

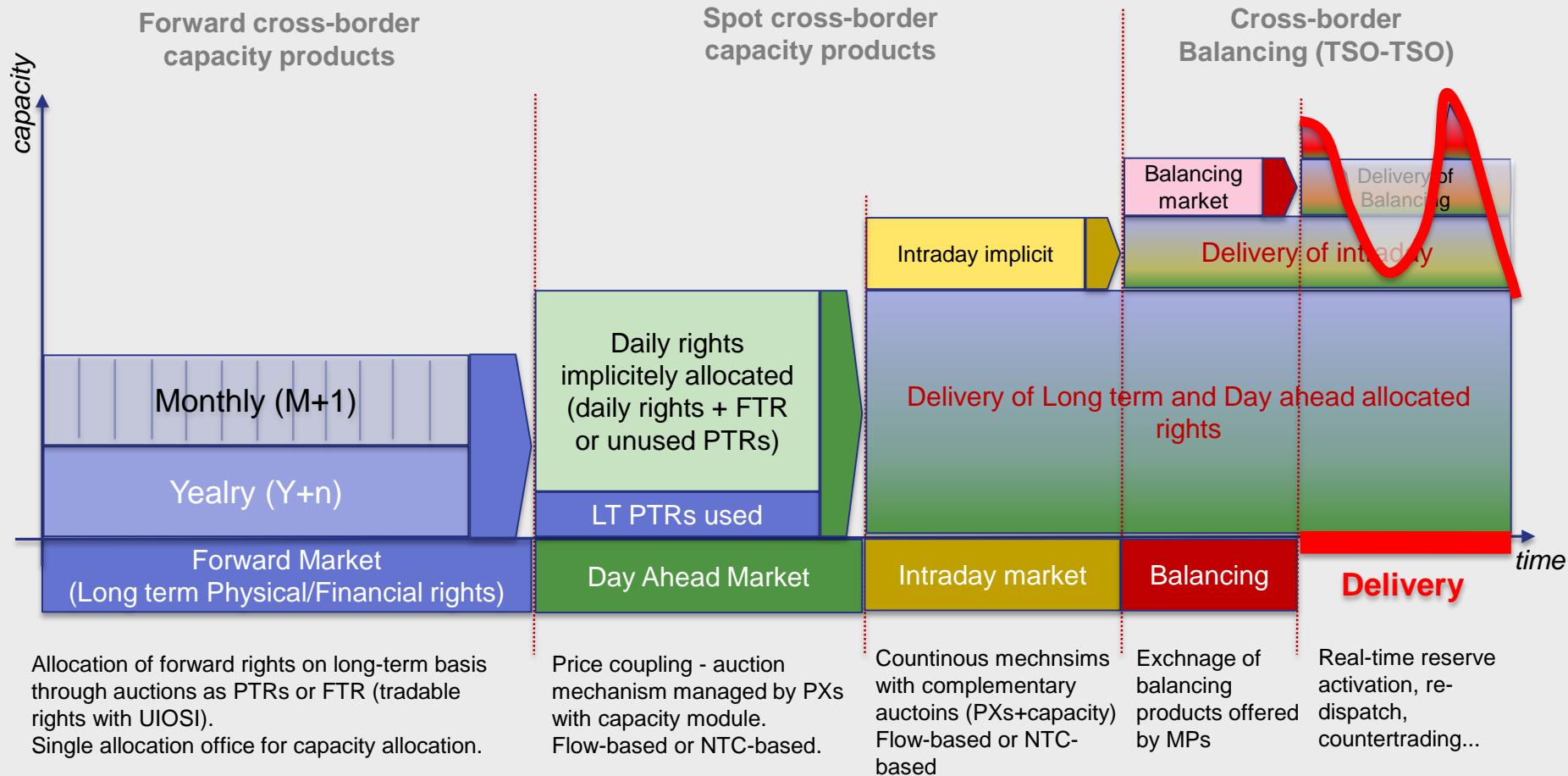


Market places & 'Lifecycle of a trade'

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Energy Community Secretariat

Few years after ...

