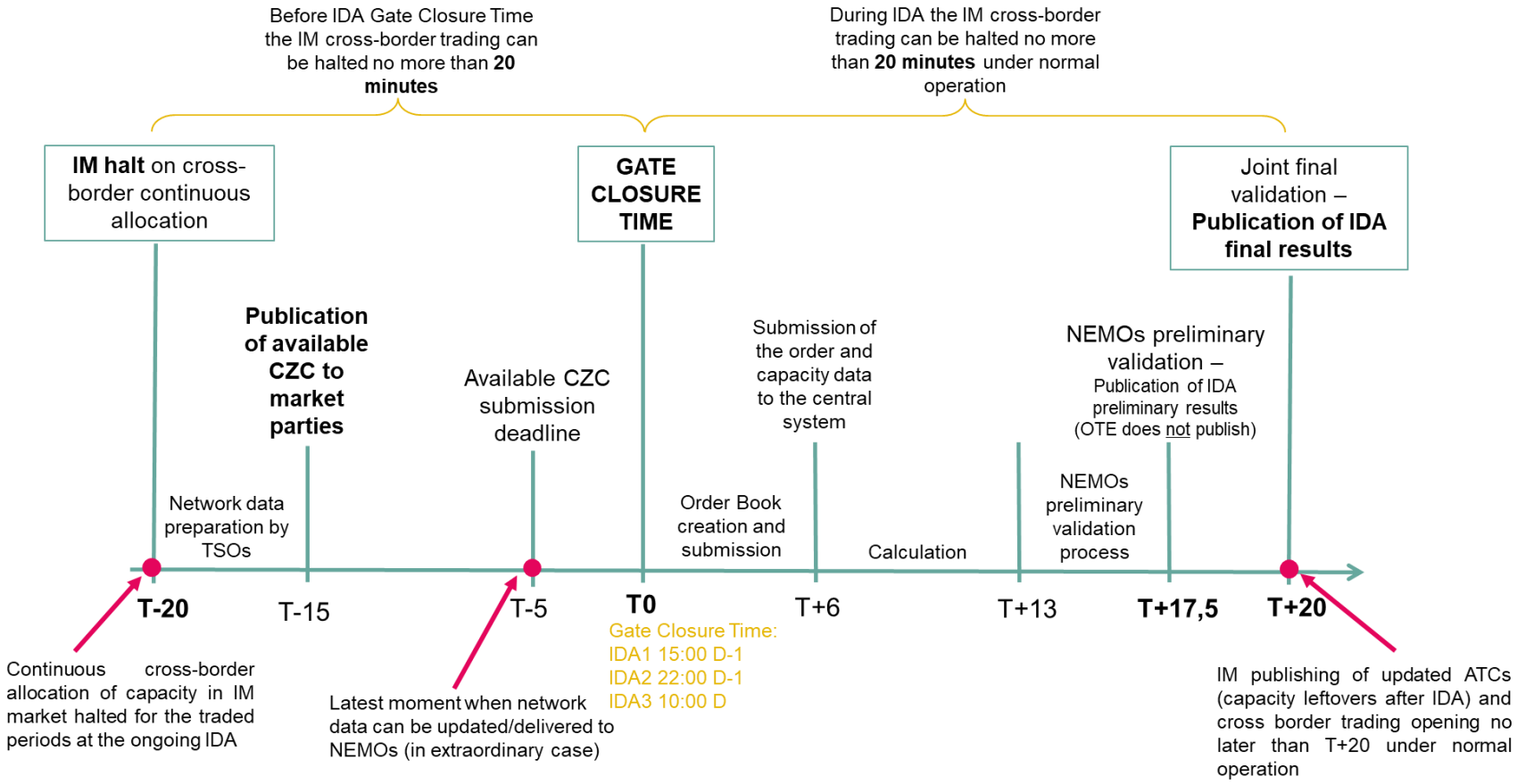
2.2 IDA solution concept – Description of the Process



