

DETAILS OF THE INTRADAY MARKET'S OPERATION

Dirección de Operación del Mercado

Operador del Mercado Ibérico de Energía – Polo Español, S.A.

INDICE.

INDICE.	2
1. INTRODUCTION	3
2. INTRADAY AUCTION MARKETS.	4
2.1 Bidding in the Intraday Auctions Market	4
2.2 Matching processes and results in the intraday auction market.	5
2.3 Sending the matching results to the system operators	6
3. CONTINUOUS INTRADAY MARKET	6
3.1 Presentation of Orders in the Continuous Intraday market	7
3.2 Matching process in the Continuous Intraday Market	8
3.3 Sending the round results to the System Operators	9

1. INTRODUCTION.

After the day-ahead market, agents may once again buy and sell electricity on the intraday market, in the continuous market or at different trading sessions some hours earlier than real time.

Intraday markets are an important tool for market agents to adjust, through the submission of sale and purchase orders of energy, their program resulting from the day-ahead market according to the needs they expect in real time. Intraday markets are currently structured in six auction sessions in the MIBEL area and a continuous European cross-border market.

These implicit intraday auctions of the MIBEL scope constitute one of the most liquid intraday markets in the EU and allow all agents to easily adjust and on equal terms with any other operator their position within the same day of the physical delivery. These intraday auctions usually yield similar prices to those resulting in the day-ahead market and allow buying and selling agents to readjust their schedules (purchase and sale respectively) up to four hours before the real time.

The six intraday auction markets have different programming horizons for each session and manages the price areas of Portugal and Spain, and the free capacity of the interconnections: Spain-Portugal, Spain-Morocco and Spain-Andorra. The resulting schedule from each session of the intraday auction market is the Basic Intraday Program of Incremental Matching (PIBCI). The system operator, based on this program, publishes the resulting program the Final Schedule Program (PHF).

The schedules are the ones established in the Electricity Market Activity Rules. Those that appear in the attached table are the possible schedules limits.

	SESSION 1 ^a	SESSION 2 ^a	SESSION 3 ^a	SESSION 4 ^a	SESSION 5 ^a	SESSION 6 ^a
Auction Opening time	14:00	17:00	21:00	1:00	4:00	9:00
Auction Closing time	15:00	17:50	21:50	1:50	4:50	9:50
Matching Process	15:00	17:50	21:50	1:50	4:50	9:50
Results publication (PIBCA)	15:07	17:57	21:57	1:57	4:57	9:57
TSOs Publication (PHF)	16:20	18:20	22:20	2:20	5:20	10:20
Schedule Horizon (Timing periods included in the horizon)	24 hours (1-24 D+1)	28 hours (21-24 y 1-24 D+1)	24 hours (1-24 D+1)	20 hours (5-24)	17 hours (8-24)	12 hours (13-24)

The continuous intraday market, at European level, allows the negotiation with agents that are in the same or different bidding zones if there is available interzonal capacity. In this market, it can be negotiated up to one hour before the moment of delivery of energy. As of that moment, there are other markets managed by the System Operator in which a balance is assured at all times between production and consumption.

The continuous intraday market, like the intraday auction market, gives market agents the possibility to manage their energy imbalances with two fundamental differences with respect to the auctions:

- In addition to gaining access to market liquidity at the local level, agents can benefit from the liquidity available in markets in other areas of Europe, provided that cross-border transport capacity is available between the zones.
- The adjustment can be made up to one hour before the moment of delivery.

The continuous intraday market is managed by the designated market operators (in the first phase, the operational NEMOs are OMIE, EPEX SPOT and EMCO) responding to the mandate of Regulation (EU) 2015/1222 to create an intraday continuous European cross-border market. The purpose of this market is to facilitate energy trade between different bidding zones of Europe in a continuous manner and increase the overall efficiency of transactions in intraday markets throughout Europe. This market is called, according to the aforementioned Regulation, Single Intraday Coupling (SIDC).