European electricity target model

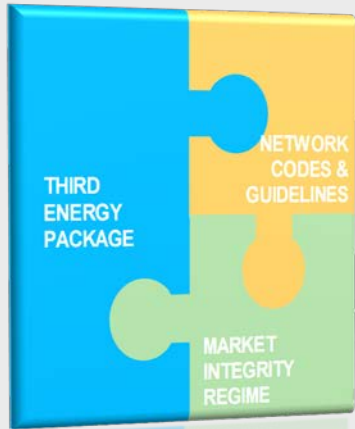


In focus

- 1 - Regulatory framework (from EU to Energy Community)*
- 2 - When did it [trading] start?*
- 3 - Electricity as commodity*
- 4 - What is trading?*
- 5 - Market places & ways of trading*
- 6 - Main trading functions*
- 7 - Lifecycle of a trade*
- 8 - Long vs short*
- 9 - Trading between markets [cross-border trading]*

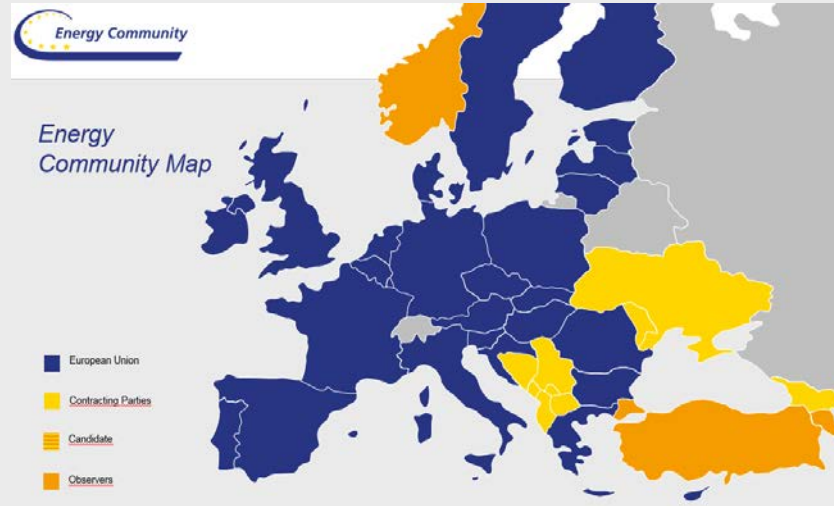
From EU to Energy Community

EU



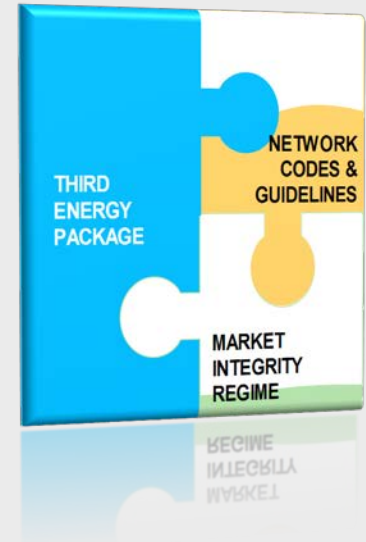
Other with significant impact:

- Climate Policies
- RES support
- Capacity support mechanisms
- Infrastructure regulation
- etc.



Energy Community Treaty
Berlin Process (WB6)

EnC



Brief history

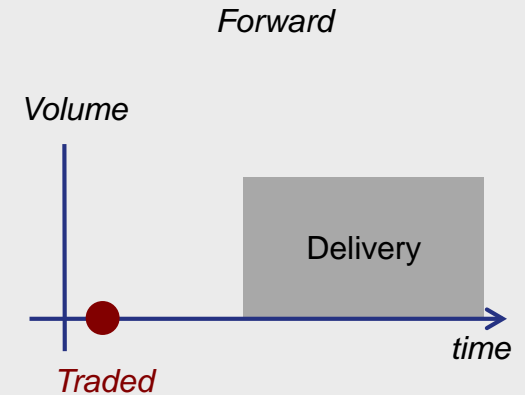
- *Energy trading markets*
 - Since the growth of oil spot markets in the late 1970s
- *In Europe*
 - Liberalisation of the energy markets played crucial role
 - Started in UK with unbundling and privatization
 - Spread throughout as a top-down approach, i.e. through legislative packages
- *Coal trading has also developed*
- *Trading of carbon emissions*
 - The creation of the EU ETS

