

Romanian Electricity Market

- NOWADAYS -

Mihaela Constantinescu
OPCOM

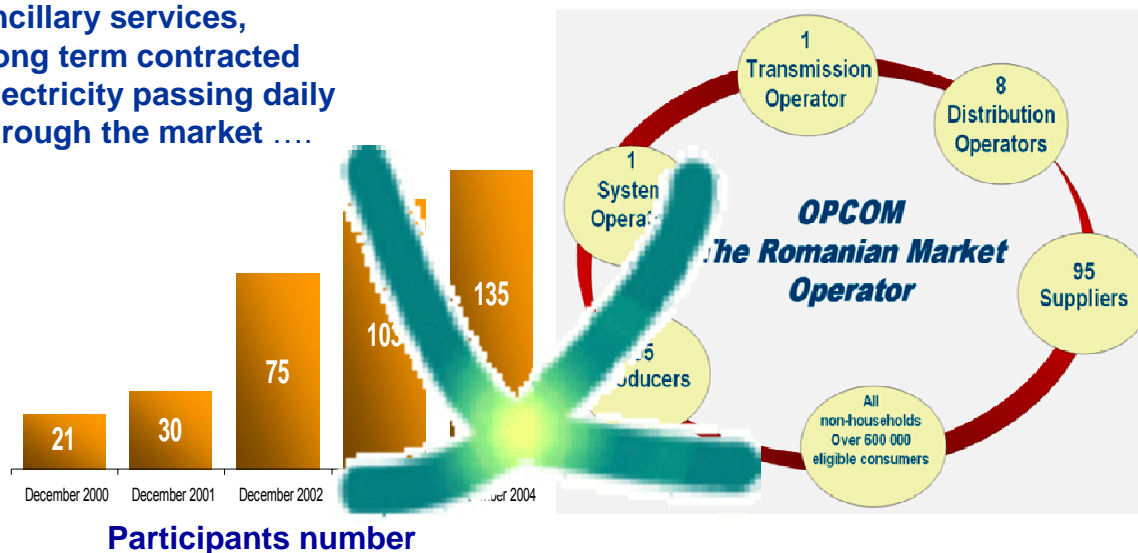
Current Status & Development Towards an EU Electricity
Market – Highlights of the
Western and Southeast European Electricity Markets

-part II -

The challenge and the changing

Since June, 2005

Forecast, scheduling,
ancillary services,
Long term contracted
Electricity passing daily
through the market



OPCOM is dealing with the main roles of a Power Exchange:

- To provide a reliable reference price for other physical and financial markets;
- To support the reliable generation schedule making.

For a marketplace to face the challenges of the liberalization process is a "never ending story": Each stage is rising different problems.

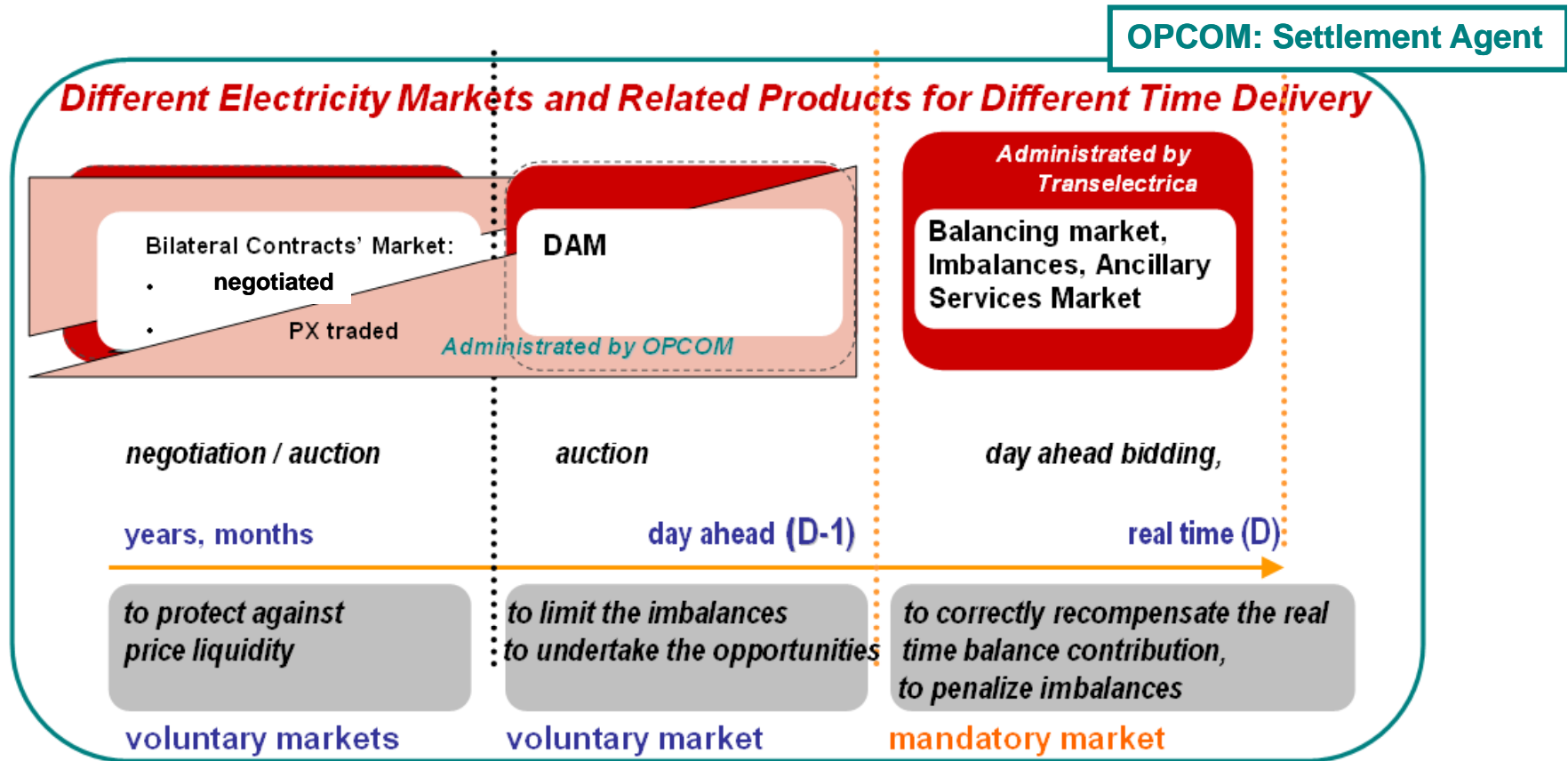
The Marketplace has to prospect these challenges, correctly appraise the impact, cooperate with and ask for support of the regulator.