2. INTRADAY AUCTION MARKETS.

2.1 Bidding in the Intraday Auctions Market..

All market agents will be able to submit bids of sale or acquisition of electrical energy in the intraday auctions markets.

Purchase or sale bids of electric power that sellers in the intraday auction market submit to the market operator can be simple or include complex conditions because of their content.

Simple bids are economic bids of sale or acquisition of energy, of 1 to 5 stretches, that the sellers submit for each time period and unit of sale or acquisition of which they are holders. These simple bids express a price and an amount of energy, with the price increasing in each tranche.

Purchase or sale bids that include complex conditions are those that, fulfilling the requirements demanded for the simple bids, incorporate all, some or some of the following complex conditions:

- **Load gradient.**
- **Minimum income, Maximum payments.**
- **Full acceptance in the matching of the first stretch of the sale bid.**
- **Full acceptance in each hour in the matching of the first stretch of the sale bid.**
- **Condition of minimum number of consecutive hours of full acceptance of the first stretch of the sale bid.**
- **Maximum energy.**

The conditions of load gradient and minimum income are the same as those described in the day-ahead market. The condition of maximum payments is equivalent to the minimum income applied to energy purchases, which will not be matched if the cost is higher than a fixed value, plus one variable per matched kWh.

The condition of full acceptance in the matching of the first tranche of the bid of sale or acquisition allows the sales bid to set a profile for all the hours of the intraday market, which can only be matched in the case of being in the market. first section of all hours. This allows to adjust the programs of the production or acquisition units to a new profile, or if it is not possible in one

part, to leave the previous program without modifying some of the hours individually. This option is used when the programming of a few hours is only possible if it is also possible in others, such as to advance the start or stop process, avoid boiler bottling, etc.

The condition of complete acceptance in each hour in the matching of the first section of the bid of sale or acquisition, implies that only the first instalment will be programmed, in case of being matched in its entirety, with all the sections being removed. of that hour, and the bid made for the rest of the hours not being withdrawn. This option is useful for programming groups that produce (technical minimum) or consume (pump consumption), a minimum value or nothing. It can also be equally useful for consumers to express a similar situation.

The condition of the minimum number of consecutive hours with full acceptance of the first tranche of the bid could be applied when the production or acquisition unit must produce or stop consuming consecutively at least a number of hours. The same condition would apply to a consumer who, for example, cannot start a factory for a number of hours lower than the one specified in the bid.

The maximum energy condition allows supply or acquisition units that have a limitation on the availability of energy, bid at all hours but limiting the matched value to an overall energy maximum. This condition is necessary due to the volatility of the prices of the intraday market between hours, which does not allow knowing the hours in which the production or acquisition units can match, and yet there is a limit to the energy that can be sold, such as the case of pumping generation units.

The sale offers for each intraday market session must respect the unit limitations corresponding to the offer unit made available to the market operator by the system operators at the beginning of the session.

2.2 Matching processes and results in the intraday auction market.

The market operator will make the matching of the purchase and sale bids of electric energy, by means of the simple or complex matching method, according to simple bids or those that incorporate complex conditions.

The simple matching method is that which independently obtains the marginal price, as well as the volume of electric energy that is accepted for each purchase and sale offer, for each programming period.

The complex matching method obtains the matching result from the simple matching method, to which the load gradient condition is added, obtaining the simple conditioned matching. Through an iterative process, several conditioned simple matchings are executed until all the matched

sales and acquisition units meet the declared complex conditions, this solution being the first provisional final solution.

Through an iterative process, we obtain the first definitive final solution that respects the maximum capacity of international interconnection with the electrical systems external to the Iberian Market.

In case of internal congestion in the Iberian Market (congestion in the interconnection between the Spanish and Portuguese electricity systems), the previously described process is repeated,

making a market splitting that obtains a price in each zone of the Iberian Market, without congestion internal between both electrical systems.

Both, in the simple and in the complex matching methods, it will be ensured that any bid that does not comply with the limitations imposed by the operators of the security system is not matched, or that unable to meet said limitations the matched bids allow to approach their fulfilment.

