

part of eex group

> epexspot

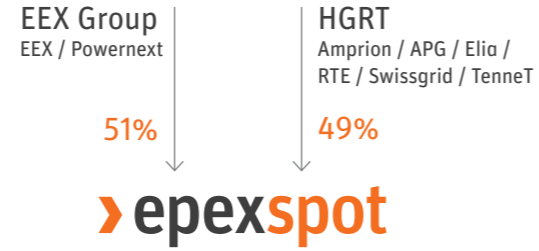
Trading on EPEX SPOT 2018-2019



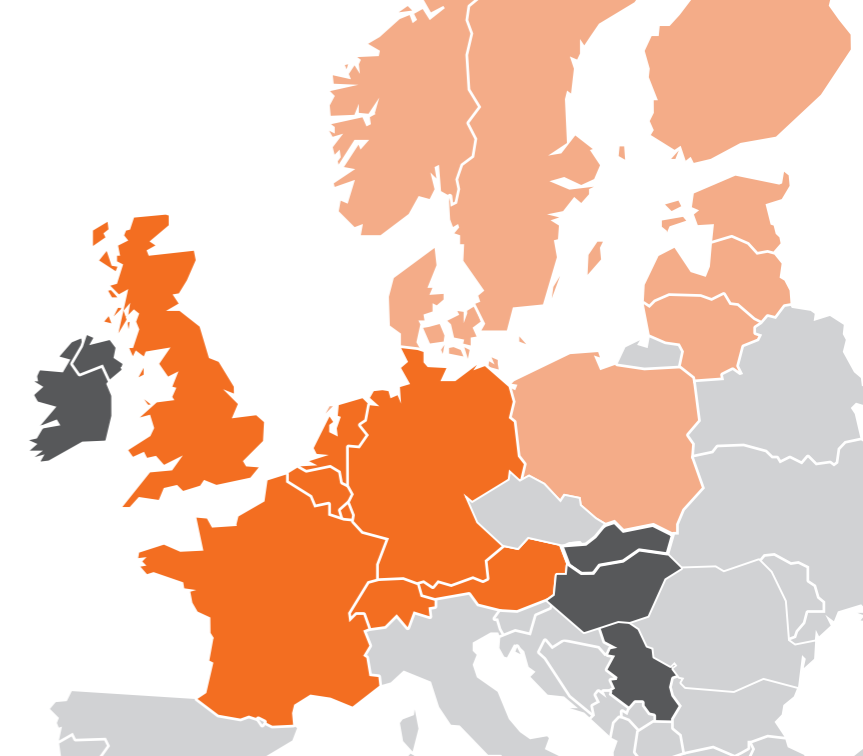
About EPEX SPOT

The European Power Exchange EPEX SPOT SE operates organised short-term electricity markets for Austria, Belgium, France, Germany, Great Britain, Luxembourg, the Netherlands and Switzerland; markets representing 50% of the European electricity consumption. Striving for the well-functioning of the European single market for electricity, we share our expertise with partners across the continent and globally. In addition to this, **EPEX SPOT currently prepares market launches in the Nordic and Baltic regions as well as in Poland.**