Principles of the new model



- **The market is changed from a centrally dispatched system to a self dispatching system**
- **The market participants have the possibility to negotiate bilateral contracts for exchange of electricity**
- **A voluntary power exchange is established where the market participants can purchase and sell electricity on hourly contracts for delivery next day by introducing bids expressing their willingness**
- **There is established a Balancing Market where the TSO can get resources for balancing the electricity system**

The Multi-Market Concept

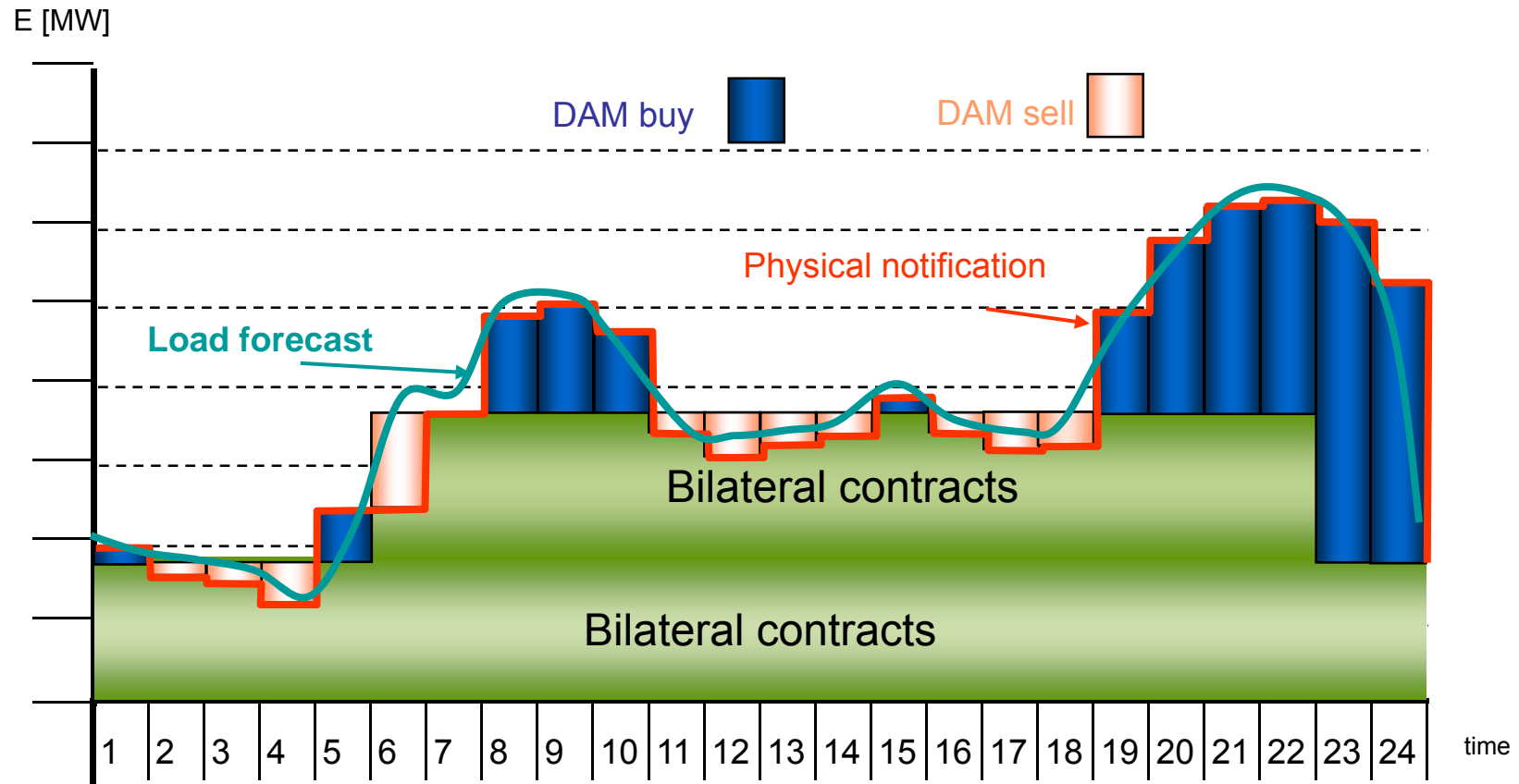


Other Products

Tranelectrica
OPCOM

Cross Border Transmission Capacity Market Operator
Green Certificate Market Operator

Participation in the market – day ahead

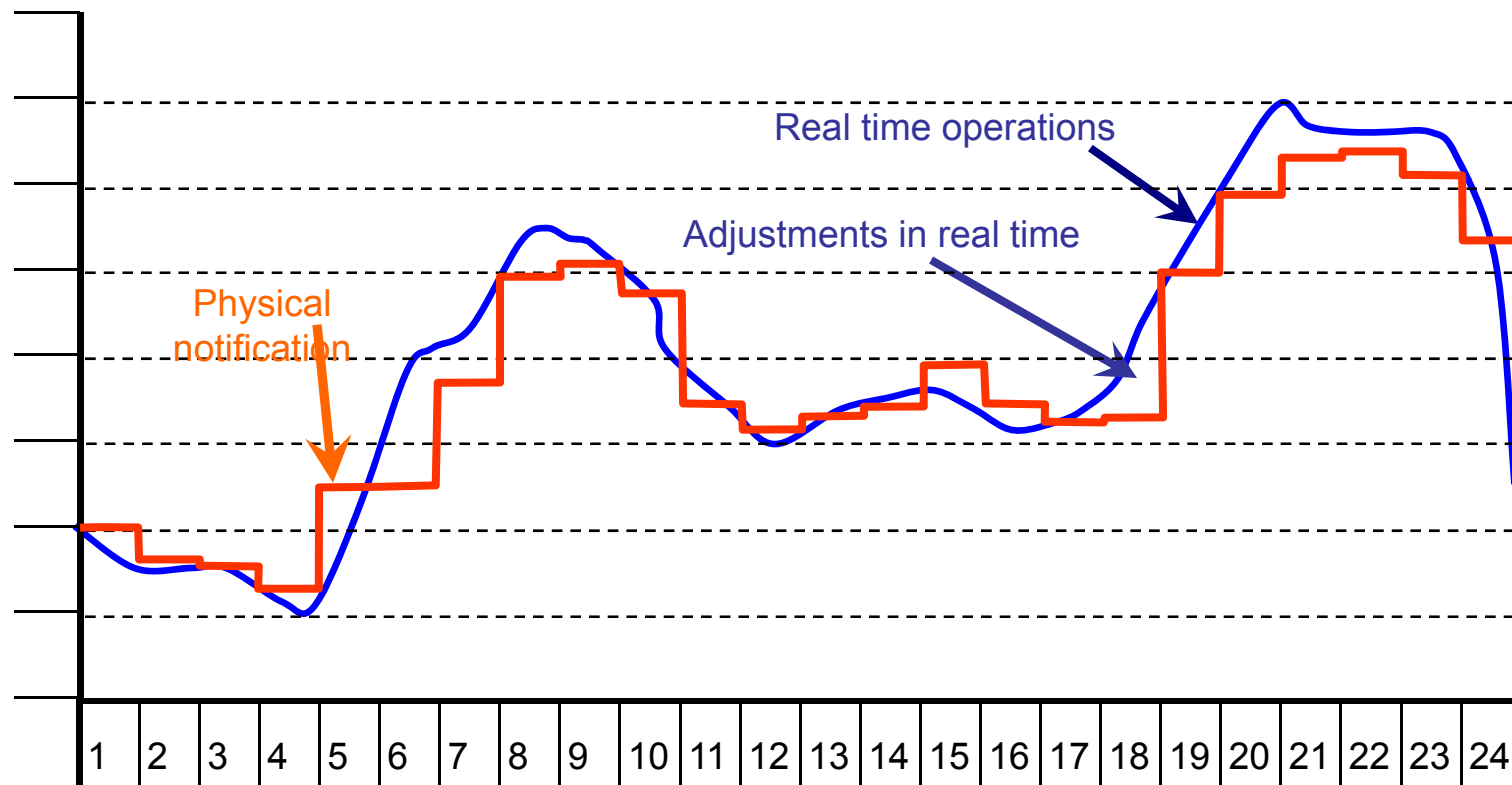


Self Scheduling



- **The licensed market participants use the bilateral market and the day-ahead markets to balance their portfolio**
- **After the gate closure (when all trading activity has to be stopped) all trades between BRPs have to be reported to TE for settlement purposes**
- **All generators have to schedule their units themselves and submit physical notifications to TE**

