

Market Surveillance in OPCOM marketplace

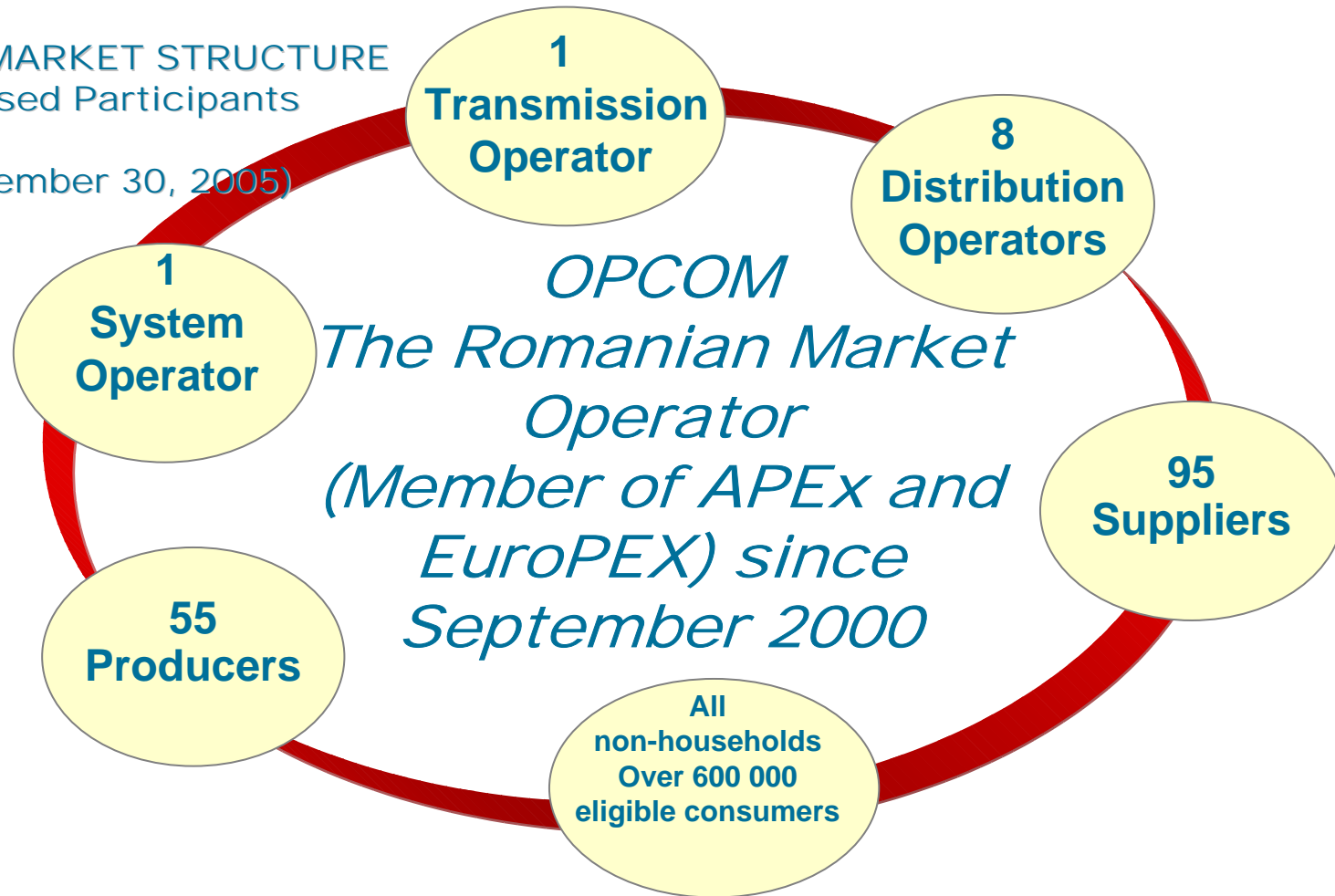
Southeast Europe Electricity Market Monitoring Workshop
October 4-5, 2005

THE MARKET STRUCTURE



THE MARKET STRUCTURE
Licensed Participants

(September 30, 2005)