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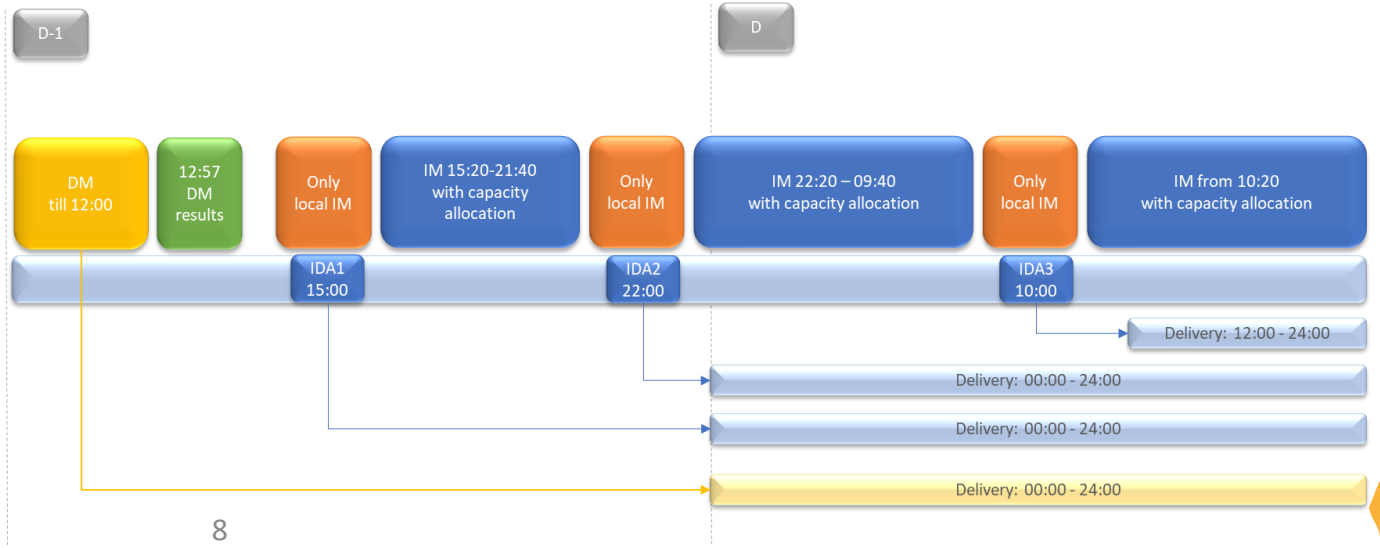
2.3 IDA Solution Concept – Impact on the Continuous Intraday Market (IM)

- During the organization of the ongoing IDA, i.e. for
  - IDA1 during 14:40 – 15:20 (in exceptional situations until 15:30)
  - IDA2 during 21:40 – 22:20 (in exceptional situations until 22:30)
  - IDA3 during 21:40 – 22:20 (in exceptional situations until 22:30),

the **possibility** of cross-border continuous trading on IM is suspended for all traded periods of the day of delivery at the ongoing IDA*, these periods can be traded only within the Czech Republic. Periods not traded at the ongoing IDA can be traded without change (including cross-border trading) even during the organization of the ongoing IDA.



** *i.e. at the beginning of the organization of a given IDA, the allocation of cross-border capacities within SIDC is suspended for all periods of the day of delivery traded at the given IDA. After the end of the given IDA, the cross-border capacities within SIDC are updated and the allocation is resumed again.*

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- Non-standard IDA process
  - If IDA is not completed within 30 minutes after the gate closure time (i.e. by 15:30, resp. 22:30, resp. 10:30), the given IDA is cancelled. **Full decoupling of markets is not supported within IDA** (i.e. there is no local auction in the case of decoupling).
  - **Partial decoupling** can occur in two different situations:
    - → Partial decoupling of markets due to a pre-announced non-participation of a NEMO, where the NEMO is excluded from the IDA process in advance and coupling takes place among all remaining participating NEMOs.
    - → Partial decoupling of markets, which occurs unexpectedly during the IDA process in the case that some NEMO experience some unexpected problems that prevent the successful completion of the IDA process. This case is configured within IDA in such a way that OTE (as well as most other NEMOs) is automatically decoupled.
  - In the event that the day-ahead market results are not available by 2:10 pm, IDA1 is cancelled, and all efforts are devoted to completing the DM process.