Participation in the market – real time

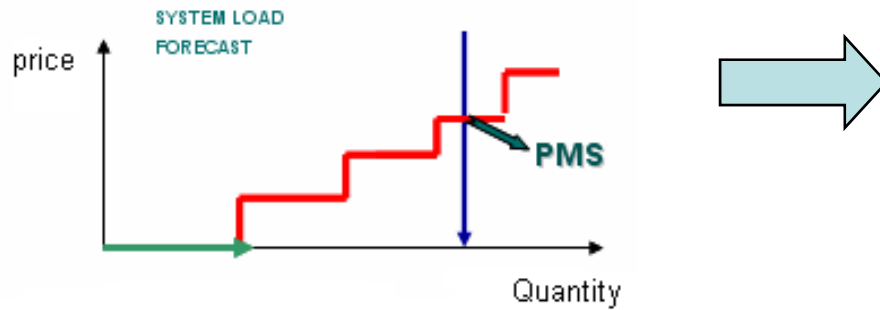


DAM: The price mechanism



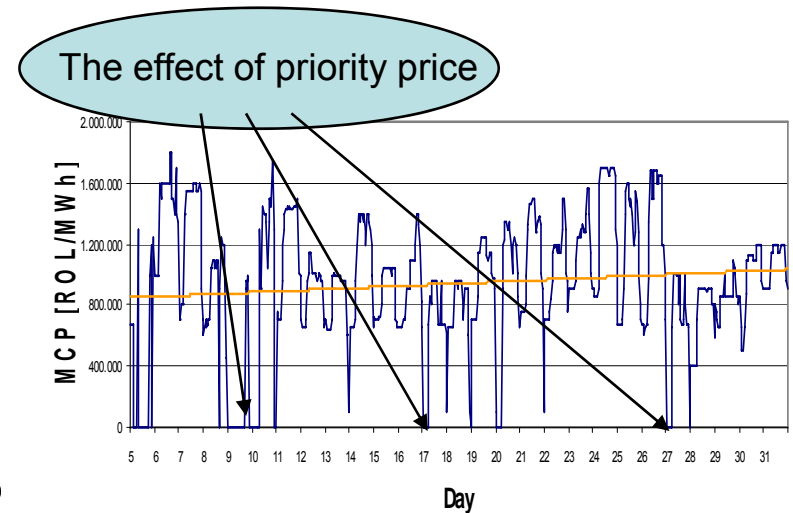
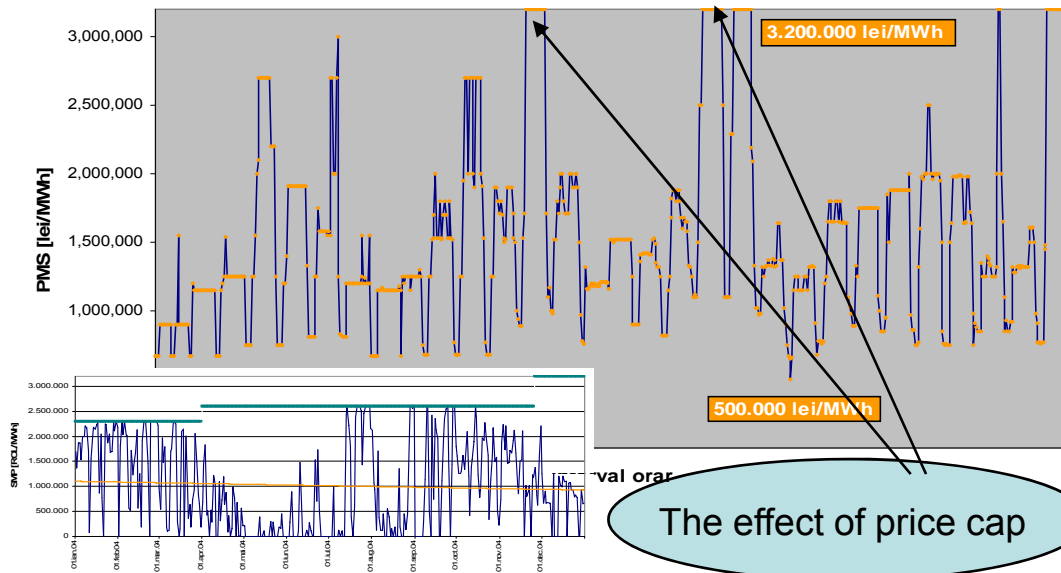
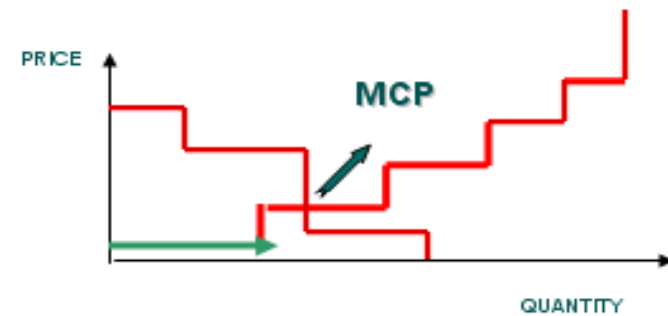
Calculation of System Marginal Price (PMS)

OPCOM aggregates sell offers and elaborates system load forecast.



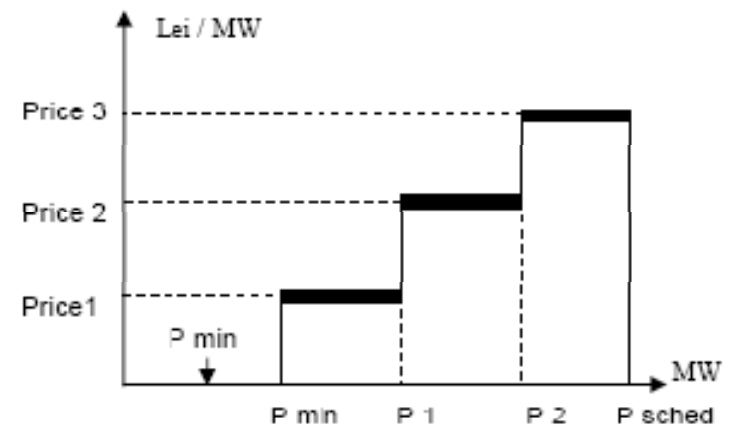
Calculation of Market clearing Price on DAM (PIP)

OPCOM aggregates sell and buy offers.



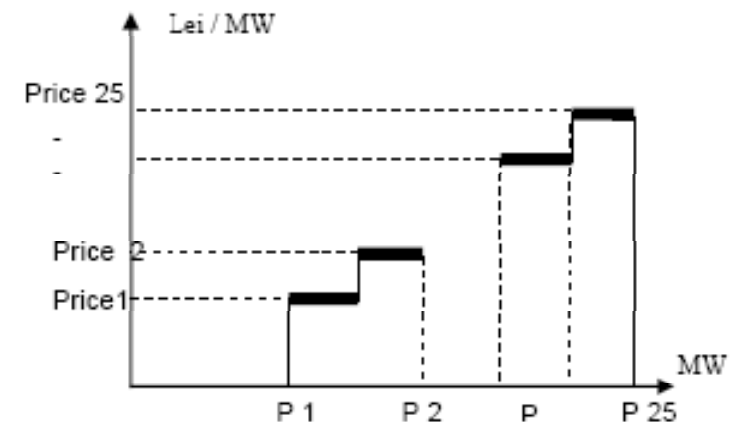
OFFERS BY PRODUCERS (SELL) IN THE FORMER MARKET MODEL, UNTIL 2005

- 3 level quantity-price for peak and base load periods.
- Correlations between offers for production and ancillary services
- The offers was mandatory and had to cover the whole availability
- Offers for each dispatchable unit
- Offers submitted via e-mail.

