EPEX SPOT French organized capacity market

Organized Exchange of capacity guarantees

RTE EPEX SPOT Capacity market workshop, 20/10/2016

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Agenda

1. Introduction

- EPEX SPOT presentation
- Capacity market principles
- Participants
- Bilateral and organized exchanges

2. EPEX SPOT organized capacity market

- Product specification
- Uniform double-sided blind auction
- Offers definition and examples
- Limits and auction process
- Planning of sessions
- Trading system and algorithm
- Capacity market fees
- Membership
- Next steps

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1.Introduction

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The markets of EPEX SPOT

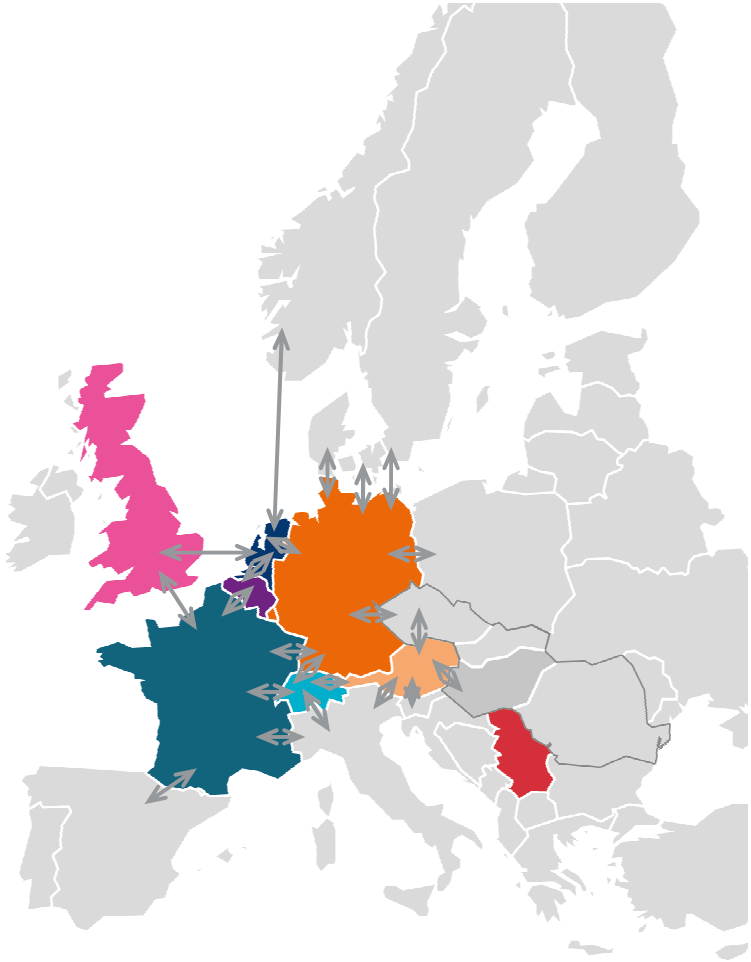
EPEX SPOT'S market areas cover an area of **1,700 TWh** of yearly power consumption, which represents nearly **50%** of the EU's Integrated Electricity Market.

EPEX SPOT markets

- Germany/Austria/Luxemburg
- France
- Great Britain
- The Netherlands
- Belgium
- Switzerland

Servicing other exchanges

- Market operations for Hungarian power exchange HUPX
- Market coupling for Slovakian OKTE, Romanian OPCOM and HUPX
- Market operations for Serbian power exchange SEEPEX (25% stake)



Our markets have 21 borders amongst them and with neighbouring countries.

EPEX SPOT has an **inherent incentive to integrate European power markets.** We support this process by our harmonised cross-border trading systems.

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Capacity Market Principles



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Dec. 2010 Nome Law — Decentralized capacity market

Jan. 2015 Rules — Published in "Arrêté"

Apr. – Oct. 2015 Certification — Guarantees for winter 2017

Sept. – Nov. 2016 members readiness — Member settings and tests

Dec 2016 1st auction capacity market — Auction Guarantee year 2017



Suppliers (+grid losses and big consumers) will have an obligation to buy/emit guarantees to cover equivalent peak consumption of their customers. They are subject to penalties if they do not own, for each delivery year, the right amount of capacity certificates.