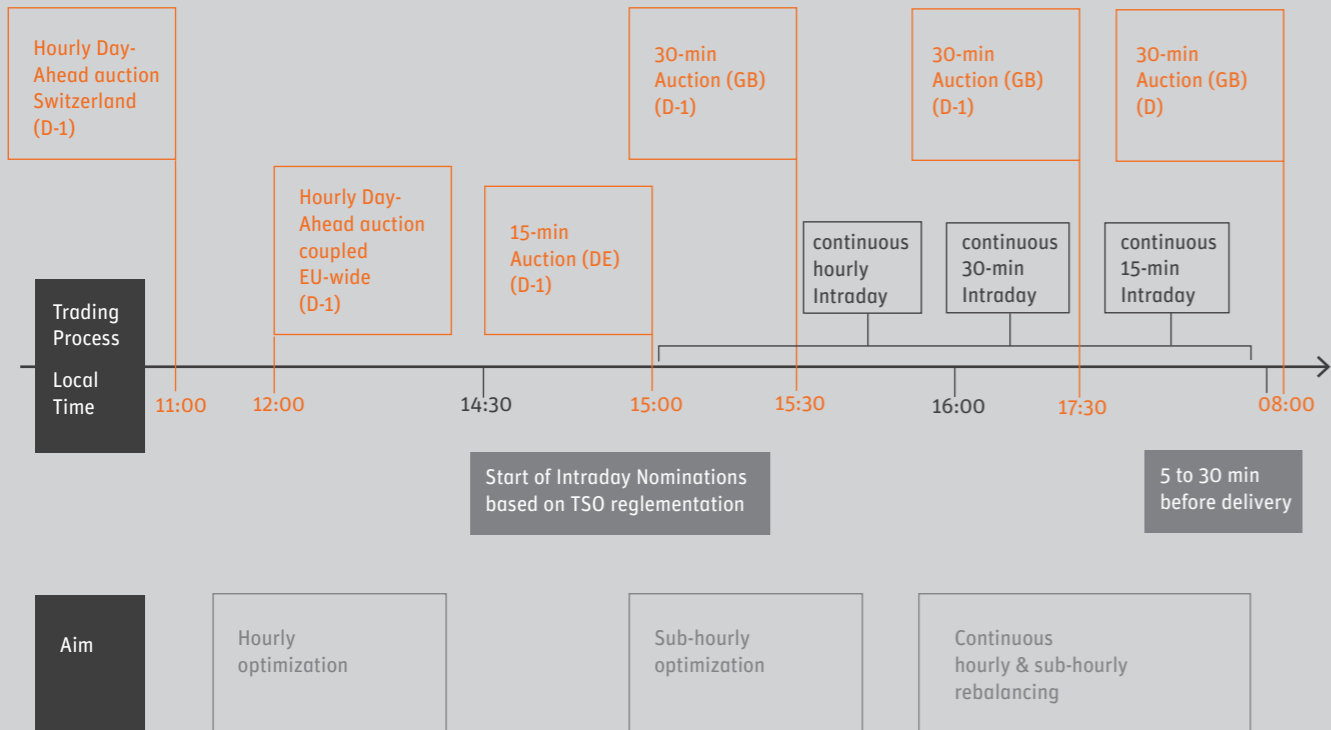
EPEX SPOT is a European company (Societas Europaea) in corporate structure and staff, based in Paris with offices or affiliates in Amsterdam, Bern, Brussels, Leipzig, London and Vienna. 285 companies have traded 535 TWh of electricity on EPEX SPOT in 2017. EPEX SPOT is held by EEX Group, part of Deutsche Börse, and HGRT, a holding of European electricity transmission system operators.



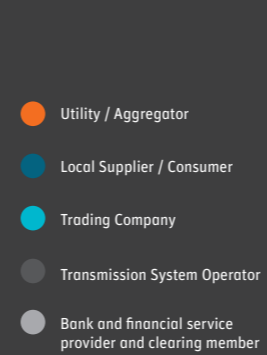
Markets and volumes



The wholesale electricity trading process



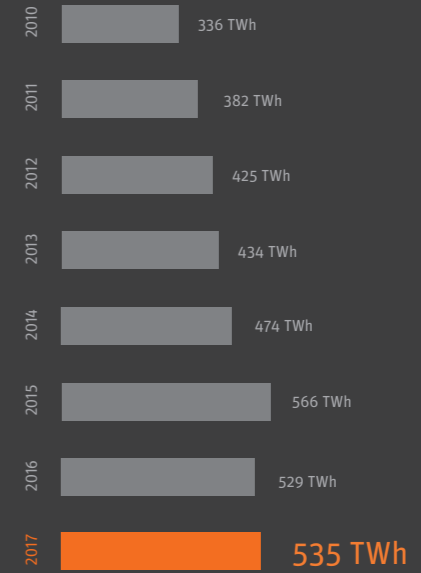
Exchange members



Excellent customer service is the pillar of a growing European spot power market. A trusting relationship between EPEX SPOT and its members, as well as a clear governance and innovative products are the keys to success.

All products and innovations at EPEX are developed in close cooperation with our customers. The Exchange Council represents our trading community and makes sure all products and innovations are discussed and decided upon jointly with the market.