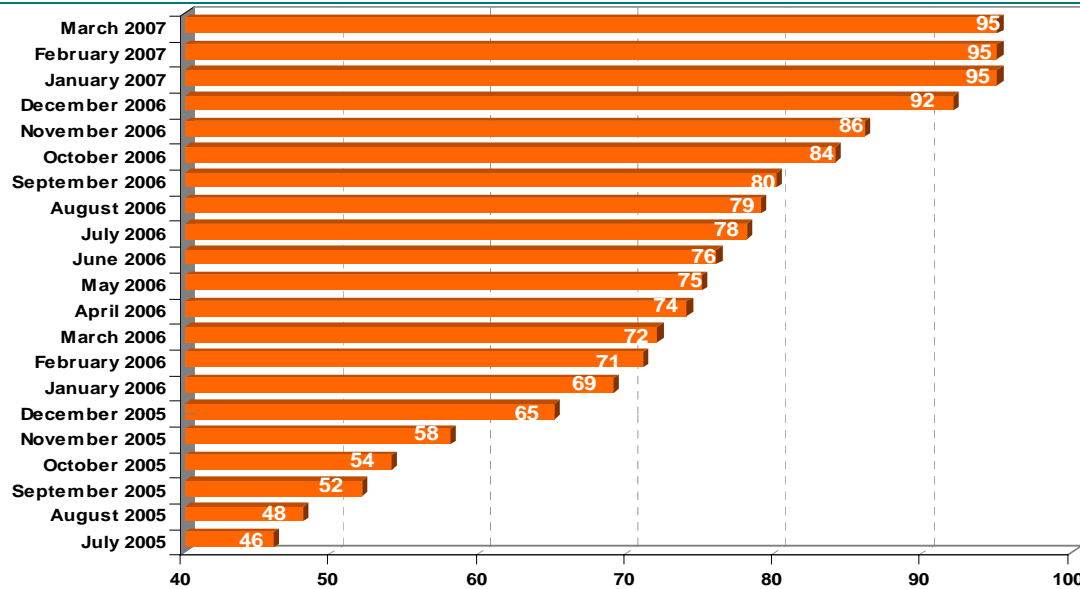


SELL OFFERS IN THE CURRENT MARKET MODEL, SINCE 2005

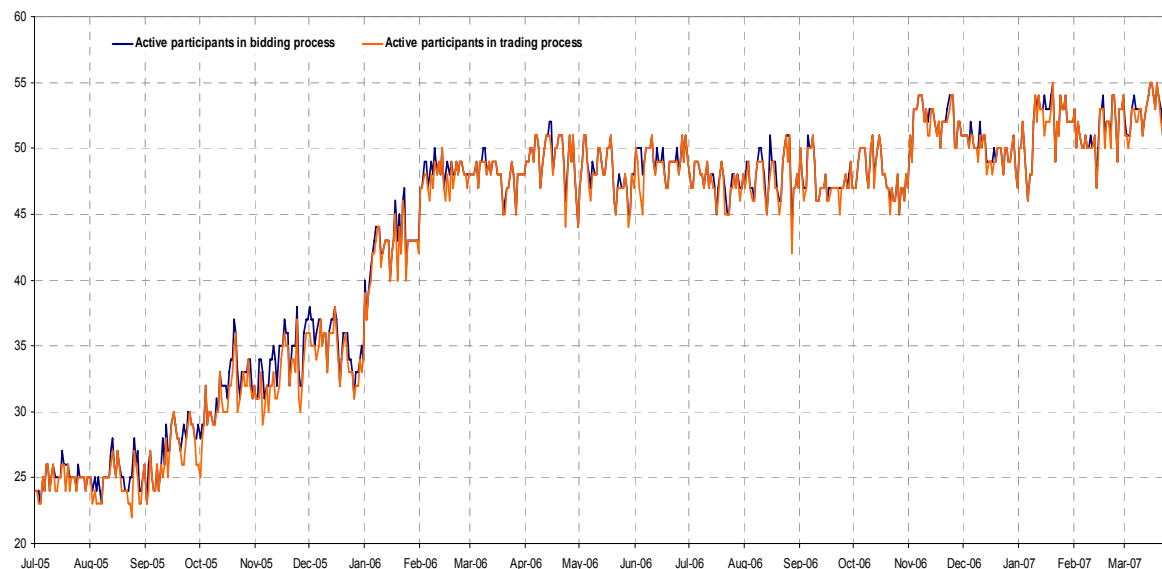
- Up to 25 pairs quantity-price for each trading interval.
- Voluntary offers.
- Offers are submitted as per participant' portfolio.
- Offers are submitted using web interfaces or trough XML files.



DAM: Results-participation in the spot market



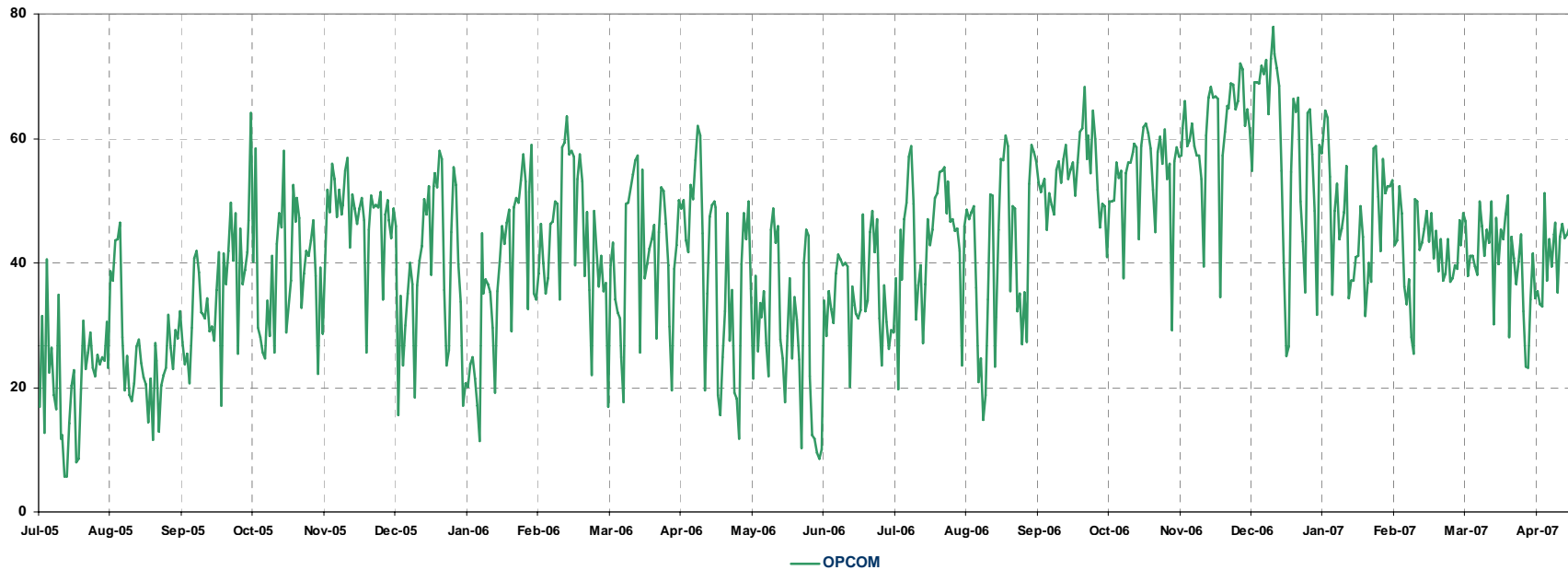
Participants are licensed parties holding a license for supplier, producer or network operator (only for network losses)