Producers have an obligation to make all their plants certified in France. They are granted free guarantees by RTE against a commitment to be available during peak demand hours. If availibility commitment is not reached, they are subject penalty.

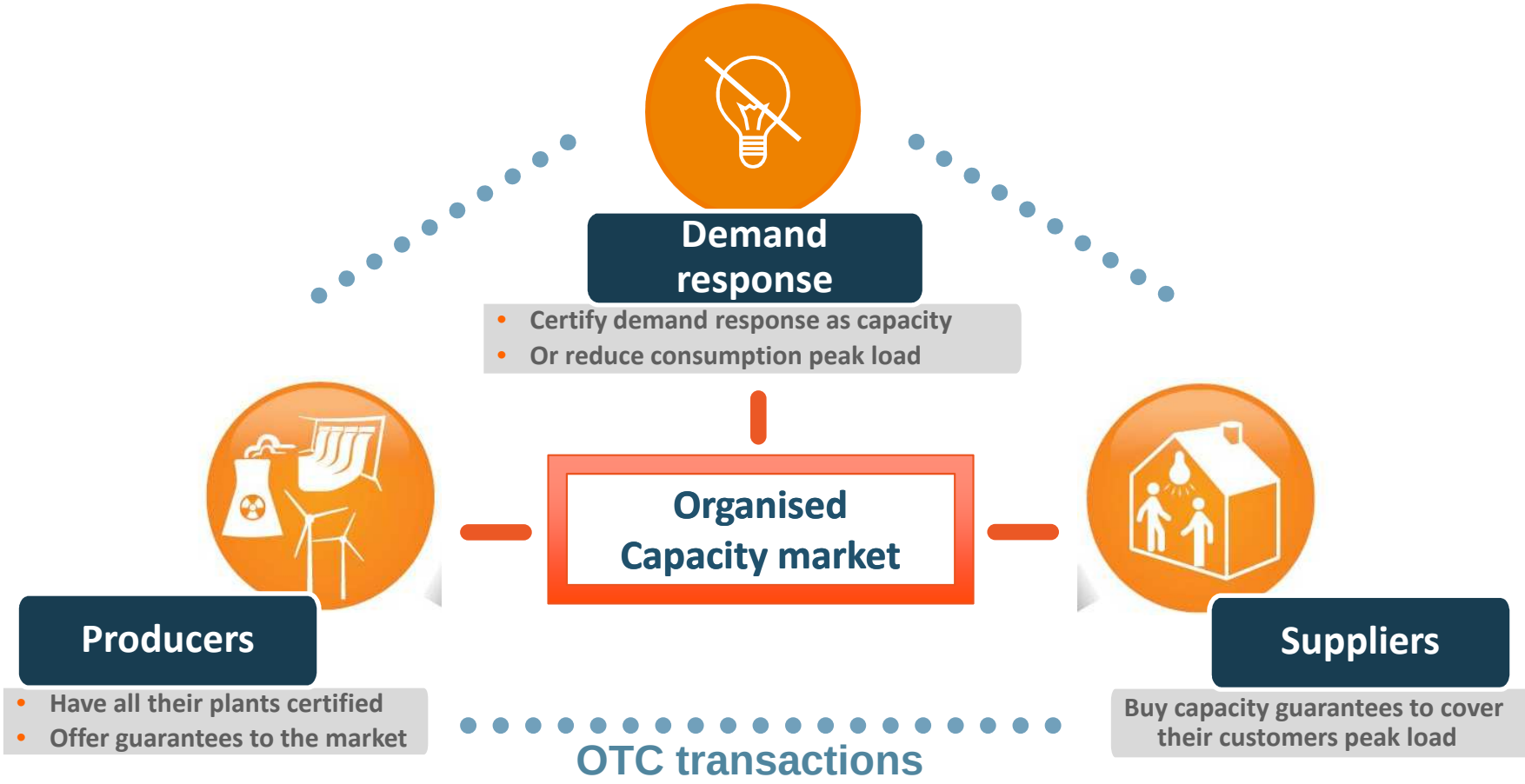
Demand response operators can choose between certification of demand response as capacity, or reduction of consumption as supplier obligation.