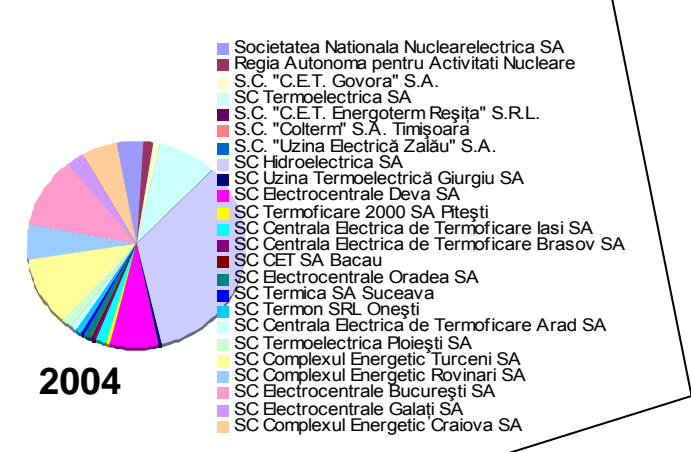
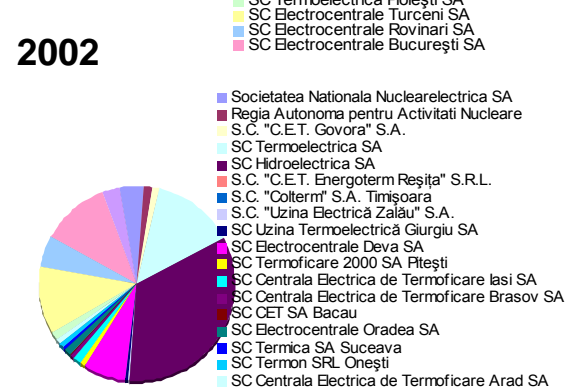
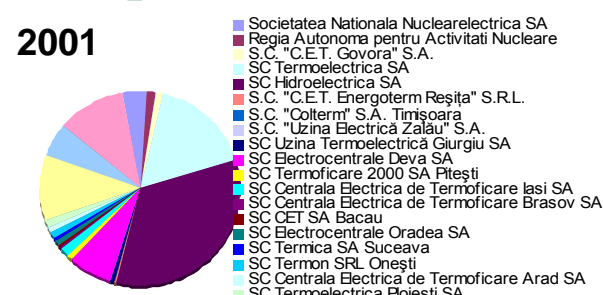
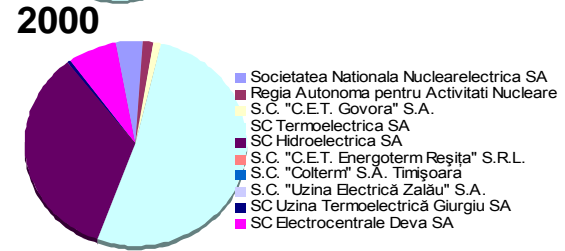
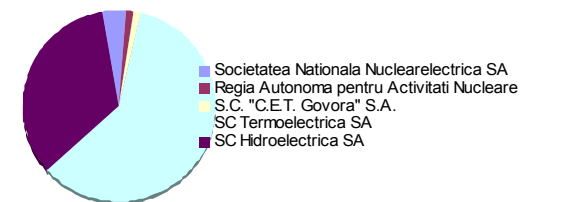
The Power Market, since July 1th, 2005:
17.5 % Regulated
83.5 % Competitive

52 DAM participants, signatories of Agreement, registered at OPCOM in September 30, 2005, with daily average participation of 27

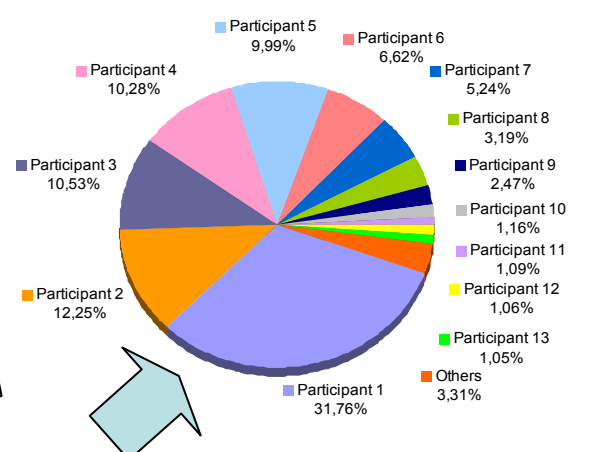
The DAM market first 11 weeks results:
8.16% market share (av.430 MWh/h)
Average price: 26 Euro/MWh