The price in each programming period will be equal to the price of the cut-off point of the sales and purchase curves.

2.3 Sending the matching results to the system operators.

At the end of each one of the sessions of intraday auction markets, the Market Operator will publish the resulting incremental results of each supply unit (PIBCI), which will be sent to the System Operators so that they can update and send to the Market Operator the final programme schedule (PHF) that will take into account the results of the PDVD, plus the operations carried out in the previous intraday auction markets and in the continuous market. With these results, the system operators update the European Continuous Trading Platform with the new capacity values of the Spanish-Portuguese interconnection for the periods negotiated in the auction, which are necessary to enable the trading in the continuous intraday market.

3. CONTINUOUS INTRADAY MARKET.

Commission Regulation 2015/1222 of July 24, 2015 establishing a guideline on capacity allocation and congestion management has established an objective model for intraday markets based on the continuous negotiation of energy in the market that the capacity of the interconnection between zones is assigned implicitly.

A group of European market operators, including OMIE, launched a project to implement the new continuous intraday market. The purpose of this project (known as XBID) is to allow intraday trading of electricity between different areas of Europe in a continuous manner and increase the overall efficiency of transactions in intraday markets across Europe. The developed solution in the context of this project will allow the creation of an integrated intraday European market.

With this continuous intraday market, the possibility that market agents can manage their energy imbalances is significantly improved as they can benefit not only from the liquidity of the market at national level, but also the liquidity available in the markets of other bidding zones.

The solution of a single continuous European intraday market is based on a common computer system that is the backbone of the European solution, to which the local intraday markets operated by market operators are linked, as well as the availability of full commercial capacity of cross-border interconnections provided by system operators.

The purchase and sale bids of energy introduced by market participants in a country may be matched by the orders submitted in a similar manner by the market participants in any other country that is connected to the central computer system, provided that there is capacity to cross-border transport available between the zones.

The solution of the European intraday continuous market is compatible with the maintenance of regional intraday auctions (as is the case of the intra-day auctions of MIBEL scope managed by OMIE), where this is decided by the national regulatory authorities.

In the future, it will also be compatible with the implicit intra-day auctions of a pan-European scope that will be implemented in application of ACER Decision No. 01/2019 establishing a single methodology for pricing intraday cross-zonal capacity.

3.1 Presentation of Orders in the Continuous Intraday market.

In order to offer to the MIC, the orders are sent through the OMIE Trading Platform (LTS - Local Trading Solution). In it, all the orders available that are in the Order Book that have not been matched due to the competitiveness of their prices will appear. The orders may be from the same area or from a different European area, depending on the capacities of the interconnections that will be updated by the System Operators. Each bid presented will be defined for a specific contract and expressing a quantity and a price, and may be presented with bid units or portfolio units.

The negotiation of one or several contracts of the Continuous Intraday Market will be carried out in different periods called "Rounds". These Rounds will have an opening moment that will be the moment in which the immediately previous round is closed and a closure that will be associated with the closing of the negotiation of a contract on the European Continuous Trading Platform. The offers may be sent to different contracts, which are the products applied at a specific start and end time, which are opened to negotiation at any given time.

These orders must pass some system validations. In the event that an order does not meet the acceptance conditions, it will be rejected. In addition, the economic value of the order may not exceed the guarantees (operating limit) deposited by the agent in OMIE and if it were shared, all owner agents must have a sufficient operating limit to support the percentage of the order owned by them. The quantity and price of the order must be within the limits established by OMIE and will be stipulated in the Market Rules.

To validate the sent order, OMIE will validate the Unavailability and the Limitations sent by the System Operators. In other words, when submitting an order, it will be validated that the sum of the energy offered, plus the previous program (PHFC / PHF / PDVP), plus the transactions made during the current round, plus the orders stored in the Order Book, It must be below the maximum and above the minimum, which will be stipulated as the declared powers and prices and the limits and availability declared by the System Operators.