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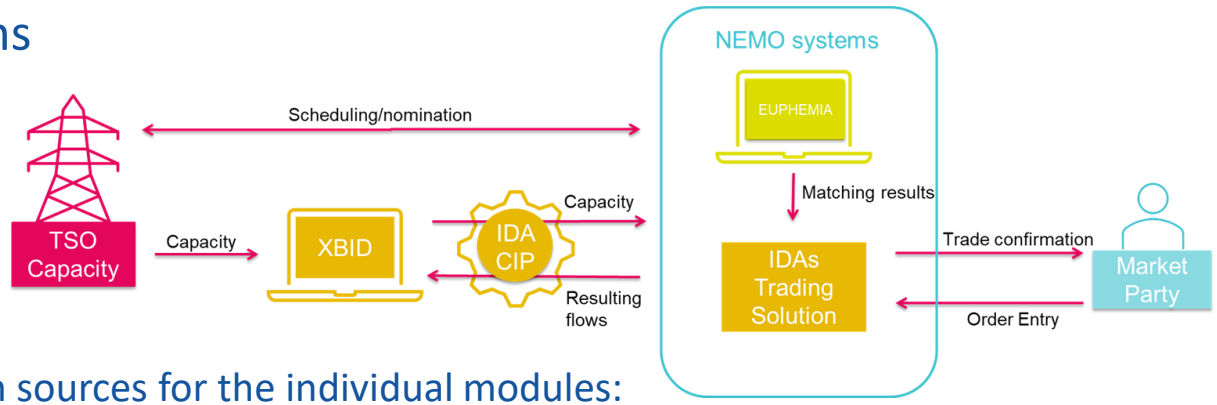
2.5 IDA Solution Concept – Technical Solution at the Central Level

- IDA's technical solution from the perspective of the central SIDC project:
  - Current data from the central SIDC system (XBID) are used as a source of capacity data for IDA in the pre-coupling phase. XBID is also used to validate the results with regard to the available transmission capacities.
  - Market participants submit orders and receive results through local NEMO systems
  - The EUPHEMIA algorithm is used for IDAs matching (as for the day-ahead market), while the capacity and order data are provided to the algorithm through individual NEMOs
  - IDA CIP is an interface used for data exchange between the central SIDC system and local NEMO systems



- Additional information sources for the individual modules:
  - Information on the EUPHEMIA algorithm, including a link to the public description of the algorithm, is available here
  - A description of XBID is available here