Being a tradable good

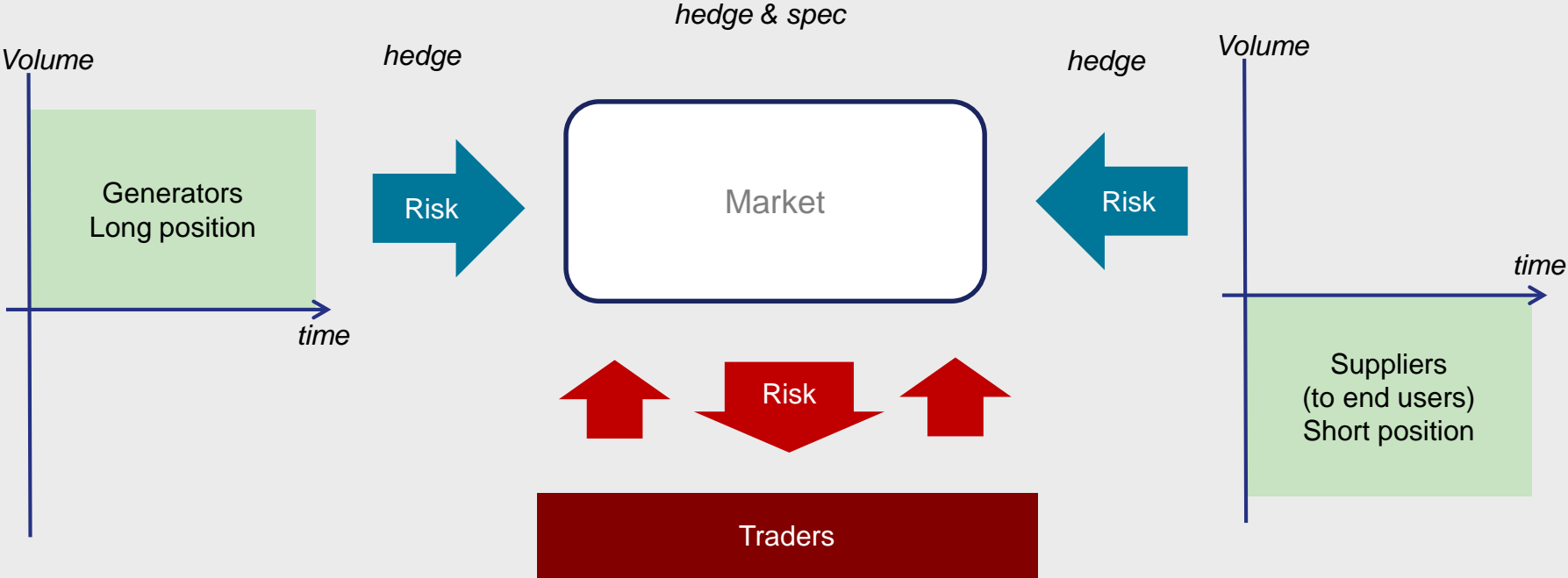
- *To be traded widely on market places*
 - Same, uniform and standardized = a commodity
 - Other energy commodities: crude oil, natural gas, coal, electricity, etc.
- *Electricity as a commodity - It can't get more uniform and more standardized*
 - Cannot be stored*
 - Price correlated with other energy commodities
 - Peculiar transportation – network losses
- *Oil is the biggest energy commodity market*

Tradable contracts

- *Product specification is linked to:*
 - Place of delivery
 - Time/period of delivery (tenor)
 - Optionality
- *Primary source of energy implies the product – technology*
 - Nuclear / coal / gas = base
 - Gas / oil / hydro = flexibility (peak /hourly)
 - Wind /PV / must-run river = intermittent



What is trading?



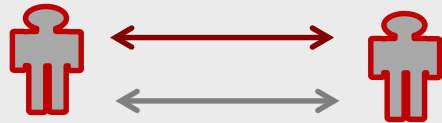
Market places & ways of trading

Bilateral trading

(bilateral credit arrangements)

Bilaterally

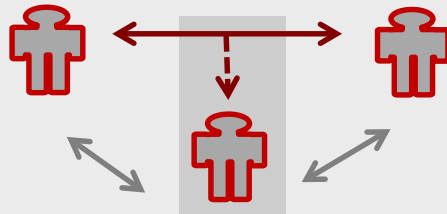
Structural/bespoke contracts



OTC

Brokers via screen or phone

Standard contracts



Exchange

(centrally cleared contracts)

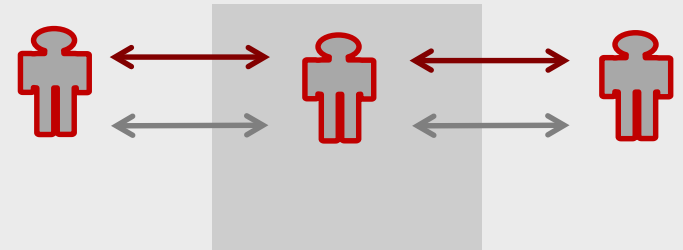
Continuous trading

Standard contracts

Auctions

Hourly day-ahead products

Intraday too, in some cases



PXs in Europe

- *Most (if not all) are members of Europex <http://www.europex.org/members/>*
- *Almost every country in EU has a PX for DA auctions and futures (derivatives)*
- *Counterparty is Clearing House/PX*
- *Transparent for general public (price, volume and products)*
- *From next week products up to few years ahead*
 - For example Cal 18 traded at HUPX
- *For delivery into specific market/TSO (underlying market if financial)*
 - Delivered at Hungarian TSO (MAVIR) or settled against HU DAM/HUPX
- *Margining and settlement with the Clearing House*
 - Cleared through ECC (HUPX clearing house)