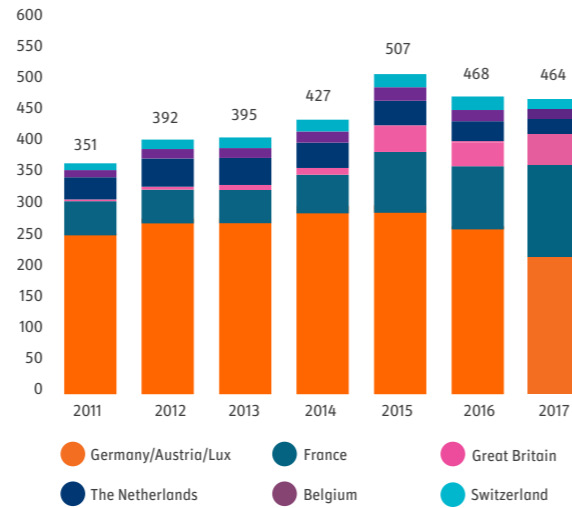
The Market Surveillance Office is an independent exchange body which continuously monitors the EPEX SPOT markets, to secure they are running in a fair and orderly manner.



Day-Ahead markets

EPEX SPOT operates the Day-Ahead power markets of Austria, Belgium, France, Germany, Great Britain, Luxembourg, the Netherlands and Switzerland. This happens through daily auctions. The Day-Ahead price, in particular the German Phelix, has become a European reference thanks to its underlying liquidity. Apart from Switzerland, all markets are part of the Multi-Regional Coupling which stretches across 19 markets from Portugal to Finland and from Ireland to Italy.

Day-Ahead volumes (TWh)



Tradable Contracts

24 hourly contracts are available on the auction, corresponding to the 24 hours of the following day. Hour 1 starts at 24:00 and ends at 1:00, hour 24 starts at 23:00 and ends at 24:00. Contracts can be traded either in single hours or in blocks of combined hours.

Single hours

Orders contain up to 256 price/quantity combinations for each hour of the following day. The 256 prices are not necessarily the same for each hour. A volume – whether positive, negative or nil – must be entered at the price limits. A price-inelastic order is sent by putting the same quantity at the price limits.

Blocks

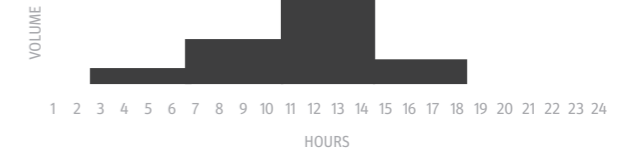
Block Orders encompass several hours at the same price. A block order is executed at the same ratio on all its hours.

Specific conditions:

- Maximum volume per classic block order is 600 MW in DE/LU, AT and FR, 500 MW in GB, 400 MW in NL and BE and 150 MW in CH
- Either buy or sell
- Can be either entirely executed or entirely rejected (All-or-None); or executed above a minimum acceptance ratio defined by traders (**curtailable blocks**)

- Volumes can be different across hours (profiled blocks):

Profiled Blocks:



Smart and big blocks

Smart and big blocks portfolios are classic portfolios with the additional functionality allowing the submission of linked, exclusive and big blocks.

- **Linked blocks** are a set of blocks with a linked execution constraint, meaning the execution of one block depends on the execution of its father block. They allow to represent the variation of electricity generation with regards to the market price.
- **Exclusive blocks** are a group of blocks within which a maximum of one block can be executed, so that electricity is traded at the most profitable moment.
- **Big blocks** are larger than classic blocks and allow to cover large production capacities.
- **Loop blocks** are families of two blocks which are executed or rejected together. They allow to bundle buy and sell blocks to reflect storage activities.

Hourly Day-Ahead Auctions

Trading Procedure

A blind auction takes place once a day, 365 days a year. Results are published as soon as possible from 12:50 for all Day-Ahead coupled markets; as soon as possible from 11:10 for Switzerland. The order book opens 45 days (14 days in GB) in advance and closes one day before delivery at 12:00 for all Day-Ahead coupled markets, at 11:00 for Switzerland.



Clearing and Settlement

EPEX SPOT transmits trade information to the central counterparty, European Commodity Clearing (ECC), for settlement and delivery. ECC nominates to the concerned TSO on behalf of the Exchange Member 4 times per hour until the local nomination deadline.



Minimum and maximum prices

Min: -500 €/MWh
Max: 3000 €/MWh



Delivery Zones

50Hertz, Amprion, APG, Elia, NationalGrid, RTE, Swissgrid, TenneT DE & NL, TransnetBW



Minimum price/volume increment

Price tick: 0.1 €/MWh
Volume tick: 0.1 MW



API (Application Programming Interface)

Order submission and results retrieval are both available through API access, in addition to the client access.