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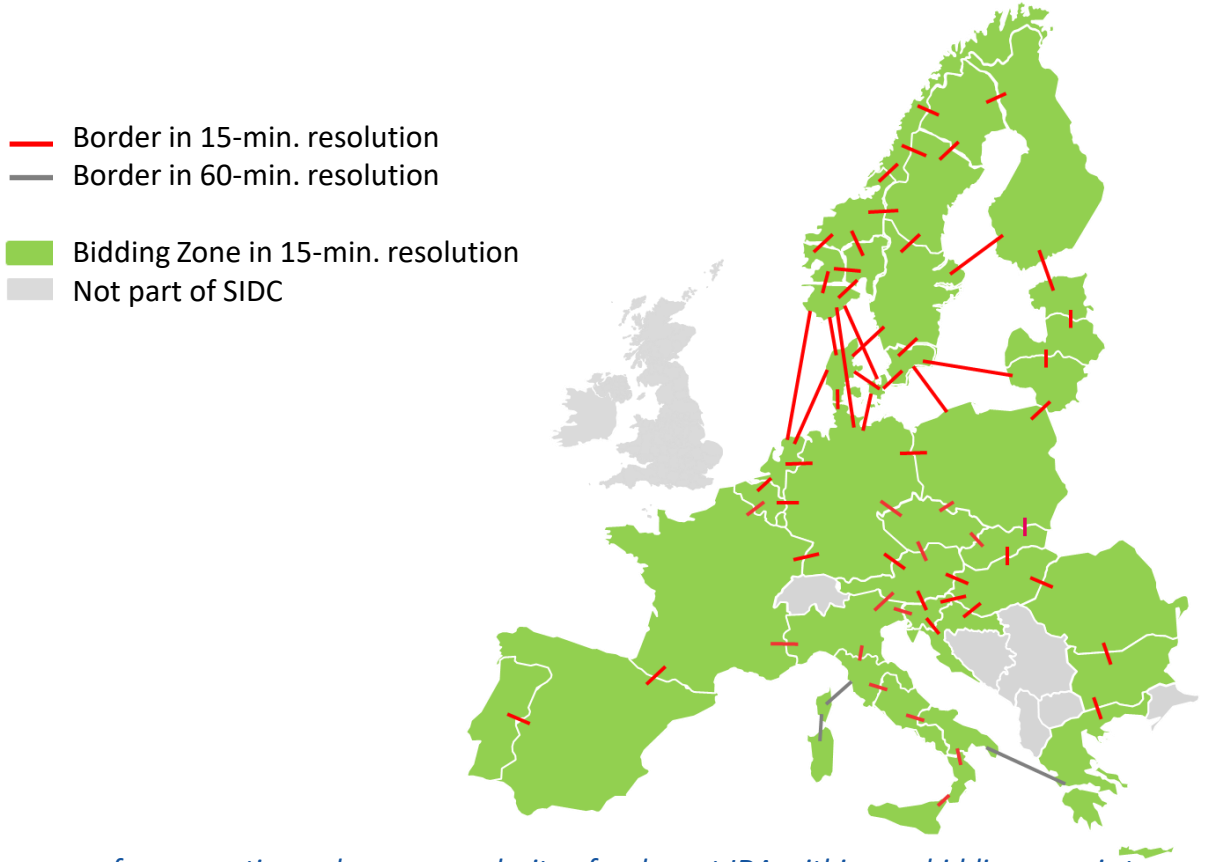
- In the Czech Republic, only 15-minute products are traded on IDA
- Resolution of other bidding zones and relevant borders within SIDC:



Note:
- The GR (Greece) bidding zone will only support 60-minute resolution orders until the introduction of 15-minute products on DT
- The borders IT-GR and & IT-SARD-IT CODC will continue to be in 60min resolution due to limitations of the relevant HVDC cables

Note: The reason for supporting only one granularity of orders at IDA within one bidding zone is to ensure sufficient performance of IDA – with regards to the need to have the shortest possible period of suspension of continuous cross-border trading on IM, it is desirable that the calculation time of IDA results is also as short as possible (the decision to support only one granularity within one bidding zone was thus the only way to achieve the sufficient performance of IDA, while meeting all other conditions and requirements)

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- **The opening for submitting orders** at the individual IDAs always occurs one hour after the gate closure time of the previous IDA:
  - for **IDA1** the opening for submitting orders at **11:00 D-1**
    (traded periods 00 – 24 h on D, the closure of IDA1 at 15:00 D-1)
  - for **IDA2** the opening for submitting orders at **16:00 D-1**
    (traded periods 00 – 24 h on D, the closure of IDA2 at 22:00 D-1)
  - for **IDA3** the opening for submitting orders at **23:00 D-1**
    (traded periods 12 – 24 h on D, the closure of IDA3 at 10:00 D)

thus, there will be no parallel submission of orders at multiple IDAs

- Derivative orders are not supported
- It is not possible to submit orders via PXE (not even spot)