OTC in Europe

- *Trayport (Global Vision – GV) is an amalgamation of brokers platforms*
<https://www.trayport.com/uk/home>
 - Not transparent for general public – can be bought as read only
- *Standard bilateral contracts (Master agreement)*
 - EFET/GTMA contracts (physical)
 - ISDA contract (financial)
 - Margining exchanged bilaterally
 - Set-up with the broker
 - Execution on screen/phone
- *Trayport is used by PXs too*
- *LEBA – association of brokers*
 - Reports on volume traded

<https://www.leba.org.uk/pages/index.cfm>

The screenshot shows a trading platform interface with multiple columns for different market segments: NBP, NCG, Gaspool, and PSV. Each segment has columns for Bid, Ask, Last, and other market data. A pop-up window is visible over the NBP data, showing details for 'NBP WD x DA (Ask)' with a price of -0.40, a quantity of 75 K Therms, and a mid-point of -0.55. The interface also shows a 'Total Quantity' of 75 K Therms and a 'Last Update Time' of 2 mins 31 seconds.

OTC price reports



European Daily Electricity Markets



Energy Prices | News | Analysis

Section 1

News
 Commission still assessing impact of SEE winter crisis
 UK developer plans subsidy-free solar plant
 Polish coal supplier likely to increase its prices for 2018

Section 2

Markets

Section 3
Back pages

- OTC price data is obtained by subscription to a market report published by a price reporting agency

- Platts
- ICIS Heren
- Argus Media

- Daily reports with prices and market news

HEREN® UK INDICES €/MWh

July	€40.228/MWh
Day Ahead	€37.141/MWh Volume: 2205 MW
Day Ahead Peaks	€41.333/MWh Volume: 150 MW

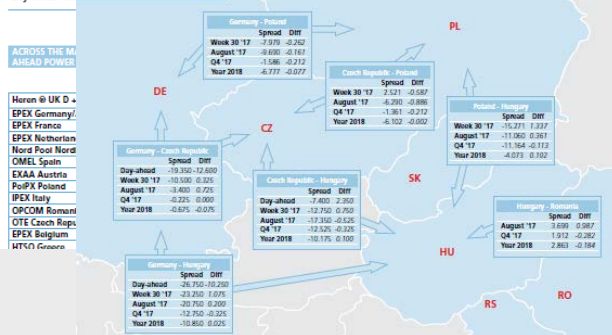
HEREN® GERMAN INDICES €/MWh

July	€32.563/MWh
Day Ahead	€35.776/MWh Volume: 5300 MW
Day Ahead Peaks	€37.262/MWh Volume: 3025 MW

HEREN® FRENCH INDICES €/MWh

July	€34.388/MWh
Day Ahead	€38.159/MWh Volume: 2600 MW
Day Ahead Peaks	

REGIONAL BASELOAD SPREADS €/MWh

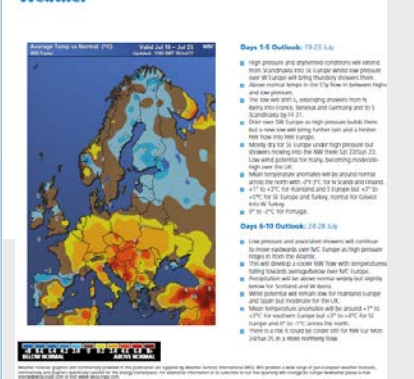


Spreads are based on price movements, and reflect the premium of the first option relative to the second instrument. If the first instrument is assumed to be the second, the spread will be negative.

GERMAN MARKET 18 JULY 2017

Period	BaseLoad				Data Used	Peaks			EMWh
	Bid	Offer	Diff	Change %		Bid	Offer	Diff	
Day-ahead	35.55	35.75	-2.600	-6.80	T	37.15	37.35	-2.250	T
Wednesday	35.55	35.75	-0.550	-1.52	T	37.15	37.35	-1.250	T
Thursday	38.00	39.00	1.000	2.67	B	41.50	42.20	1.850	B
Friday	37.00	37.50	n/a	n/a	B	39.95*	40.95*	n/a	F
Weekend	30.00	30.50	0.625	2.11	B	n/a	n/a	n/a	n/a
Week 30 '17	32.50	33.00	-0.425	-1.28	B	37.75	38.75	0.125	B
Week 31 '17	30.75	31.15	-0.800	-2.52	B	36.25	36.75	-0.500	T
August '17	32.10	32.15	-0.250	-0.77	B	37.00	37.60	-0.275	B
September '17	34.00	34.30	-0.225	-0.66	B	40.00	40.50	-0.100	B
October '17	35.00	35.20	-0.275	-0.78	B	42.00	43.00	-0.125	B
November '17	36.90*	37.90*	-0.100	-0.27	I	46.50*	47.50*	-0.150	I
Q4 '17	35.75	35.85	-0.125	-0.35	B	44.70	45.10	-0.125	B
Q1 '18	35.60	35.90	-0.075	-0.21	B	44.80	45.00	0.100	B
Q2 '18	28.50	28.65	-0.175	-0.61	B	34.35*	35.35*	0.100	I
Q3 '18	29.05	29.30	0.250	0.86	B	34.45*	35.45*	0.100	I
Q4 '18	33.05*	33.35*	0.200	0.61	B	42.40*	43.40*	0.100	I
Q1 '19	32.35*	33.35*	-0.100	-0.30	I	42.35*	43.35*	-0.150	I
Year 2018	31.65	31.70	0.050	0.16	B	39.20	39.60	0.100	B
Year 2019	29.30	29.40	0.075	0.26	B	37.00	37.20	-0.125	B
Year 2020	29.30	29.40	0.050	0.17	B	37.20*	37.70*	0.100	T
Year 2021	30.35*	30.45*	0.400	1.33	B	38.30*	39.30*	0.050	I