INSTALLED CAPACITY & MARKET SHARES

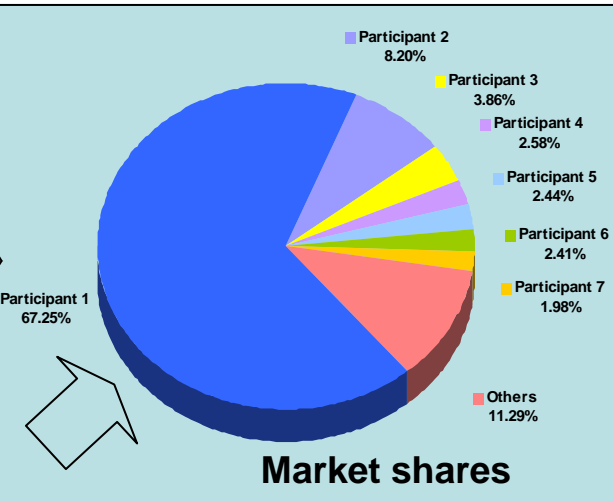
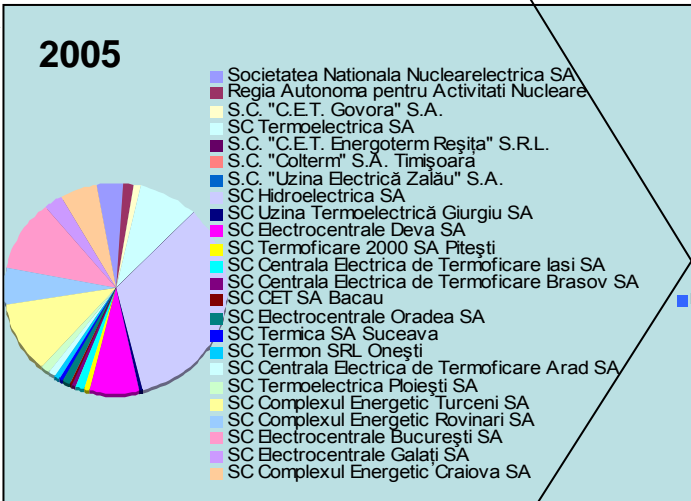
UNBUNDLING RESULTS & MARKET MECHANISMS DEVELOPMENT



Installed capacity shares

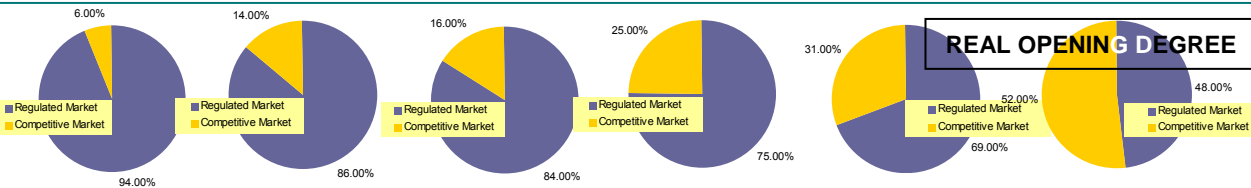


Market shares
The market shares were calculated based on the energy scheduled for each generator during 2004.