Exchange of guarantees are possible since first certification in April 2015.

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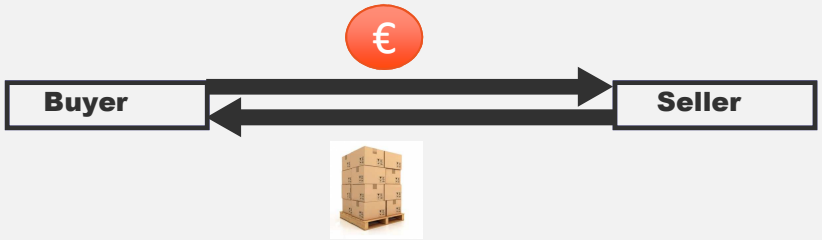
Participants of the capacity market



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Bilateral and organized exchanges

Bilateral



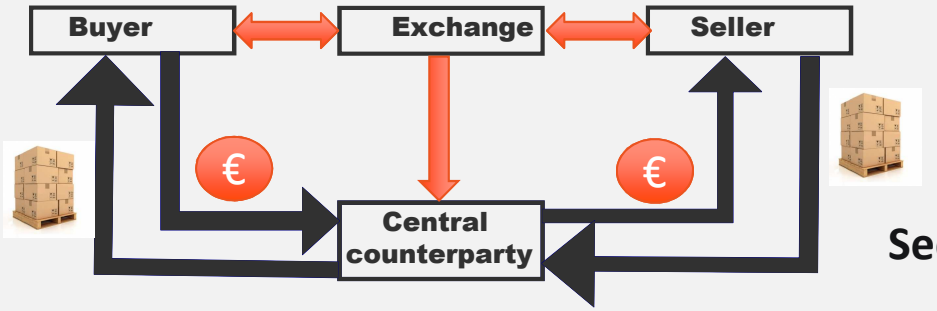




Via telephone or mail

Bilateral exchanges are not public.
Market participants shall take care of delivery and payment by themselves.

Organized Exchange



Electronic platform
Anonymous
Market rules
Surveillance
Transparency of prices
Securization of payment and delivery

Organized exchanges are subject to market rules.
A central counterparty is ensuring the payment and delivery processes.

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EPEX SPOT organized capacity market

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Product specification: Guarantees

Capacity guarantee specification	
Underlying	► Capacity guarantee valid for an underlying year only and recorded in RTE registry. A guarantee represents 0.1 MW of capacity.
Trading procedure	► Auction
Trading days	► Between 1 and 6 auctions / year depending on distance to obligation
Delivery procedure	► Nomination by ECC to RTE registry
Clearing	► Cash and guarantees are deposited on clearing accounts before the auction
Price characteristics	► € per guarantee
Min. Volume Increment	► 1 CG (Capacity guarantee), which represents 0.1 MW of certified capacity
Min and max price	► [min: 0 € - max: 2 000 €] /guarantee 2017

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ECC Details on French Capacity Market

Product Setup & Settlement Details		
Product Group	EPEX_ST_CGFR2017_DMS	► French Capacity Guarantees with delivery year 2017
Financial Settlement	► Standard Process	
Physical Settlement	► Following the auction, nomination will be sent by ECC to RTE ► All non-executed volumes of CGs will be returned	
Margining	► Exposures from transactions in CGs will be included in the Current Exposure Spot Market (CESM) ► Exposures will be netted with exposures from all other spot market transactions providing full cross-margining effects across all cleared spot venues of ECC	
Financial Limits	► ECC requests a financial limit for buying CGs ► Set by the Clearing Member for a single auction day ► All orders are aggregated together and compared to the financial limit ► An order not compliant with the current value of the limit is automatically rejected by the trading system ► If no limit is provided, then all buy orders will be automatically accepted	
Quantity Limits	► Set by ECC ► Consists of the number of CGs which are deposited by a seller in the registry account at ECC before the auction day	