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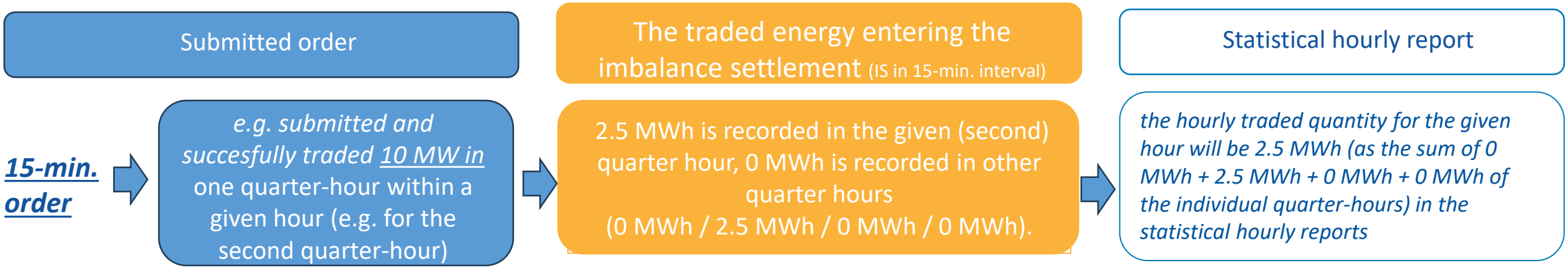
- Orders are submitted in MW for the given 15-minute trading interval
  - The minimum quantity is 0.1 MW; the maximum quantity is 2 999 MW; quantity step: 0.1 MW
  - A summary of other parameters of the orders is available at Parameters of short-term markets



Note: The submission (and successful trading) of four 15-min. orders for 10 MW per each quarter hour of the given hour (i.e., one 15-min. order for 10 MW per each quarter hour), means the traded energy of 2.5 MWh for each quarter-hour of the given hour i.e., a total of 10 MWh in the given hour (as the sum of 2.5 MWh + 2.5 MWh + 2.5 MWh + 2.5 MWh of the individual quarter-hours)

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- **Types of orders** supported for IDAs:
  - Standard order (divisible by volume)
    - Max. number of segments:
      - when entering manually in CS OTE, max. 5 segments
      - when importing XML into CS OTE, max. 25 segments
      - within the AC sending XML with max. 25 segments
    - Within AC and during XML import, multiple orders can be entered at once
  - Profile block order
    - Divisibility of the order - for the profile block order, it is possible to indicate the required minimum level of the matched quantity in each period of the block order in percentages, the range of the allowed values is between 10 - 100%
  - Exlusive group of profile block orders
  - Linked profile block orders
- Detailed specifications for Exclusive Group of Profile Block Orders and Linked Profile Block Orders can be found on the Short Term Market Parameters page

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- **Trading at IDA is possible through the OTE web portal a automatic communication AC (API)**
  - It is the same framework as it is used for DM
  - The user interface is fully processed by the browser, where the entire web application runs as a client program in the browser
  - Uploading of order is enabled in the web portal through:
    - Manual entry into the form
    - Copy-paste into the form
    - Upload an XML file
- Pro IDA není k dispozici mobilní aplikace
- IDA can be tested in the **testing environment Sandbox** *https://portal.sand.ote-cr.cz/* both through the web portal as well as AC
  - Manual for access to the SANDBOX test environment here
- Up-to-date documentation is available in the Electricity documentation section
  - Manuals and message formats on https://www.ote-cr.cz/en/documentation/xsd-wsdl-ote-public-web-services
    - Documentation on the AC in document *D1.4.4 XML message formats DT, IDA, ZO, FZ, ERD*
    - XML Specification (XSD Templates) in Document *D1.4.2 XML formats Electricity*