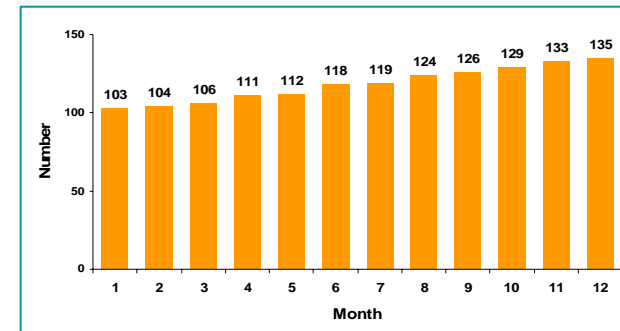
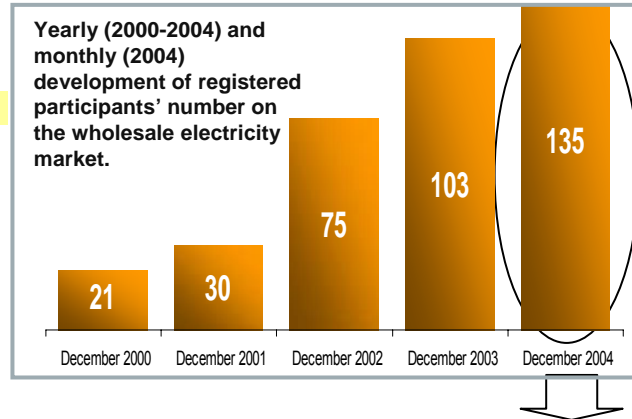
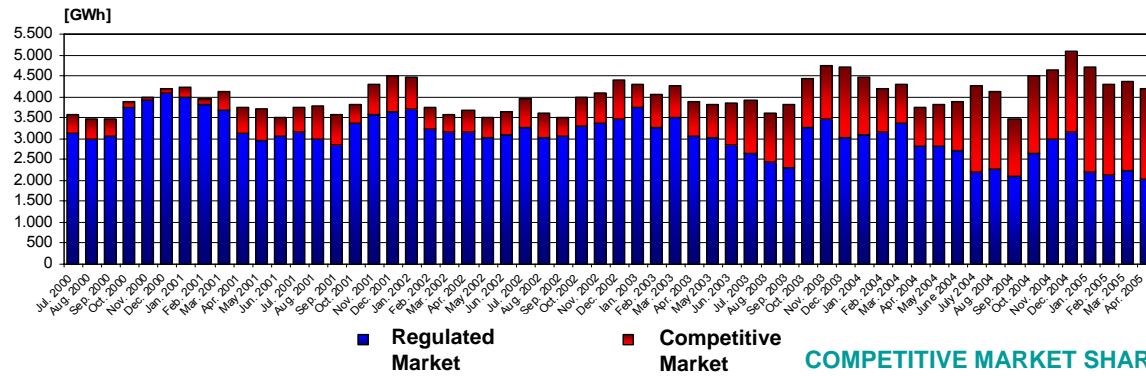


After June 30th
The market shares were calculated based on the volumes cleared in the market.

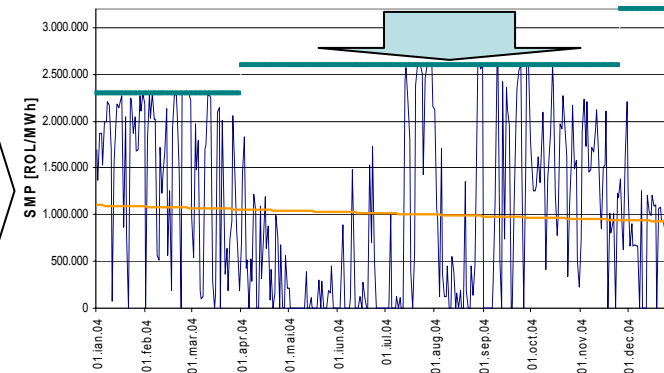
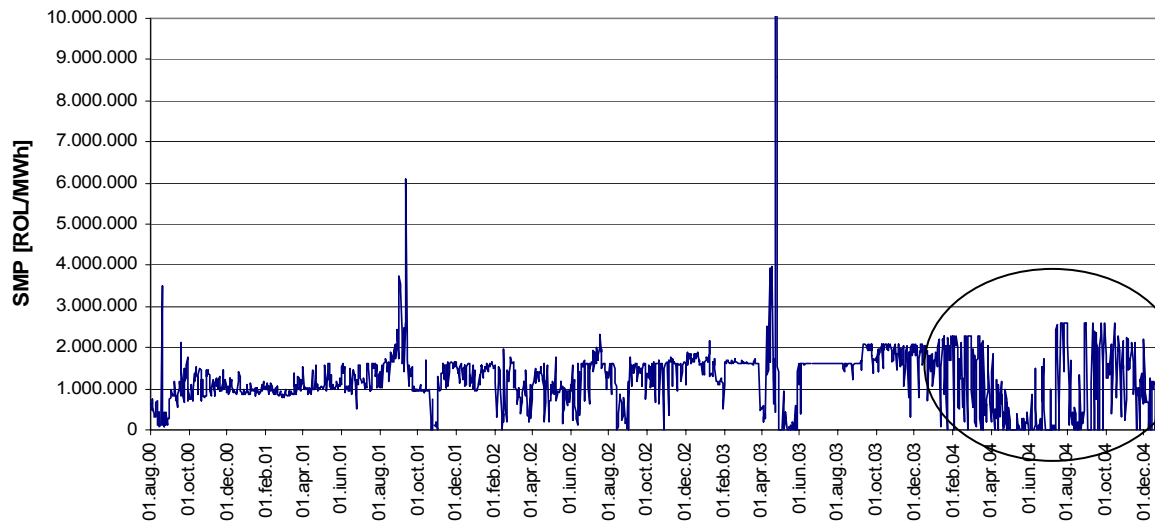
MARKET INDICATORS 2000-2005