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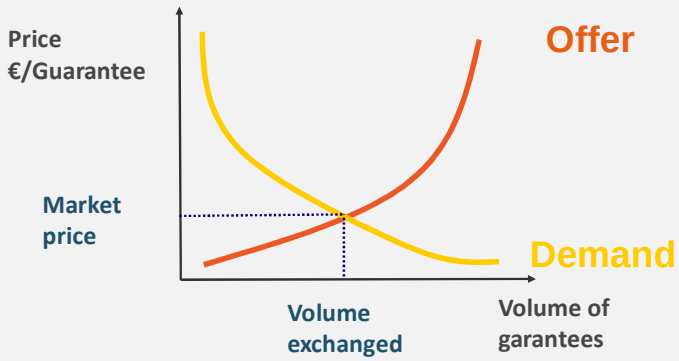
Uniform double sided blind auction
(like Day-ahead auction)

Auction Process:

1. Orders are accumulated in the order book.
2. Once the order book is closed, orders may not be modified or cancelled.
3. Buy orders are aggregated to a demand curve, Sell orders are aggregated to an offer curve.

Avantages of an auction:

- Gather liquidity
- Emergence of a single reference price
- Transparency of exchange volumes
- Optimisation of individual preferences
- Anonymous
- Level playing field for small counterparties
- Securization of payment and delivery



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Order definition

- (Price; Volume) combinations
- Price: in the price range [0; + 2 000 €/Guarantee]
- Volume
  - Positive: you buy
  - Negative: you sell
  - Null: no action

- Minimum 2 (Price; Volume) combinations per order. A volume (positive, negative or null) must be entered at the price limits

- Orders are linear interpolated curves: The members' interest is assumed linear between two price/quantity combinations

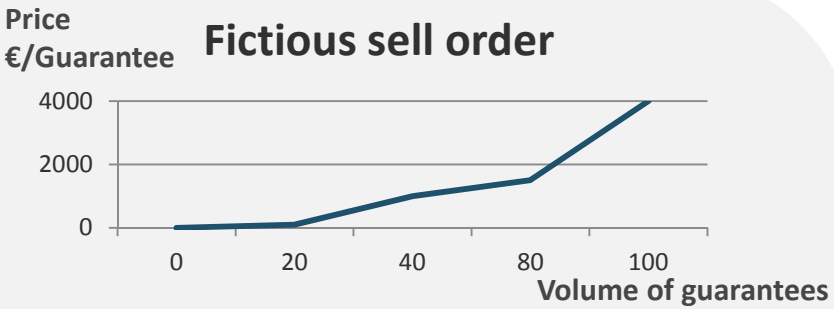
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Order examples