Weather



Trading from inside the trading firms

Front office

Analysts

Traders

Originators

Operations

Middle office

Credit

Market

Product control (P&L)

Settlement

Reporting

Back office

Treasury

Finance /Accounting

Tax department

Legal / Regulatory / Compliance



Trade lifecycle – getting ready

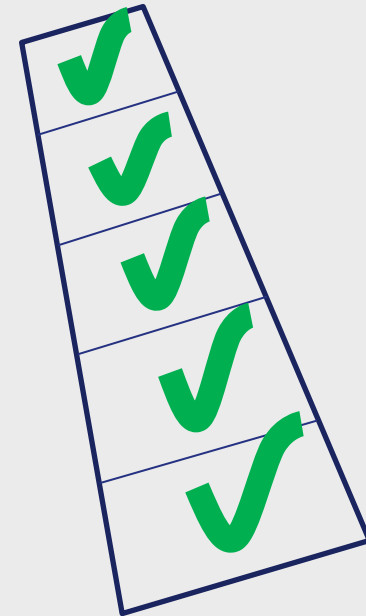
Entering new market

(internal)

1. Business case
2. Market assessment
3. Legal and Regulatory assessment

(external)

4. License with the Regulator- if needed
5. Balance Responsible Party with the TSO to be able to use transmission network
6. PX/Clearing House registration
7. Bilateral arrangements

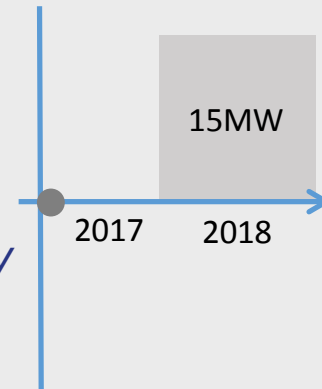


Trade lifecycle – trade in embryo

- *Each desk / trader is given a risk mandate – exposure allowed to take ... say for a year ahead products*
- *Analysts look at supply and demand conditions, network capabilities, constrains, weather forecasts, hydrological forecast (based on previous years)*
 - Also any information on new investments, or other information that might affect fundamentals for the coming year
- *Credit team sets up credit arrangements (margining; bilateral or centrally)*
- *Trader makes price assessment – forward curves (expectation where the price is expected to trade, expected/target P&L)*

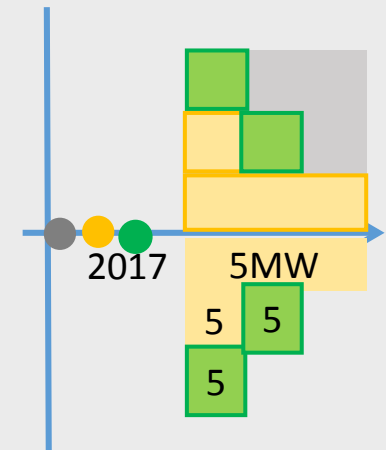
Trade lifecycle – trade execution

- *Considering potential limitations and assessments made, the trader chooses the product and venue (including volume, price & direction)*
 - Check the screen to buy 15 MW of Cal18 Base, delivery @ MAVIR :
 - If a price is offered on screen (by an initiator) – the traders clicks and executes the purchase (he is the aggressor), or
 - He puts a bid at a the price x and waits for an aggressor
- *Once the trade is executed it is booked in the system (deal capture)*
- *Settlement/confirmation team confirms the trade with the broker and the counterparty (via electronic platform, email or fax ...)*
- *Executed trade is reported (REMIT/EMIR)*
- *P&L team calculates the P&L at the end of the day*
- *Market risk may update the risk mandate on daily basis if high price volatility*
 - Potential margin updates