Declared opening degree (%) : 2000 - 15 , 2001 - 25 , 2002 - 33 , 2003 - 40 , 2004 - 55 , 2005 - 83.5



PRICE EVOLUTION - THE CAP INFLUENCE



FINDINGS FROM THE PAST

MARKET SURVEILLANCE (since 2002): MARKET INDICATORS EVOLUTION

Ongoing reorganization process of SC Termoelectrica SA.
Positive evolution of the market concentration mirrored in the specific indicators: HHI versus CR4

HHI & CR4

Herfindahl-Hirschman (HHI) – market concentration degree.

$$HHI = \sum_{i=1}^n P_i^2$$

0	perfectly competitive market
0 – 1,000	reasonably competitive market
1,000 – 1,800	moderately concentrated market
1,800 – 10,000	highly concentrated market
10,000	monopoly

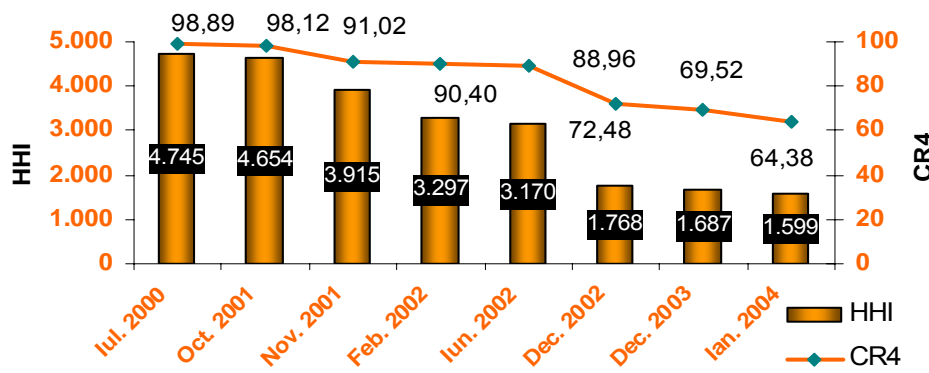
Pi: Participant's share in total installed capacity (a) and total delivered energy (b).

Four-Firm Concentration Ratio (CR4) - the extent to which the restructuring process generated competitive market participants.

$$CR4 = \sum_{i=1}^4 P_i$$

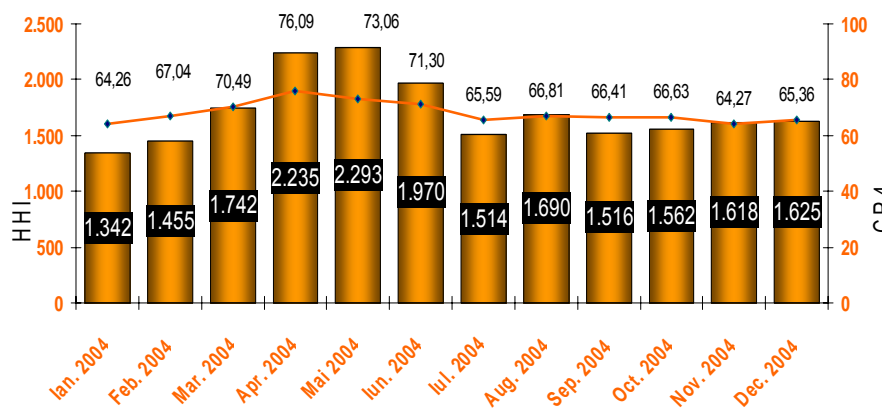
0-50%	market is considered moderately concentrated
50 – 100%	concentrated market