When submitting orders to the MIC, execution conditions may apply, which are the following:

- **NONE (NON)**
- **IMMEDIATE OR CANCEL (IOC)**
- **FILL OR KILL (FoK)**
- **ICEBERG**
- **ICEBERG WITH PRICE INCREASE**

The **NONE (NON)** execution condition expresses the quantity of product to buy or sell, as well as the requested price. The order can be mathed immediately or partially. The not matched quantity will remain in the Order Book at the price included in the order. Orders will only be valid for the

contract to which they refer, being cancelled in case it does not match at the closing of the contract.

The **IMMEDIATE OR CANCEL (IOC)** execution condition includes the quantity of product to purchase or sell in a certain contract, as well as the requested price. They will be matched with the most competitive orders existing in the Order Book, in case the prices are acceptable. The price of the transaction will be the price of the matched order(s) of the Order Book (pre-existing). They may partially be matched, although the not matched amount will be eliminated and will not remain in the Order Book. They cannot be modified or canceled by the agent.

The **FILL OR KILL (FOK)** execution condition includes the quantity of product to purchase or sell in a certain contract, as well as the requested price. They will match the most competitive orders in the opposite direction existing in the Order Book, if they have acceptable prices. They cannot be partially matched, if they are not entirely matched, the order will be completely eliminated. They are executed at the time of their introduction, they do not remain in the Order Book.

When inserting an **ICEBERG** order, the total quantity of the product to purchase or sell in a given Contract is entered, the reduced part of that quantity that is to be shown in the Order Book, as well as the requested price. In the Order Book, only a reduced part of the total quantity and the requested price will be shown to other market agents. The Agent who entered the order may additionally see the total amount of the order.

ICEBERG WITH PRICE INCREASE in which Iceberg orders can be entered with an additional parameter, called price incremental. If introduced, each new instantiation will have a new price, which will be calculated as the price of the previous instantiation plus the incremental price. Purchase Iceberg orders can only be entered with a negative price incremental, while sale orders can only be entered with a positive price incremental.

In addition, also when submitting orders to the MIC, orders validity conditions may apply:

- **GOOD-FOR-SESSION (GFS)** Orders marked with this restriction will be valid until the closing of the negotiation of the Contract to which they were presented. By default, all offers will have this restriction selected.
- **GOOD-TILL-DATE (GTD)** The presented order will be valid until a certain time established by the agent during the creation of the order, this moment will always be prior to the closing of the negotiation of the Contract to which it was presented.

In addition, Agents may create a basket of various orders (basket orders) that may be associated with different Contracts. Sending the basket will involve the simultaneous processing of all the orders included in the basket. Orders included in the basket may or may not be matched (and go to the Order Book if applicable), independently of each other, depending on the conditions indicated by the market agent to the basket itself. Each of the sale or purchase offers included in the basket, may also specify conditions for execution and/or validity for the order.

3.2 Matching process in the Continuous Intraday Market

Sale and purchase orders will be sent through the LTS (Local Trading Solution) of each Market Operator. When a Market Agent sends an order and is correctly validated by OMIE, it is sent to XBID where it will be stored in the Order Book, it will be discarded and/or the matching will be carried out (trade). This matching will be carried out in accordance with the requirements established for XBID based on the European Regulation 2015/1222 (CACM). In the event of a matching, the result will be communicated to the Agent and the list of local orders will be updated. Transactions in XBID will be firm (CACM), that is, if the order is a purchase order, it will imply an obligation



to purchase the product, if it is a sale order, a delivery obligation, and it implies a payment obligation and the right to collect at the price of the transaction.

3.3 Sending the round results to the System Operators

At the end of each round, OMIE will publish the incremental and accumulated results of each unit and will send them to the System Operators, so that they can carry out and send back to OMIE the Final Continuous Time Programs (PHFC) and update the values of the capacities of the interconnections. From then on, there are other markets managed by the System Operator in which the balance of production and consumption is ensured at all times.