GB Half-hour Day-Ahead 15:30 Auction

The GB half-hour auction at 15:30 offers members an opportunity to trade half hour contracts in a local Day-Ahead auction.

Trading Procedure

An auction takes place once a day, 365 days a year. Results are published as soon as possible from 15:45 (GB local time).



Minimum price /volume increment

Price tick: 0.1 GBP/MWh
Volume tick: 0.1 MW



Minimum and maximum prices

Min: -500 GBP/MWh
Max: 3000 GBP/MWh



API (Application Programming Interface)

Order submission and results retrieval are both available through API access, in addition to the client access.

Intraday markets

Intraday markets are mainly used for:

- Adjusting purchases and sales based on the results of the Day-Ahead auction
- Running and planning power generation closer to delivery
- Managing forecast errors or unforeseen events
- Adjusting from hourly positions to 15 minutes
- Offering flexible generation as a substitution for renewables
- Enabling cross-border arbitrage and trading

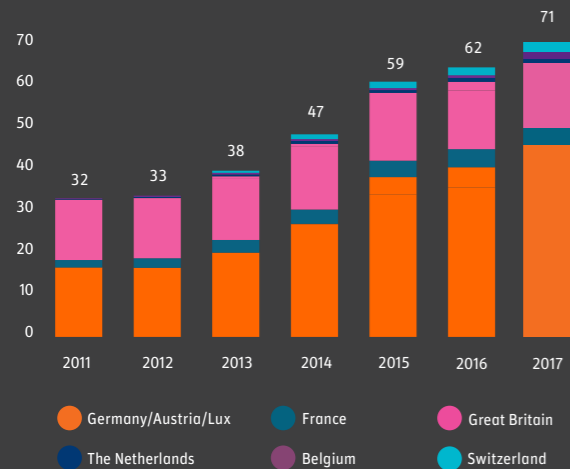
The Intraday market is divided into continuous and auction trading.

All continuous Intraday markets of EPEX SPOT run on the M7 trading system, an industry-standard in terms of performance. These markets are by far the most liquid Intraday markets in Europe.

Since 2014, EPEX SPOT:

- has been running a 15-minute auction on the German market, creating a price signal for 15-minute contracts in Germany; up to 5.2 TWh are traded yearly
- introduced continuous 30-minute contracts in France and 15-minute contracts in Belgium and the Netherlands
- introduced two coupled auctions between GB and the Irish markets

Intraday Volumes (TWh)



DE 15-Min Opening Auction

Trading Procedure

A blind auction takes place once a day, 365 days a year. Results are published as soon as possible from 15:10. All tradable contracts are 15-minute contracts. The order book opens 45 days in advance and closes at 15:00, one day before delivery.



Minimum and maximum prices

Min: -3000 €/MWh
Max: 3000 €/MWh



Minimum price/ volume increment

Price tick: 0.1 €/MWh
Volume tick: 0.1 MW



Delivery Zones

50Hertz, Amprion, TenneT, TransnetBW



Clearing and Settlement

EPEX SPOT transmits trade information to the central counterparty, ECC, for settlement and delivery. ECC nominates to the concerned TSO on behalf of the Exchange Member until the local nomination deadline.



GB Half-hour Intraday 17:30 and 8:00 Coupled Auctions

Trading Procedure

Blind auctions take place twice a day, 365 days a year. All tradable contracts are 30-minute contracts. The order books open 14 days in advance and closes at 17:30 GMT/BST (D-1) and 8:00 GMT/BST (D). Results are published as soon as possible from 08:30 and 18:00.



Minimum and maximum prices

Min: -450 GBP/MWh
Max: 4500 GBP/MWh



Clearing and Settlement

EPEX SPOT transmits trade information to the central counterparty, ECC, for settlement and delivery. ECC nominates to the concerned TSO on behalf of the Exchange Member until the local nomination deadline.



Minimum price /volume increment

Price tick: 0.1 GBP/MWh
Volume tick: 0.1 MW



Continuous Markets

Trading Procedure

- Continuous trading 7 days a week, 24 hours a day, all year around
- hourly contracts for the next day open at 15:00 pm (D-1) for DE, FR, CH, AT, NL & BE
- 30-min contracts for the next day open at 15:30 (D-1) for CH & DE, at 15:00 for FR
- 15-min contracts for the next day open at 4.00 pm (D-1) for DE and CH, at 15:00 for NL & BE
- all contracts for the next day open at 00:00 (GMT/BST) D-1 in GB

24/7

Lead Time

- AT, BE, DE, NL: 5 minutes
- GB: 15 minutes for 30-Minute contracts
- FR: 30 minutes
- CH: 30 minutes
- Cross-border: 60 minutes



The lead time is the time between the end of the trading session and the start of the delivery period.