(a) Subsequent reorganizations



Both HHI and CR4 were calculated based on installed capacity of each generator existed in the market at a certain moment of unbundling process.

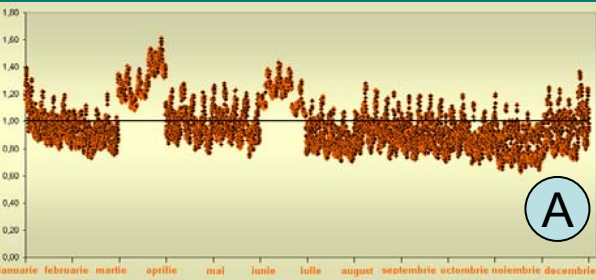
(b) Specific conditions during 2004: low level of consumption, high level of reservoirs



Both HHI and CR4 were calculated based on real output of each generator within the market.

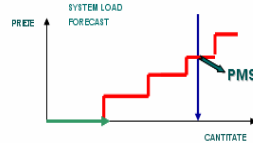
FINDINGS FROM THE PAST

MARKET SURVEILLANCE (since 2002): MARKET POWER PRESENCE



Calculation of System Marginal Price (PMS)

OPCOM aggregates sell offers and elaborates system load forecast.



Residual Supply Index (RSI) – the extent to which the supply owned by the specific producer is needed to cover market demand.

$$RSI = \frac{Cap_{tot} - Cap_j}{Demand}$$

- 0 - 1 high market power
- 1 - 1,5 significant potential market power
- 1,5 - 2 low potential market power

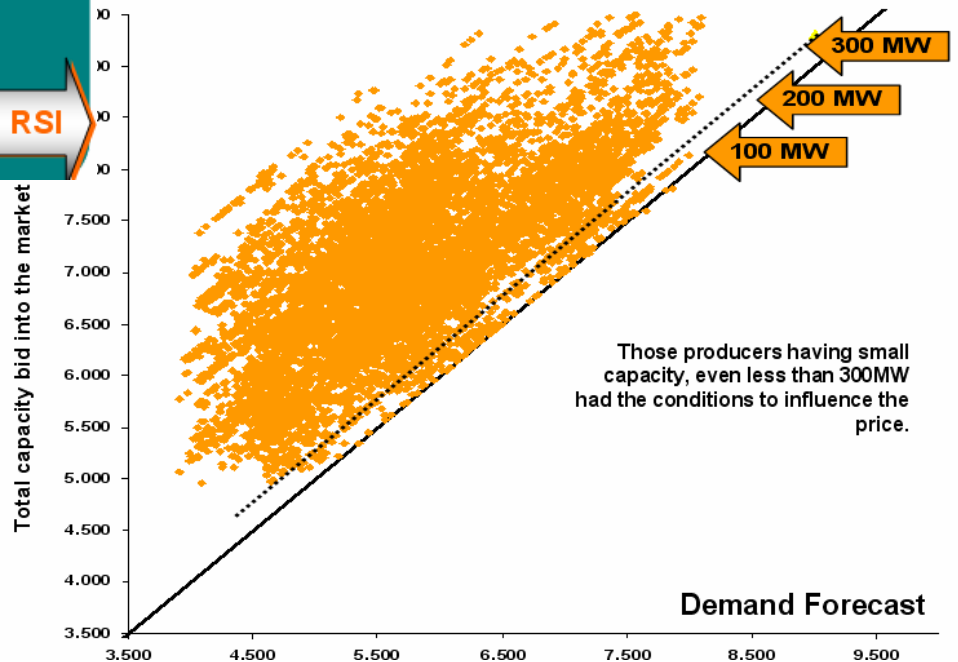
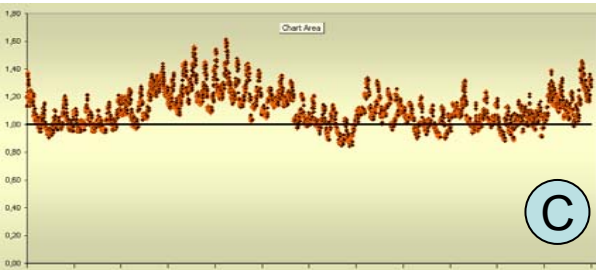
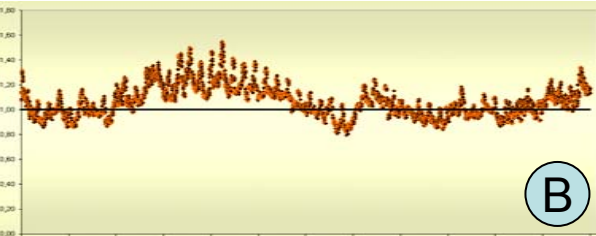
Cap_{tot} : total capacity bid into the market by each producer
 Cap_j : supply provided by the producer j
 Demand : total market demand