Fictious sell order

Price (€/guarantee)	0	100	1000	1500	2000
Volume (guarantee)	0	-20	-40	-80	-100

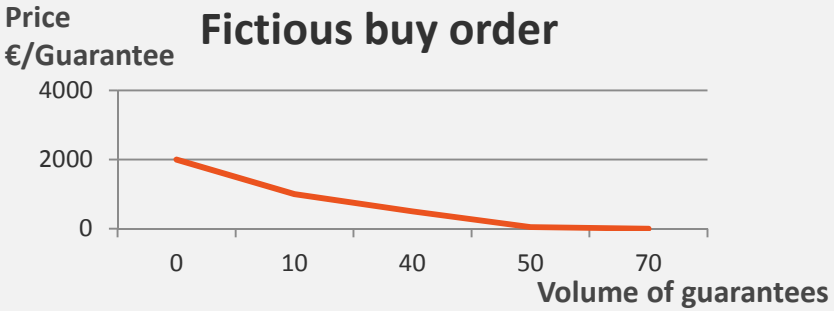
Volumes increase with increasing price



Fictious buy order

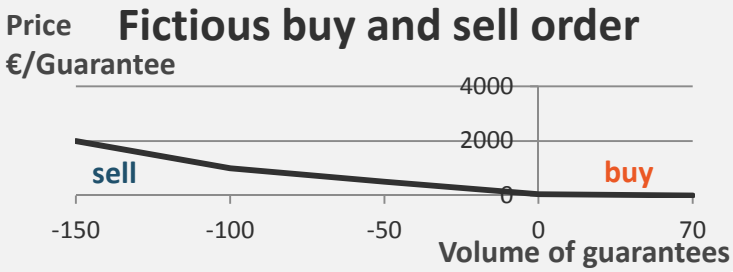
Price (€/guarantee)	0	50	500	1000	2000
Volume (guarantee)	70	50	40	10	0

Volumes decrease with increasing price



Fictious buy and sell order

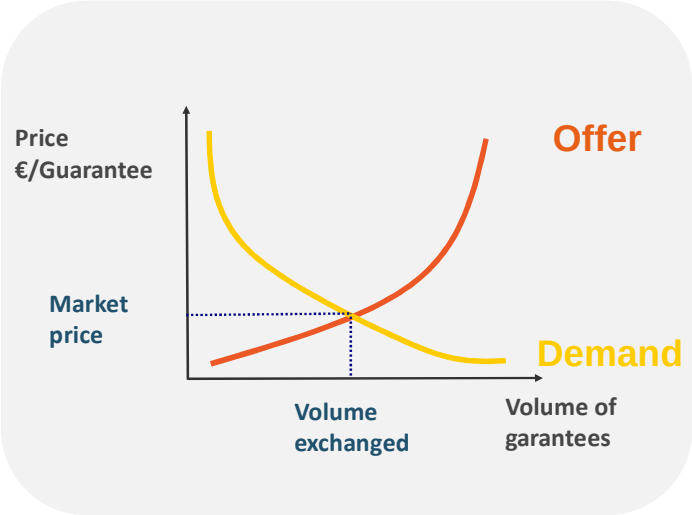
Price (€/guarantee)	0	50	500	1000	2000
Volume (guarantee)	70	0	-50	-100	-150



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Market Clearing Price (MCP) and Market Clearing Volume (MCV)

- Buy orders are aggregated to a demand curve, Sell orders are aggregated to an offer curve.
- For each hour, the Market Clearing Price (MCP) and the Market Clearing Volume (MCV) are determined at the intersection point of the two curves



All trades on a specific guarantee capacity auction are executed at the same price

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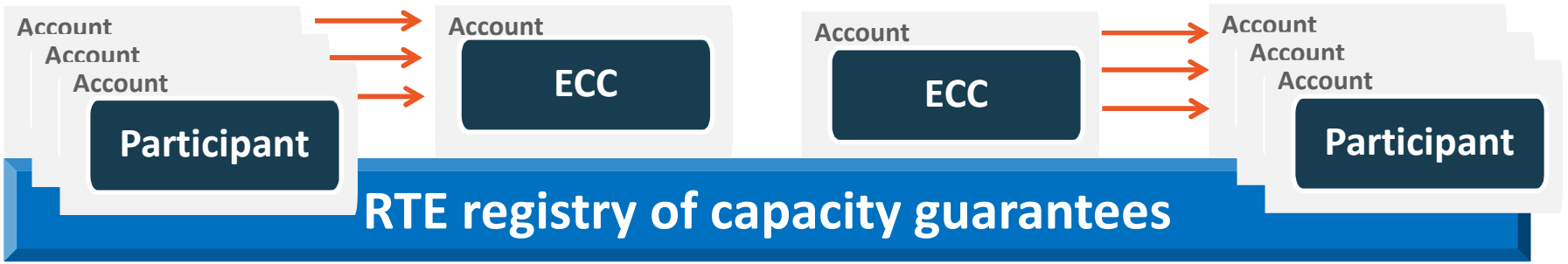
The registry of capacity guarantees and the organized market

Before the auction

Participants who whish to sell during the next auction put guarantees on ECC account on the registry.