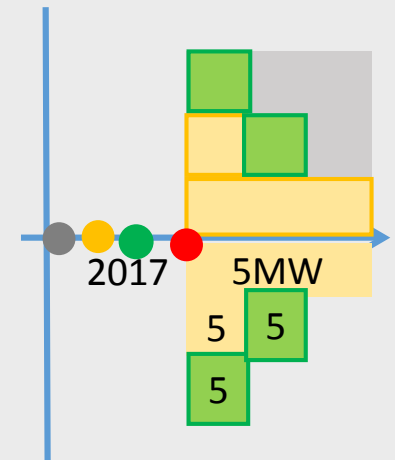
Trade lifecycle – portfolio management

- *Trader has a long position of 15MW of Cal18 Base, delivery @ MAVIR*
- *Based on price assessments, fundamental analyses and any limitations, it may:*
 - Sell part or all 15MW as Cal12 Base product
 - Wait until close to delivery and sell Month-ahead, Quarter-ahead, Day-ahead or Intraday ...
- *It chooses to sell 5MW as Cal18 Base, delivery @ MAVIR and 5MW as Q1 2018*
- *Later it sells another 5MW as Q1 2018 Base and 5MW Q2 2018*



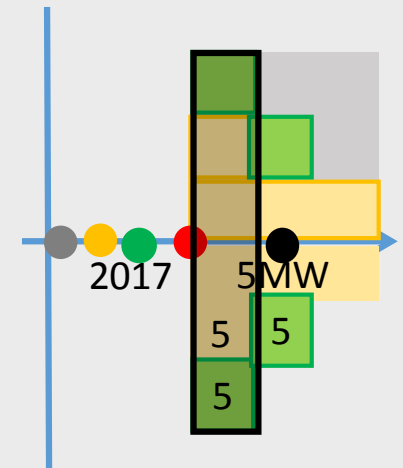
Trade lifecycle – delivery

- Q1 2018 is flat but needs to be delivered
- Delivery involves nomination with the TSOs – this case with MAVIR
 - Take delivery of 15MW from CPs X and Y
 - Deliver to CPs A and B
 - Nomination is done usually on D-1 before 2pm (x-border nomination is different) – by the Operation team
- *The remaining opening position is traded quarter/month/week ahead and/or day-ahead and intraday*