Dominant position under specific situations occurred during 2004.

Pivotal Producers:

RSI

RSI



Year	Pivotal Producers	Number of those hourly intervals when RSI<1	Percent of those hourly intervals when RSI<1	Minimal RSI	Percent of those hourly intervals when the pivotal producer was also price determinant
2004	Participant A	5,630	64%	0.62	3%
	Participant B	3,247	35%	0.79	21%
	Participant C	1,980	20%	0.85	3%

LEGAL SUPPORT

Commercial Code of the Wholesale Electricity Market:

Organization & Mission

“.....will be organized within distinct department, based on procedures approved by Regulatory Authority and it will be focused on the surveillance of electricity trading activities within the centralized markets administered by OPCOM.”

Requirements

- To monitor the market operation
- To monitor if the parties comply with commercial code, other rules and procedures and to identify possible breach or anti-competitive behavior
- To inform the Authority about inadequate operation of the centralized market
- If the case will be:
 - proposals to modify regulations
 - proposals to penalize participants
- To report on regular basis about: events in operation, reasons of increasing/decreasing of market clearing price
- To monthly assess the DAM functioning and the DAM participants' behavior
- To report to CEO about issues that could influence the effectiveness, compliance, integrity and confidence in market surveillance performance, also DAM efficiency and competitiveness.

GOVERNANCE

weekly Reporting to CEO, daily providing specific data weekly & monthly reporting to Regulatory Authority

OPERATION & RESOURCES

Independently of other departments
3 employees, minimum 1 person in operative surveillance

TASKS

Data and Information reporting on regular basis
Benchmarking data managing
Indicators values calculation, trends and consequences monitoring
Assessment of administrated market performance, participants' behavior monitoring

SUBJECT FOR MONITORING

Historical biddings: patterns in similar conditions
Bidding behavior's influence upon prices
Concentration and possible effects
Physical and economic withhold
Usage of market model features in connection with daily market opportunities

PUBLIC INFORMATION

OPCOM web-site as vector

PRE TRADE

Price scale, Maintenance plans (through TSO web-site link)
Hourly allowed priority generation volume as aggregated form