DAM: Results – prices and volume in the spot market

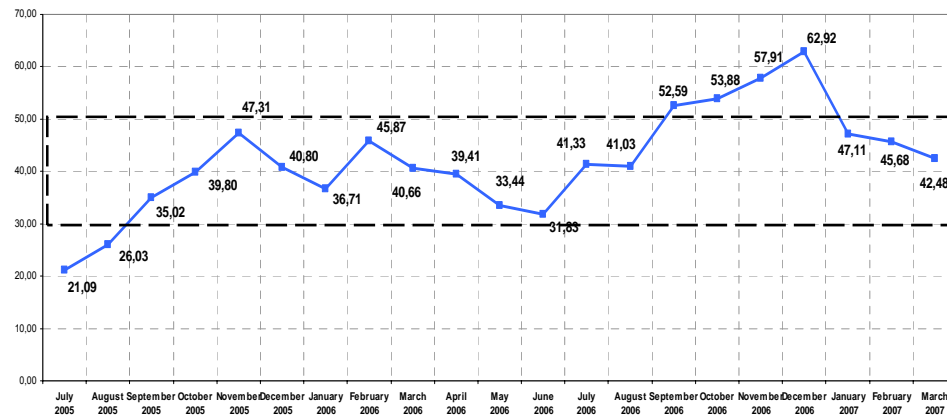


[Euro/MWh]



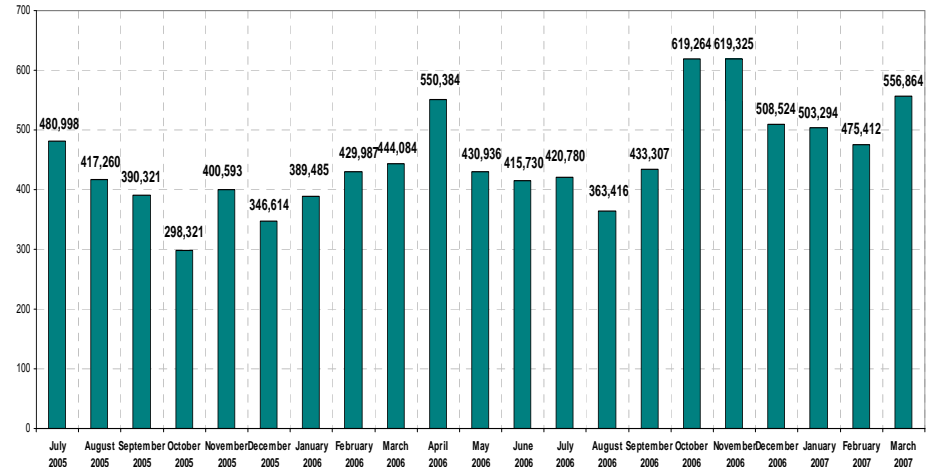
[Euro/MWh]

— Average prices



Average traded volume

[MWh]