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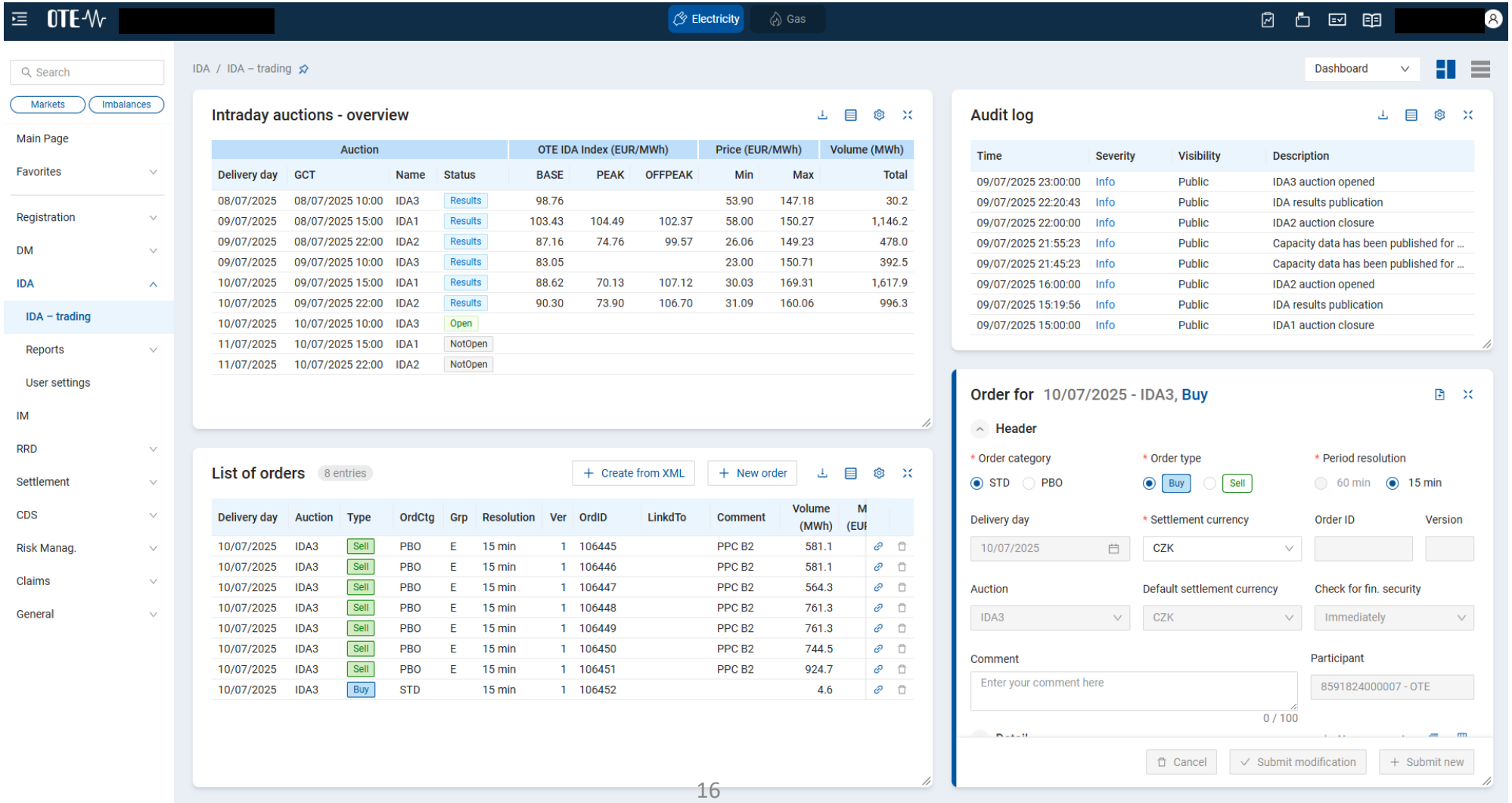
❑ Trading screen



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- Settlement of Intraday Auctions:
  - After the publication of the results of each IDA, financial security funds that secured the submitted orders will be released on the basis of the results, and only the trades created within the resulting prices will be financially secured
  - The settlement of the Intraday auctions will be triggered once a day for all three auctions dedicated to a given delivery day (i.e. for IDA1, IDA2, IDA3 at the same time), which will be usually done by 11 a.m. on the given delivery day
  - Settlement results data will be aggregated at the delivery day level
  - If an IDA is cancelled, its results are not valid or available, therefore are not included in the settlement. The aggregated settlement results will thus contain data for the remaining successfully executed auctions for the given delivery day.
  - The settlement of trades from all three auctions will take place together with the settlement of imbalances and other short-term electricity markets within the netting of the settlement of the daily evaluation.