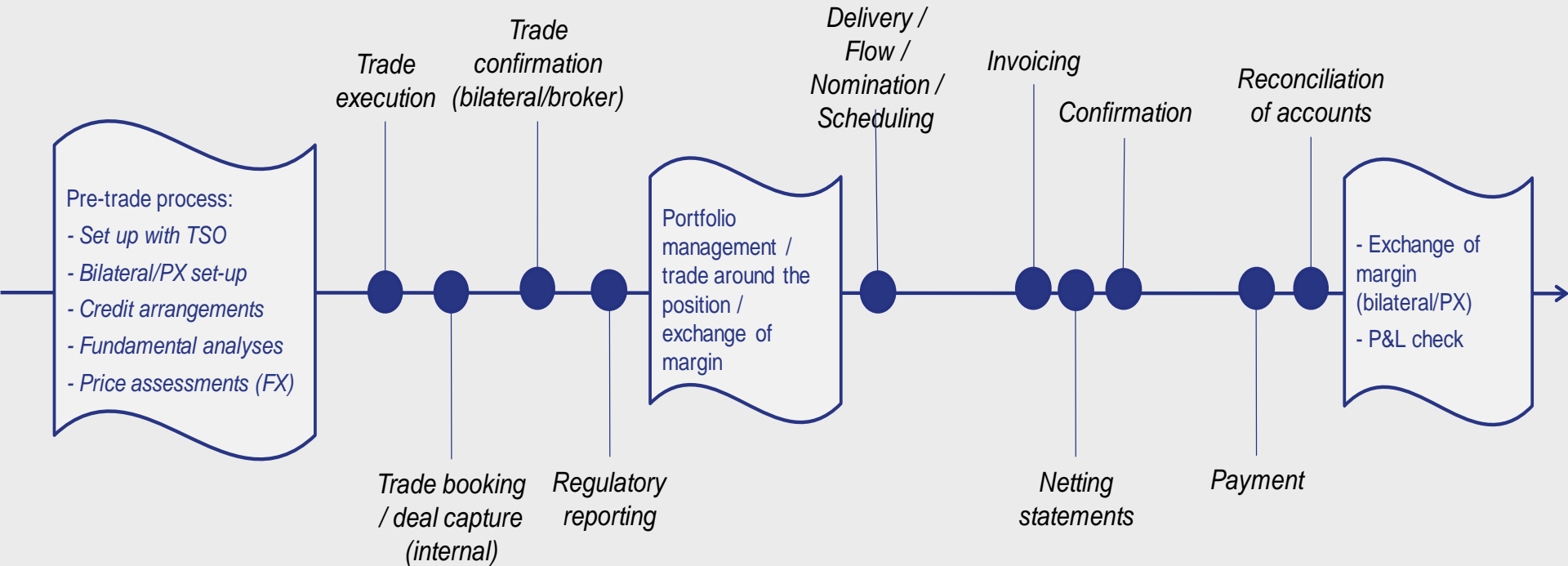


Trade lifecycle – financial settlement

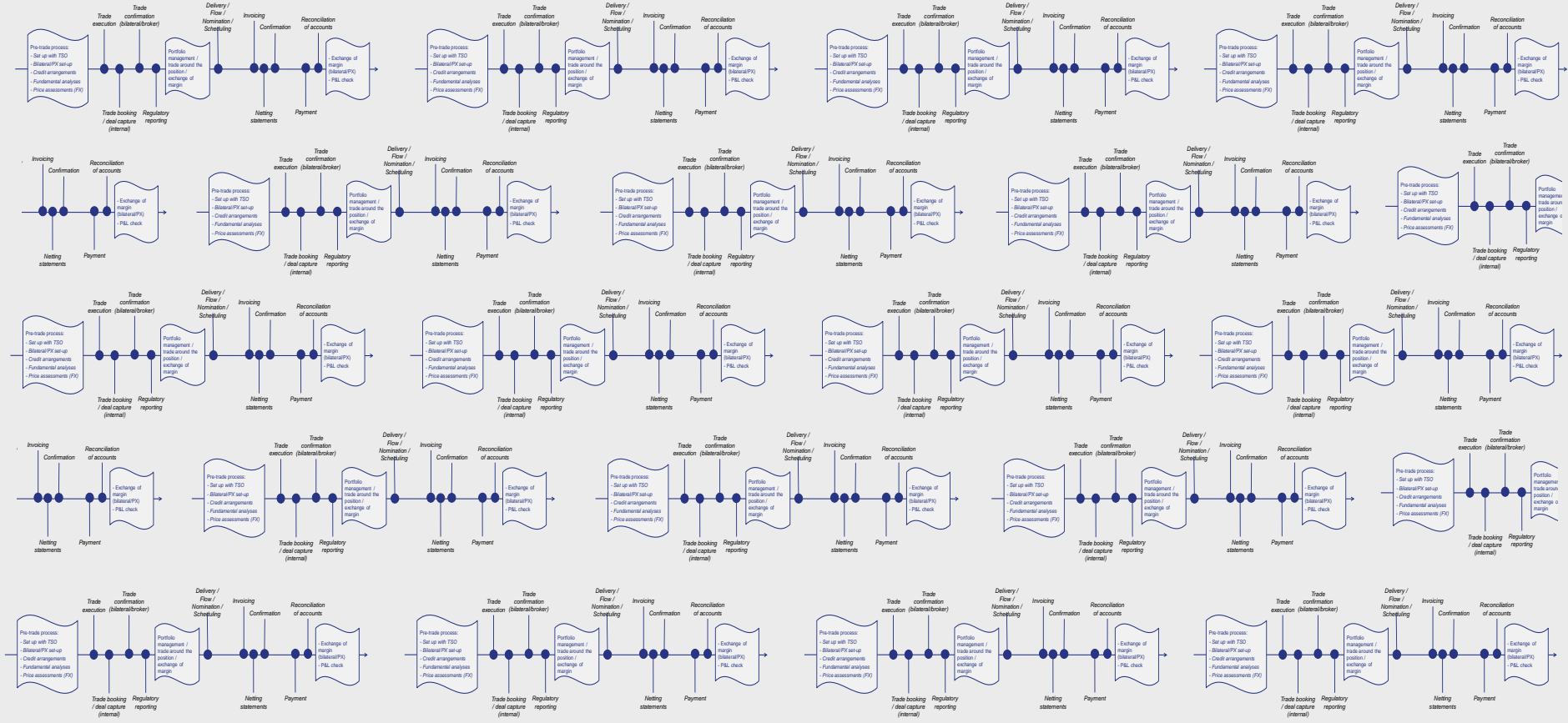
- *Few days after the delivery month, the invoices are issued by counterparties (or PXs)*
- *Trading firms apply netting of payments so netting statements are exchanged and final payment/direction is confirmed by middle office*
- *Treasury team ensures the payment is made (cash transfer)*
- *Accounting confirm the records – daily reconciliation of accounts*
- *After the payment credit exposure changes – credit updates the exposure*