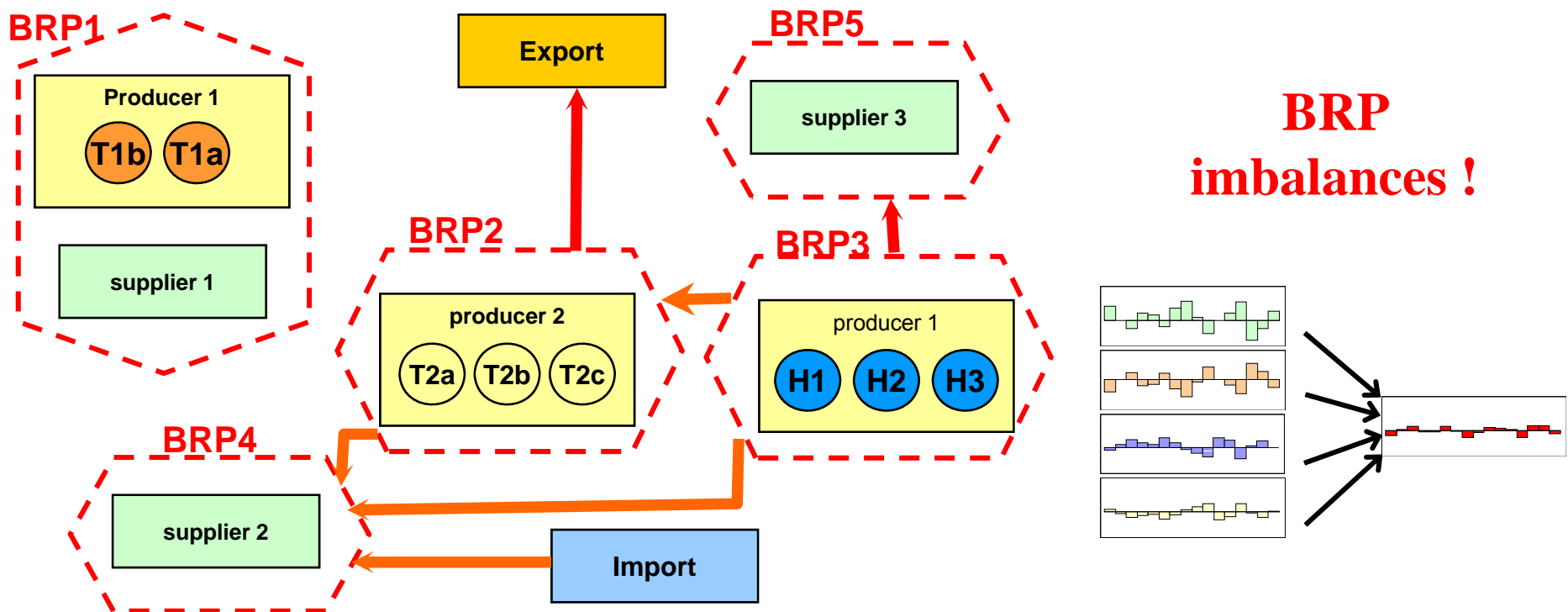


Balance responsible party concept

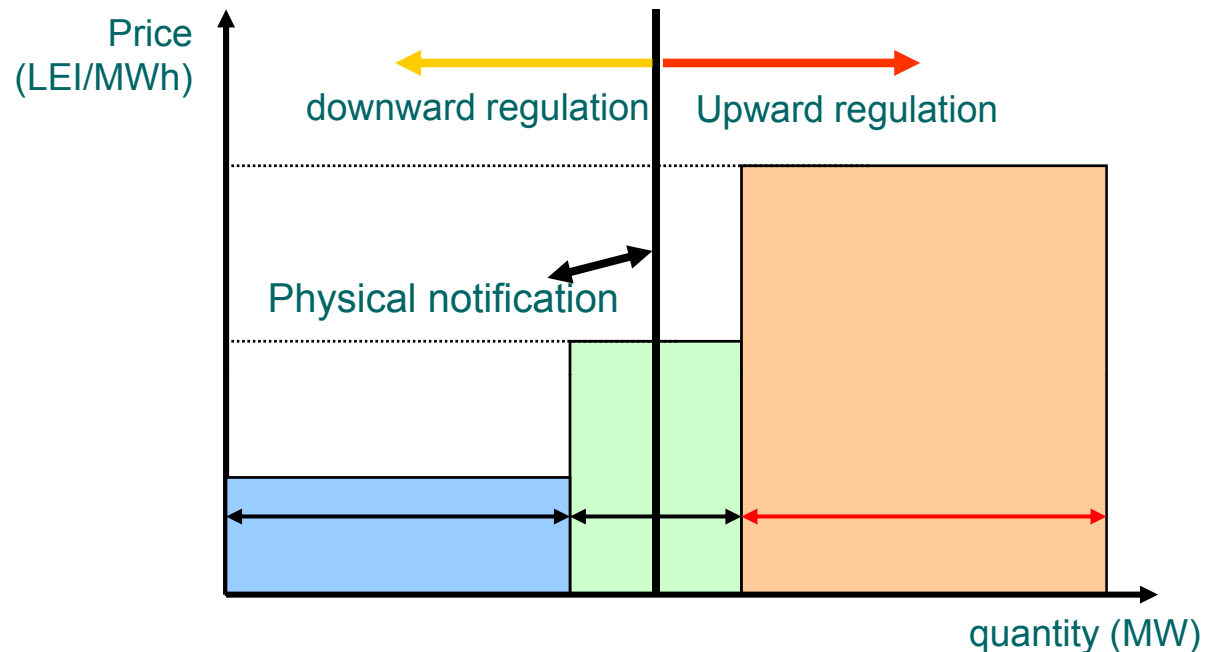


A balance responsible party (BRP) is a licensed party registered by the TSO, being mandatory for all market participants to assume the balancing responsibility, meaning to maintain the equilibrium

$$\text{generation} + \text{buy} = \text{consumption} + \text{sell}$$



BM: Bidding



- ✿ There is a unique offer for all types of reserves (secondary reserves, fast tertiary reserves, slow tertiary reserves)
- ✿ It is mandatory to submit offers for each dispatchable unit
- ✿ An offer can contain up to 10 pairs price-quantity
- ✿ The physical notification makes the difference between upward and downward regulation.

BM: prices calculation



value of balancing energy = accepted quantities x price

$\text{Price}_{\text{BM}} = \begin{cases} \text{offer price (in case of fast tertiary energy and slow tertiary energy)} \\ \text{marginal price (in case of secondary reserve)} \end{cases}$



imbalance = measure - contract

BRP pays to TSO for the negative imbalance

quantity x deficit price *



BRP receive form the TSO the payment for positive imbalance

quantity x surplus price*

* The imbalance price is calculated as weighted average price from the accepted offers for upward/downward regulation

Settlement of the centralised markets

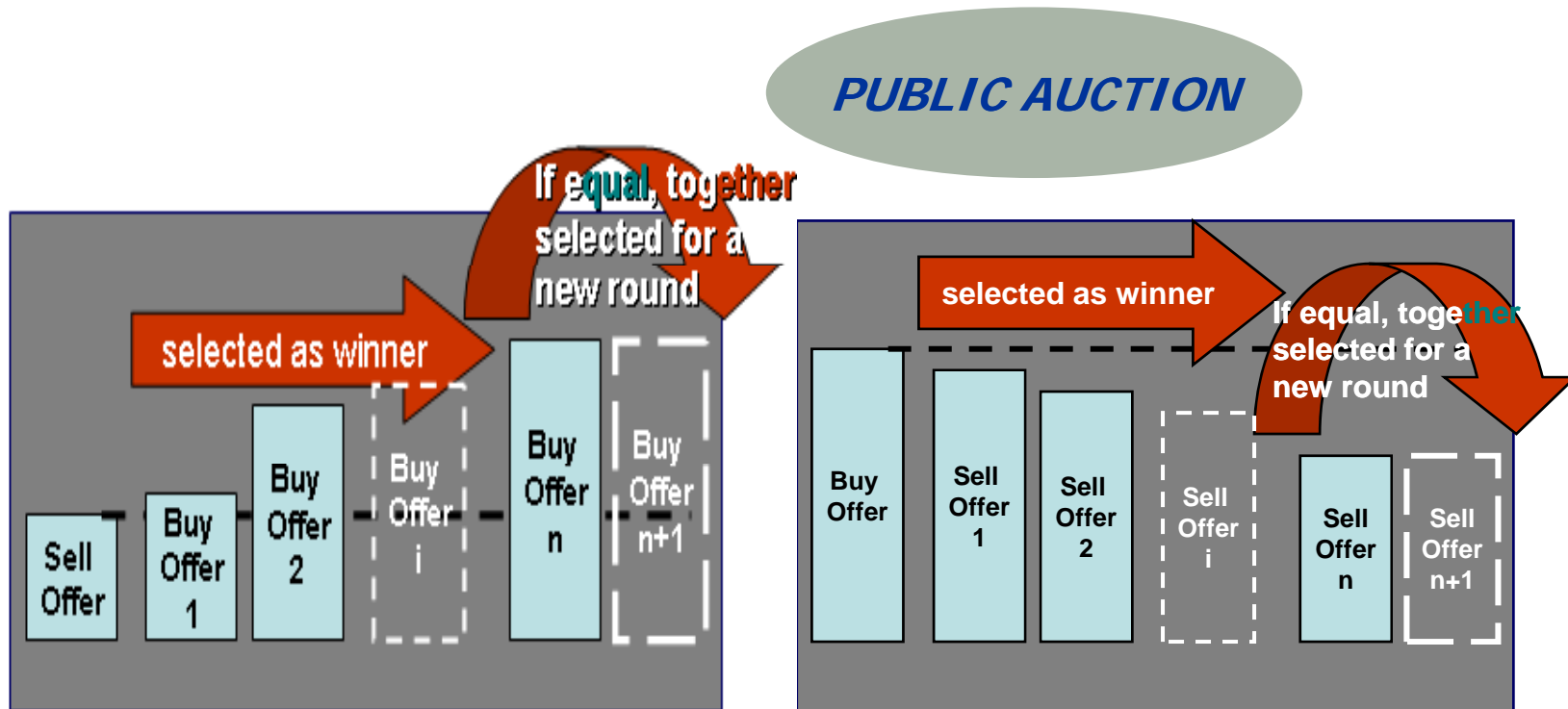


- **The settlement is performed separately for the different products**
- **Bilateral contracts is settled bilateral between buyer and seller**
- **The trade in the DAM is settled by the Settlement Operator (OPCOM)**
- **The Balancing Market transactions is settled by Settlement Operator after input from Balancing Market Operator**
- **Settlement of imbalances between contracts and metered usage of the grid is settled by Settlement Operator**