After the auction

ECC allocates guarantees to members on RTE registry according to auction results.



- Short selling is not allowed: sellers shall put in advance their guarantees on ECC account in advance.
- ECC informs EPEX SPOT of selling limits of each participant.
- If an order exceeds the limit of the participant, it is rejected.
- Participants can increase their guarantees deposits and modify their orders until the due gate closure

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Financial limits on the capacity auction

Before the auction

- The participants who wish to buy shall negotiate a financial limit with their clearing bank.
- The clearing bank informs ECC of the limit.
- ECC informs EPEX SPOT of buying limits of each participant

After an orders is sent

- If an order exceeds the financial limit of the participant, it is rejected.
- Participants can adjust their financial limit and orders until due gate closures.

Financial Trading limit
100 000 €

Buy Order	0€	2 000 €
Guarantees 2020	50	20
Financial exposure	0	40 000 € (<100 000€)

√ Order acepted

Buy Order	0€	2 000 €
Guarantees 2020	50	60
Financial exposure	0	120 000 (>100 000€)

X Order rejected

The participant is informed of the rejection of his order and its cause. If the rejection is due to an insufficient financial limit, the participant can renegociate his financial limit with the Clearing Bank, and resend his order.

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Limits and auction process

Spot payment: Payment and delivery is initiated within 2 days after the transaction

Auction day -10 → Auction day -7 → Auction day -2 → Auction day → Auction day +1

07:00 CET
Guarantees deposit on ECC account

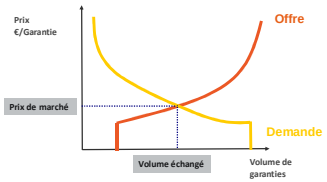
Cash Deposit on Clearing Banks

19:00 CET
Gate closure

Order reception 14:30 CET
Gate closure

Orderbook opening

Auction



ECC sends daily cash and quantity limits to EPEX SPOT

Publication of results

Payment and delivery

- **ECC proceeds to settlement of invoices with clearing banks**
- **ECC allocates guarantees to members on RTE registry according to auction results**

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Rationale for exchanges



- Preferred moment to exchange for Producers



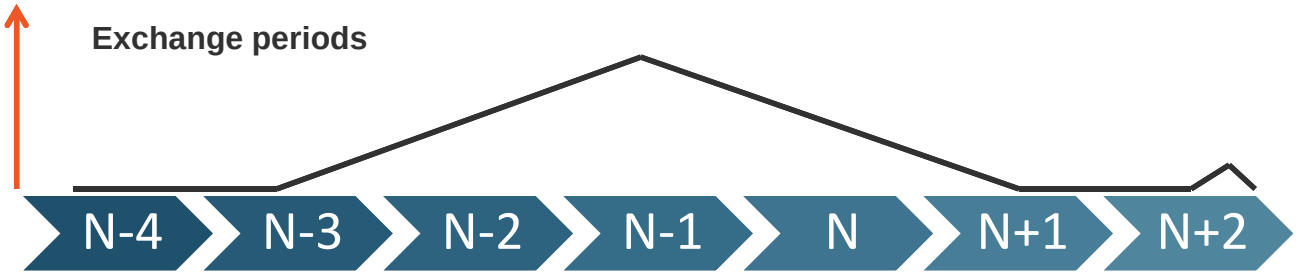
- Preferred moment to exchange Demand response operators



- Preferred moment to exchange Suppliers



- Synthesis of exchanges forecast



Commitments towards the European Commission include the offering of capacity guarantees to the organized market by big producers as from N-4.