Minimum price/ volume increment

Price tick: 0.01 €/MWh
Volume tick : 0.1 MW



Clearing and Settlement

ECC nominates to the concerned TSO on behalf of the exchange member every 15 minutes.



Minimum and maximum price

Min: -9999 €/MWh
Max: 9999 €/MWh



Delivery Zones

50Hertz, Amprion, APG, Elia, NationalGrid, RTE, Swissgrid, TenneT DE & NL, TransnetBW



Tradable Contracts

- Block orders
 - pre-defined blocks (baseload, peakload)
 - user-defined blocks linking several consecutive hours

- 1 hour contracts
- 30-minute contracts
- 15-minute contracts

Trade Registration

OTC clearing services allowed for hourly and block orders.



API (Application Programming Interface)

Versatile, performant and standardized API services are available for order submission and results retrieval, in addition to the client access.

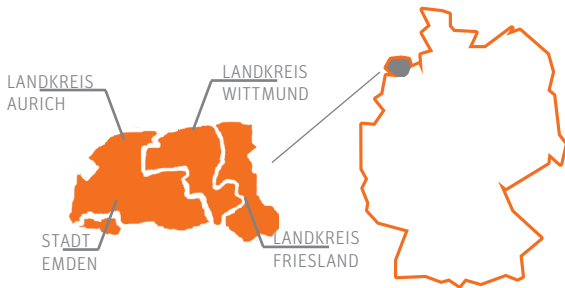
Local flexibility markets

An innovation powered by EPEX SPOT

Determined to foster the efficient integration of renewable energy sources and to enhance the engagement of consumers and producers in power markets, **EPEX SPOT develops local flexibility markets.**

These local flexibility markets are based on a **neutral and transparent market platform**, where local flexibility offers are pooled. **Market participants gain new opportunities to value their flexible assets**, and system operators obtain new tools to efficiently manage congestions and optimize grid planning.

We will launch the first European market-based local flexibility demonstrator in 2019: the @enera project in Germany.



Physical assets operators in Bremen area can be eligible to participate to the @enera project

Interested in joining our next local flexibility markets?

Contact us: localflex@epexspot.com

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Offices: Transformatorweg 90, 1014 AK Amsterdam (The Netherlands); Marktgasse 20, 3011 Bern (Switzerland); Boulevard de l'Impératrice 66, 1000 Brussels (Belgium); Augustusplatz 9, 04109 Leipzig (Germany); 11 Westferry Circus, Canary Wharf, London E14 4HE (United Kingdom); Mayerhofgasse 1/19, 1040 Vienna (Austria)

Customer & Business Solutions: Tel +33 1 73 03 62 62, sales@epexspot.com

EPEX SPOT Market Operations

Auction Hotlines (incl. Intraday 15-minute Call DE)

DE: +49 341 21 56 333 • FR: +33 1 73 03 96 10 • NL: +31 20 305 4042 • GB: +44 207 220 3444

Continuous Intraday Hotlines

DE: +49 341 21 56 234 • FR: +33 1 73 03 77 00 • NL: +31 20 305 5079 • GB: +44 207 220 3444

Fax (only applicable for the Continuous Intraday market), DE: +49 341 21 56 111 • NL: +31 20 305 4002 • GB: +31 20 305 4002

E-Mail: powerspot@epexspot.com

How to become a member

1. Contact us

EPEX SPOT Customer & Business Solutions,
E-mail: sales@epexspot.com, Tel +33 1 73 03 62 62

2. Find a clearing bank or sign a direct clearing agreement with ECC

3. Become a Balance Responsible Party

4. Follow the admission process

Fill in the "Know your customer" questionnaire, submit admission documents to EPEX SPOT and ECC, pass the trader exam

5. EPEX SPOT processes the admission application

6. Admission – you are now able to start trading.

More services : Our Data & API offer

Exchange members and third parties can benefit from a range of additional services:

- e-learning, to better understand the power market and take the trader exam
- market data and indices, as soon as available, to derive crucial market insights
- API solutions, to customize your trading experience

Contact us: marketdata.sales@epexspot.com