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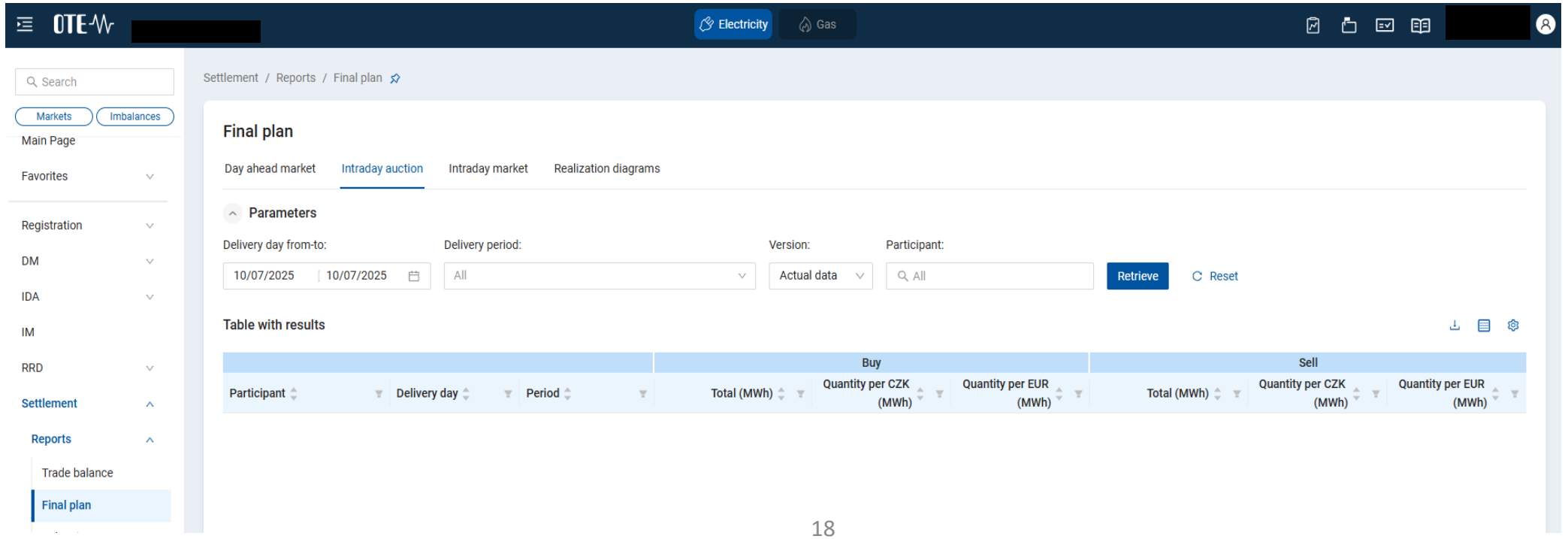
❑ Settlement – report Final Plan

- Aggregated IDA results are displayed in the tab Intraday Auction (delivery day, buy/sell, settlement currency)
- Final Plan states only the final aggregated closed volume trading position (amount in MWh)
- Data are available after the publication of the IDA results (i.e. the aggregated position of MP may change as auctions are processed for the delivery day)
- Trades that have not yet been included in the IDA aggregation process are not visible in the Final Plan