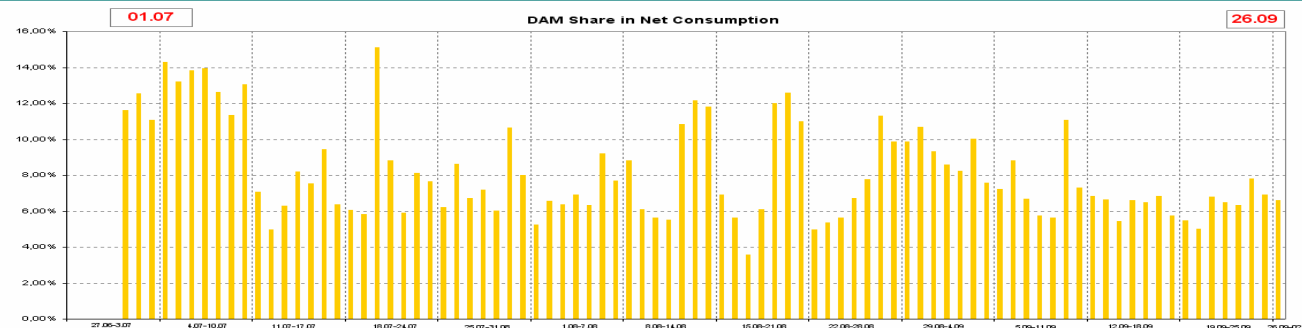
POST TRADE

Hourly aggregated matching curves
Hourly traded volumes and related market clearing prices
Hourly priority generation traded on DAM

NEW TRADING PLATFORM LAUNCH ON JUNE 30, 2005



NEW OPCOM ROLE, NEW MARKET SURVEILLANCE APPROACH

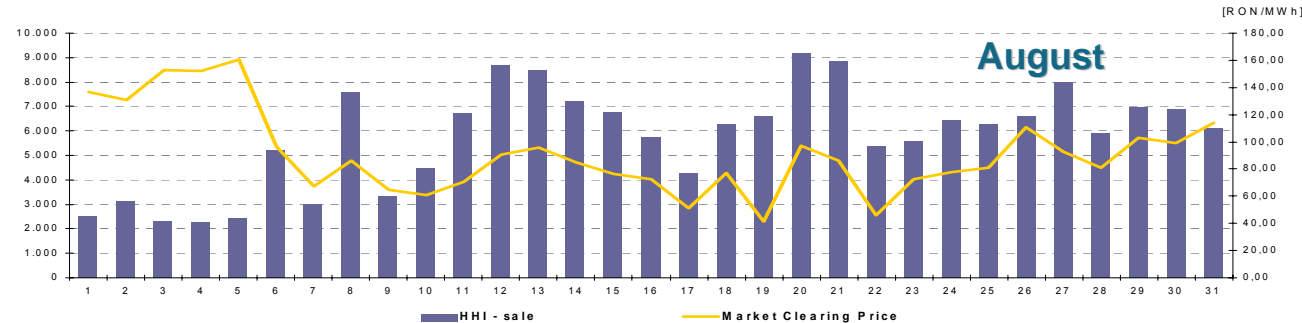
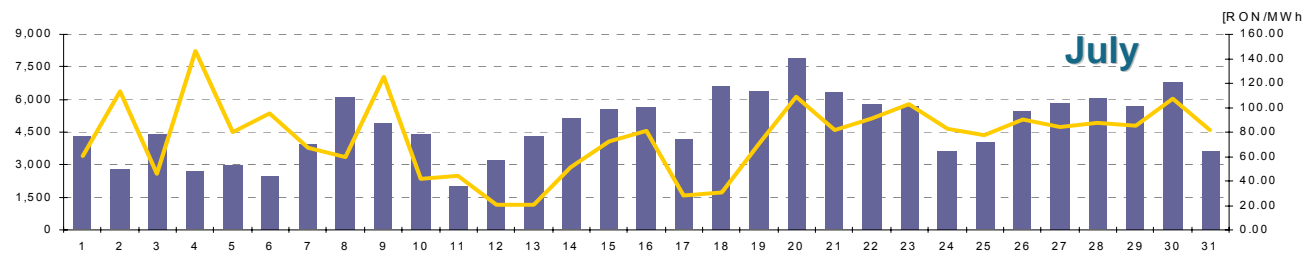


THE INTRODUCTION OF TWO SIDE AUCTION

Calculation of Market clearing Price on DAM (PIP)

➤ **OPCOM aggregates sell and buy offers.**

The diagram shows a downward-sloping supply curve (red) and an upward-sloping demand curve (red) on a graph of PRICE vs. QUANTITY. The intersection point is labeled MCP. A green arrow points to the intersection from the x-axis, and another green arrow points to the intersection from the y-axis.



Conclusion:

After five years operation: mature participants, experienced operator

After 11 weeks from new mechanism launch, a stabilised DAM, as participation, share and price

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