Centralised bilateral contract markets



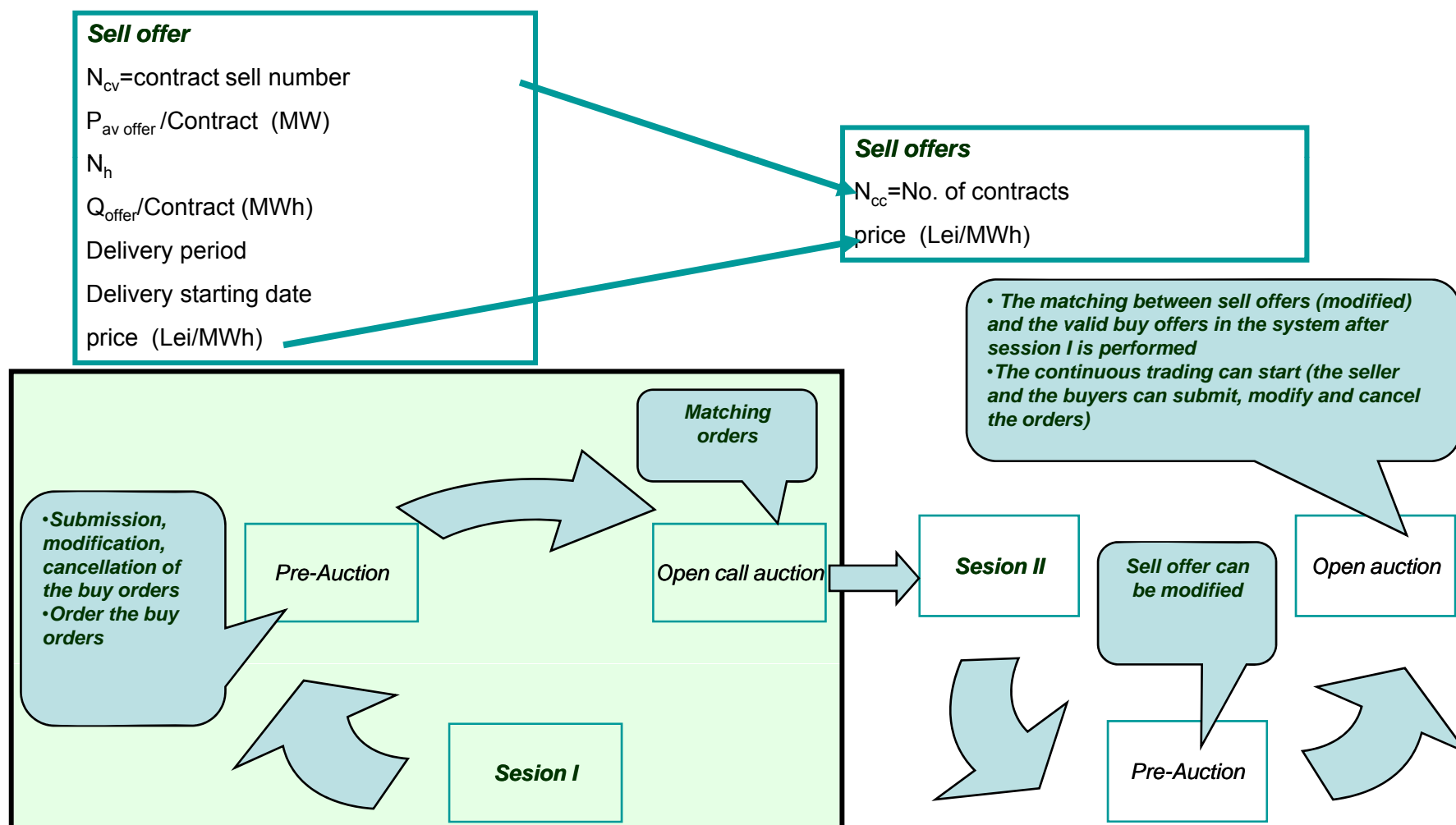
- Centralised Market for Electricity Bilateral Contracts - PCCB (since December 2005)



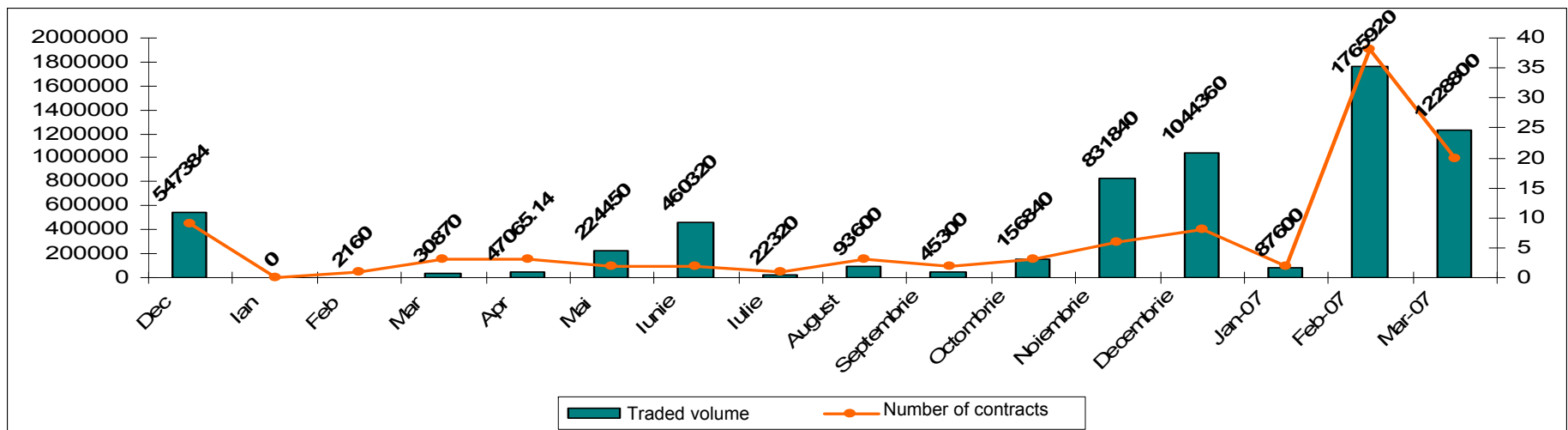
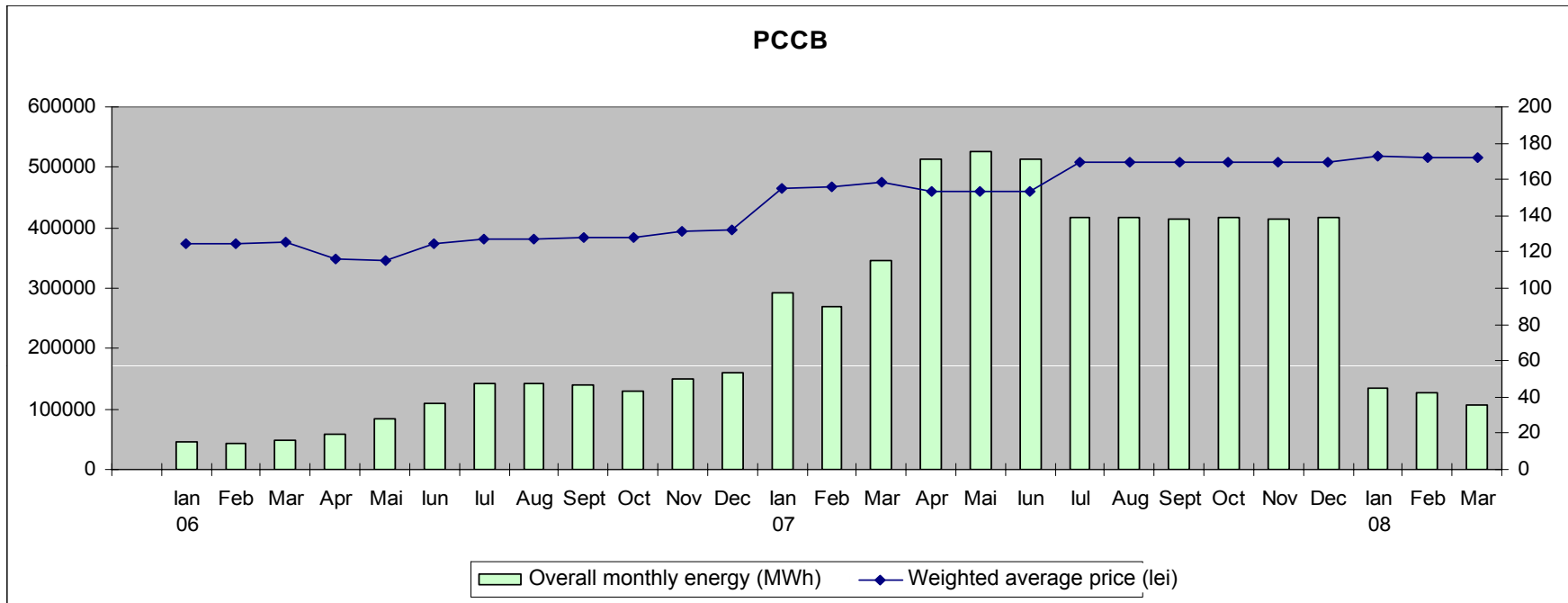
Centralised bilateral contract markets