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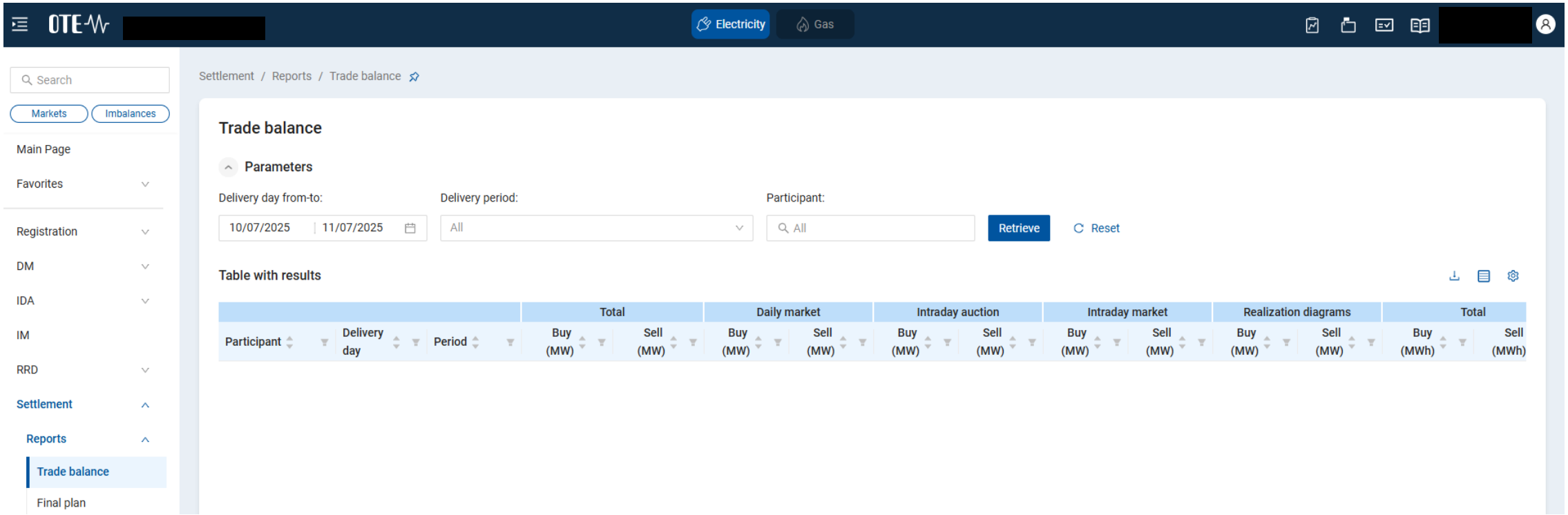
- Settlement - report Trade balance
  - Trade balance report is used to check the current state of the participant's total volume position (amount primarily in MW, in the report also conversion to MWh)
  - In the case of IDA, the report includes the closed part of the trading position, aggregated from the complete available data intended for the calculation of the Final Plan



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- Summary of links to important information:
  - Description of SIDC project
    - https://www.ote-cr.cz/cs/kratkodobe-trhy/propojeni-trhu-2013-vnitrodenni-trh/sidc
  - Parameters for trading at IDA
    - https://www.ote-cr.cz/cs/kratkodobe-trhy/elektrina/parametry-kratkodobych-trhu
  - Documentation for trading at IDA
    - https://www.ote-cr.cz/cs/dokumentace/dokumentace-elektrina/dokumentace-elektrina/dokumentace-elektrina
  - Production environment CS OTE
    - https://portal.ote-cr.cz/
  - Testing environment Sandbox
    - https://portal.sand.ote-cr.cz/

If you have any questions related to the trading at IDA, please send us an e-mail to market@ote-cr.cz

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List of Abbreviations			
AC	Automatic Communication	MP	Market Participant
CS OTE	Central System of OTE	NTC	Net Transfer Capacity
D	Delivery Day	OTE	OTE, a.s.
DM	Day-Ahead Market	NEMO	Nominated Electricity Market Operator
EUPHEMIA	Pan-European Hybrid Electricity Market Integration Algorithm	RMP	Registered market participant
HVDC	High-voltage Direct Current	SIDC	Single Intra-Ahead Coupling)
IDA	Intraday Auction	TSO	Transmission System Operator
IDA CIP	Module as part of the technical solution for SIDC - IDA (IDA Central Interface Point)	XML	Extensible Markup Language
IM	Intraday Continuous Market	XSD	XML Schema Definition
IS	Imbalance Settlement	XBID	Technical solution for SIDC – IM (Cross Border Intraday Coupling)

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Thank you for being part of Intraday Auctions!