Recap of the trade lifecycle

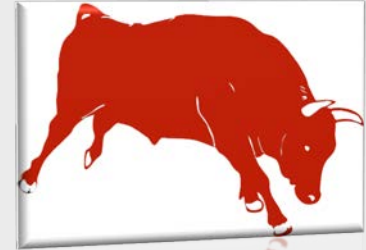


Multiply this by X times

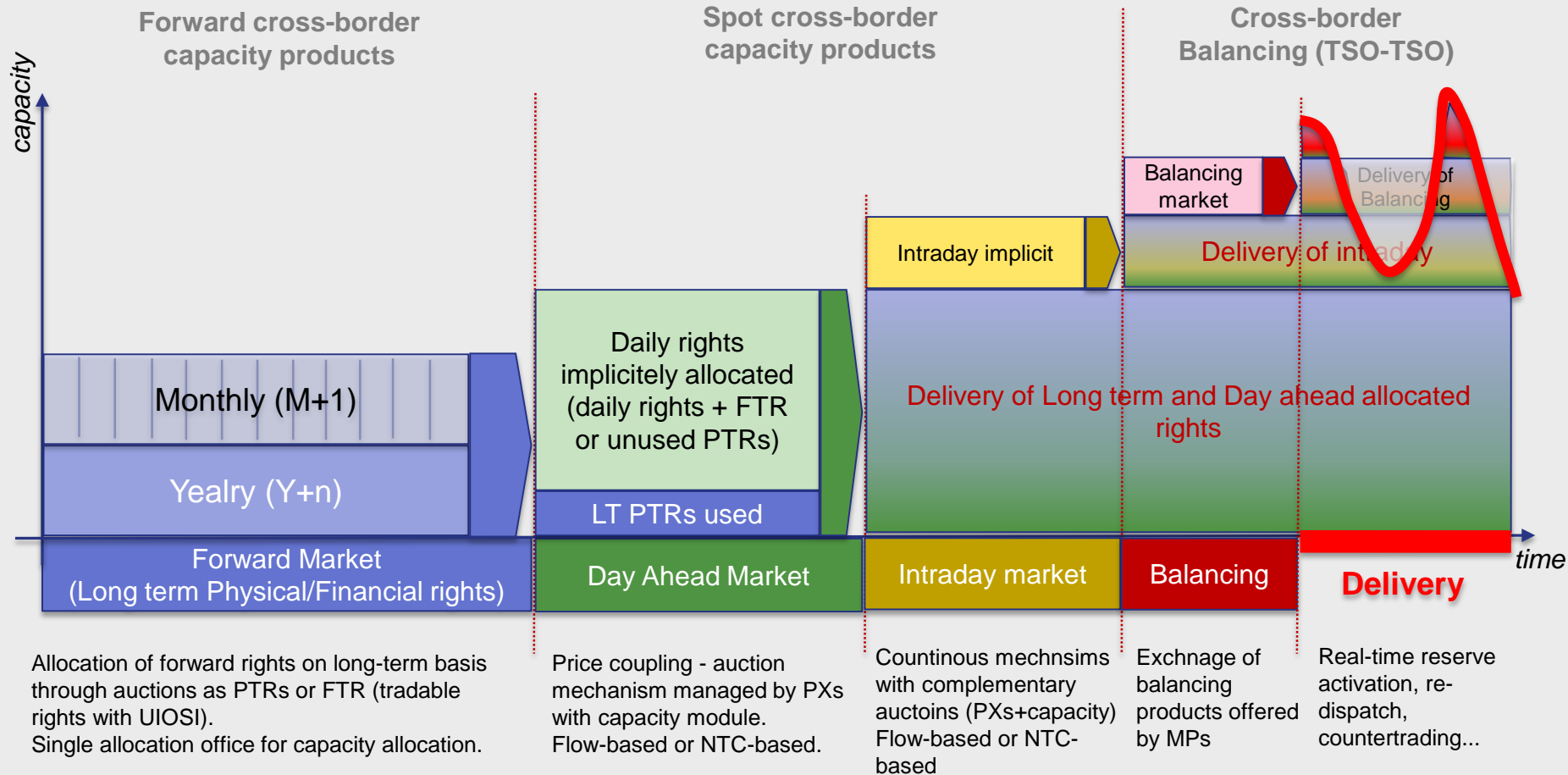


Result is ...

- *Building up position:*
 - Long, bought electricity for future delivery so you need to sell it before the delivery comes
 - You are effectively a ‘generator’
 - You expected that price will go up in shorter term market
 - You were bullish
 - Short, sold electricity for future delivery so you need to buy it before the delivery comes
 - You are effectively a ‘supplier’ to end users
 - You expected that price will go down in shorter term market
 - You were bearish
- *Have an offset position*



From one zone to another; cross-border trading



Thank You!

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