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Planning of Capacity market auctions

Target number of auctions per year during the life of a guarantee; aligned with commitments to EU

	AL-4*	AL-3	AL-2	AL-1	AL	AL+1	AL+2	Number of auctions per guarantee
Target nb of auctions /Guarantee	1	4	4	6	1	1	1	18
When	October	April June October December	April June October December	February April June September October December	April	April	December	

*AL stands for "*Année de livraison*". It is the year on which obligation of supplier is based, and plant availability is checked. Each guarantee is named after AL year. For instance, guarantee 2020 is the product which is based on 2020 peak consumption and plant availability.

Auctions are organized on Thursday, excluding days which are directly or surounded by bank holidays in Germany or France.

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Next auctions

Auction in 2016

Only capacity guarantees 2017 will be traded in the 1st auction mid December 2016. This will allow to gather liquidity.

Auctions targets

	AL-4	AL-3	AL-2	AL-1	AL	AL+1	AL+2
February				X			
April		X	X	X	X	X	
June		X	X	X			
September				X			
October	X	X	X	X			
December		X	X	X			X

Auctions in 2017

Calendar of auctions in 2017 is subject to final validation and completion of certification for capacity products 2019 to 2021. It will be communicated before the end of 2016.

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Trading system and algorithm

- Simple and user friendly web interface trading system
- Proven and robust algorithm
- No technical fees
- 1 generic user and 2 portfolios included
- Public publication of results on EPEX SPOT website
- Private transmission of confidential results

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Capacity market fees

Total costs

Proposal of fees to be validated by EPEX and ECC instances.

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Entrance fees		
Not applicable for 90% of capacity market participants who are already members of EPEX SPOT.		0 €
Light entrance fee for new members interested in the capacity market only.		5 000 €
Annual fees	Incl. 1 user and 2 portfolios	2 000 €/year
Trading fees		3 €/guarantee

ECC	1 €/guarantee
Clearing bank contract	Private contract
Registry fees	Max 1 €/guarantee exchanged

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EPEX SPOT capacity market admission process

New members shall find a clearing bank.
Exisiting members shall agree this new market with their clearing bank.

All members need a registry account.

Trader exam must be passed for traders who have not passed EPEX SPOT general exam yet. For traders willing to trade on the capacity market only, a dedicated exam will be provided.



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Necessary agreements for new members at EPEX SPOT

Trading Agreement

- Between exchange member and EPEX SPOT
- Pertains to the relationship in terms of responsibility (trading, behavior on the market), requirements (technical, training of traders organization) and property (license)
- An additional annex must be filled by existing members

Non-Clearing Agreement (NCM)

- it's a trilateral agreement between ECC, the clearing bank and the exchange member
- It is required for new members

Registry account

- Between the exchange member and RTE
- At least one exchange account
- Includes all contractual agreements between RTE and the user regarding the settlement of imbalances recorded on perimeters
- It is required for all members
- Members can trade with a registry account which is not on their name if they have a mandate on that RTE registry account.

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Admission at ECC

Already admitted members at ECC/EPEX

- **TP_EPEX_01a** (on ECCs website: Access → Admission Forms → TP Forms → EPEX
- Precondition: Registry account at RTE

Please hand in the TP form latest until **18 Nov 2016**!

New members at EPEX, already admitted at ECC

- Participation in trading requires:
  - an application for recognition as a trading participant at EPEX (**TP_EPEX_01a**) and
  - a current NCM agreement (**NCM02**) including the "EPEX Spot SE" market or "All Markets"

New members at ECC

- EPEX trading participants who have not been registered with ECC so far have to complete the admission process as a Non-Clearing Member including the ECC KYC process

Please hand in complete admission documents latest until **28 Oct 2016**!

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Next steps

- Market rules available on the website https://www.epexspot.com/fr/extras/telechargement
- Membership process : ongoing from Sept. to November 2016
- 1st workshop 20 October 2016
- Communication of technical documentation: End October 2016
- Module e-learning capacity market: November
- 2nd Workshop: 17 November 2016
- Member tests: week of 21 November 2016
- Go live: Auction process begins on the 5th of December, with an auction gate closure on 15 December 2016



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