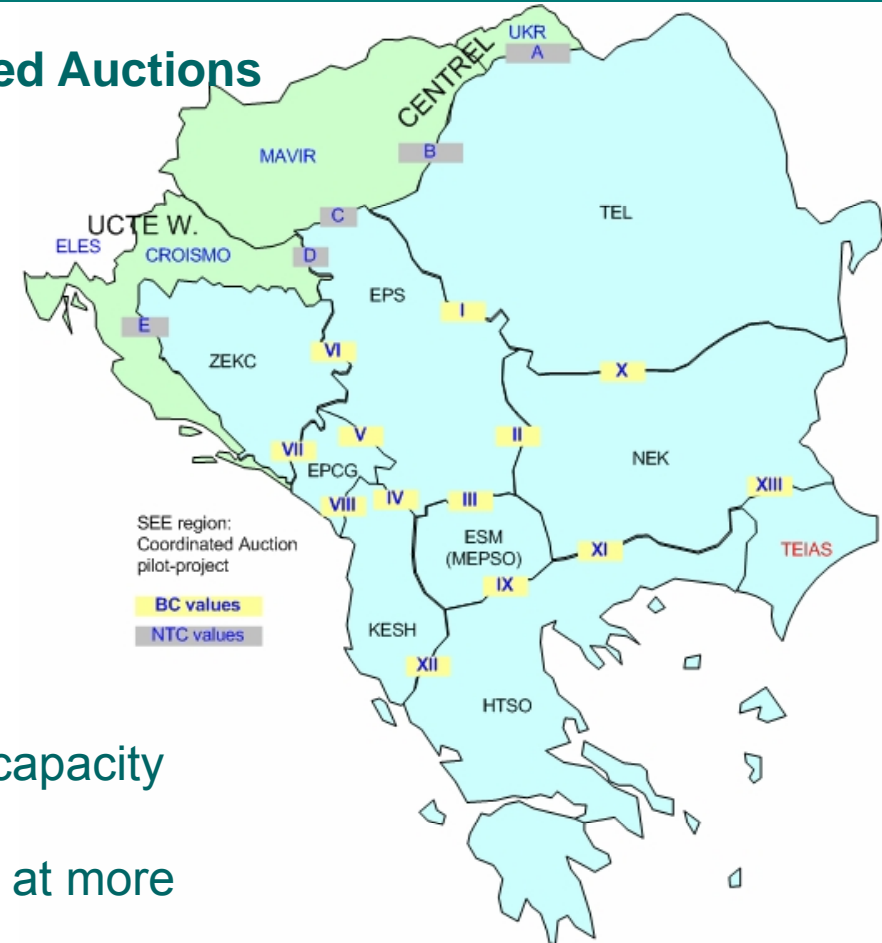
• Centralised Market for Electricity Forward Bilateral Contracts with physical delivery – PCCF (since March 2007)



PCCB: results



Dry Run of Explicit flow-based Coordinated Auctions



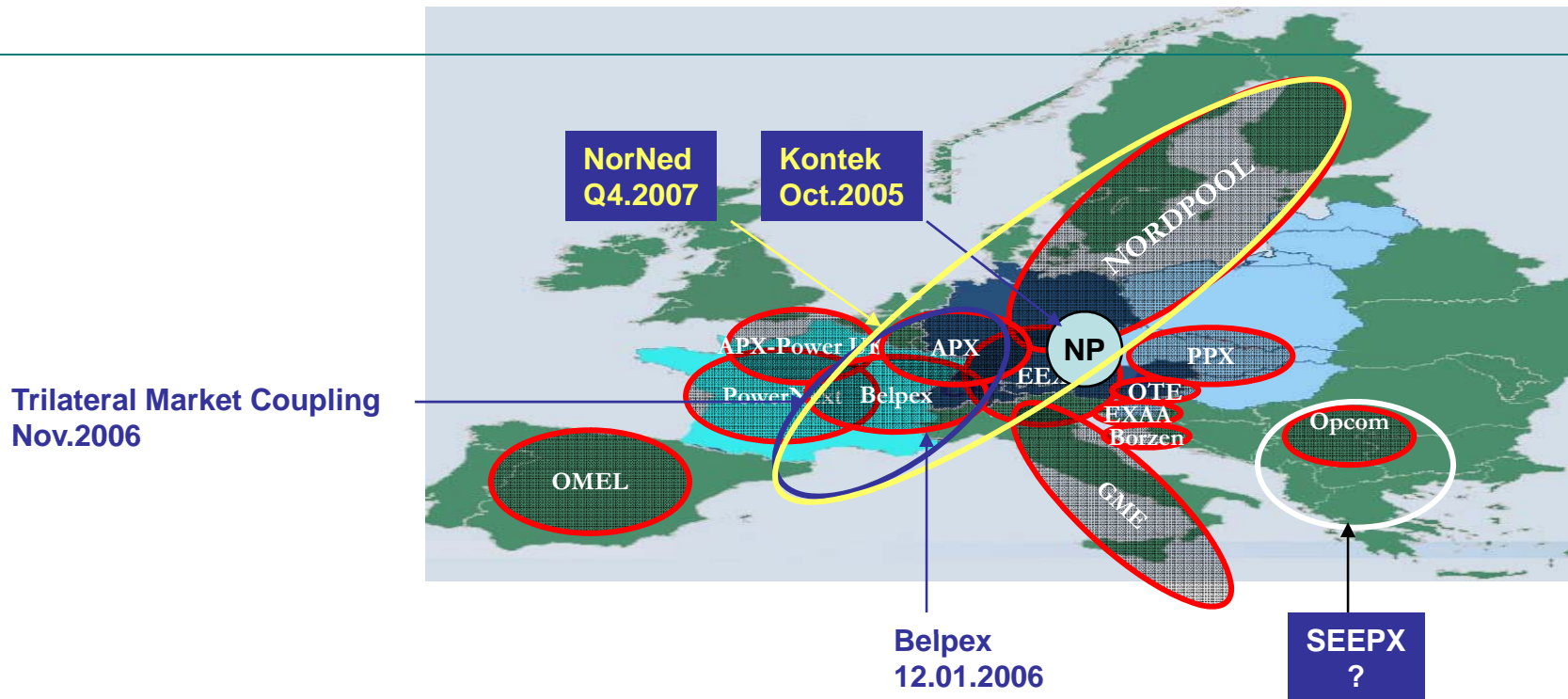
auctions (market based method)

explicit (process of allocation of transmission capacity only (MW), without electricity trade)

coordinated (simultaneous capacity allocation at more than one border)

flow-based (with considering real power flow paths (through PTDFs) originated by the transactions, and physical limitations (BC - border capacity))

The future



“Power Exchanges are also likely to have a key role in developing the Single European Electricity market by providing transparent, non-discriminatory access to electricity trading in the European Union, insuring the proper functioning of electricity markets.”

“It is expected that Power Exchanges will harmonize trading arrangements so as to facilitate the final single electricity market objective.”

DG TREN

Questions?

and THANK YOU FOR YOUR ATTENTION!

End of part II
To be continuedin the future