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New Power Market Model in Bulgaria

7-th South East Europe Energy Dialogue

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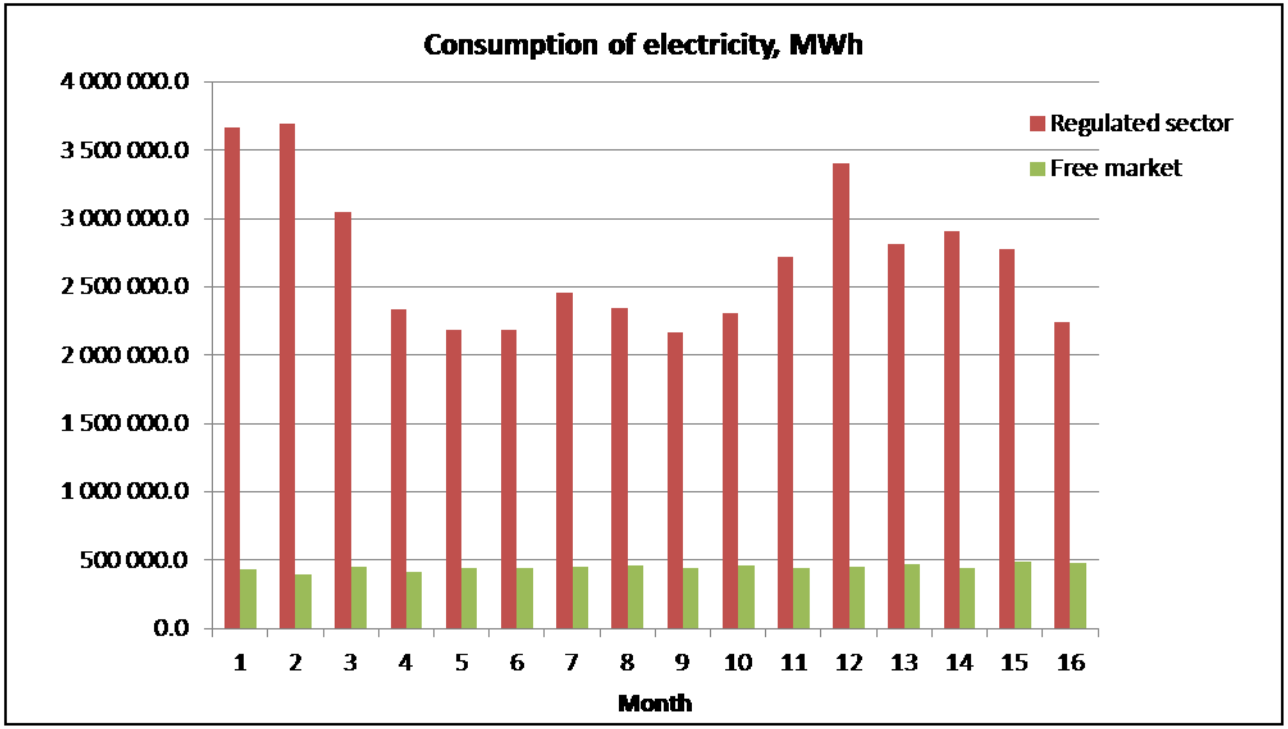
Basic Statistical Data

Показател Index	2004	2005	2006	2007	2008	2009	2010	2011	2012*
						Година/ Year			
Брутна генерация от ЕЦ към ЕПМ PP gross generation fed into transmission grid	41 539	44 259	45 710	43 093	44 831	42 573	46 260	50 070	47195
Потребление и собствени нужди от ЕЦ PP consumption and auxiliary services	6 146	6 233	5 980	6 067	5 890	5 307	4 689	6 587	6658
Нетна генерация към мрежата Net generation fed into transmission grid	35 393	38 026	39 730	37 026	38 941	37 266	41 571	44 113	40537
Физически внос Physical import	741	799	1 139	3 058	3 097	2 662	1 168	1 450	2353
Нетна генерация към ЕПМ + внос Net generation fed into transmission grid + import	36 134	38 826	40 869	40 084	42 038	39 928	42 739	45 563	42890
Загуби от пренос и трансформация Transmission and transformation losses	742	844	881	872	905	847	895	951	916
Брутно потребление от ЕМП Gross consumption from transmission grid	35 392	37 982	39 988	39 212	41 133	39 081	41 844	44 612	41974
Потребление ПАВЕЦ PSPP consumption	289	549	471	590	718	927	988	1 199	1103
Физически износ Physical export	6 620	8 380	8 391	7 538	8 441	7 731	9 613	12 111	10660
Нетно потребление от ЕПМ Net consumption from transmission grid	28 483	29 053	31 126	31 084	31 974	30 423	31 243	31 302	30211

Basic Statistical Data. Electricity consumption

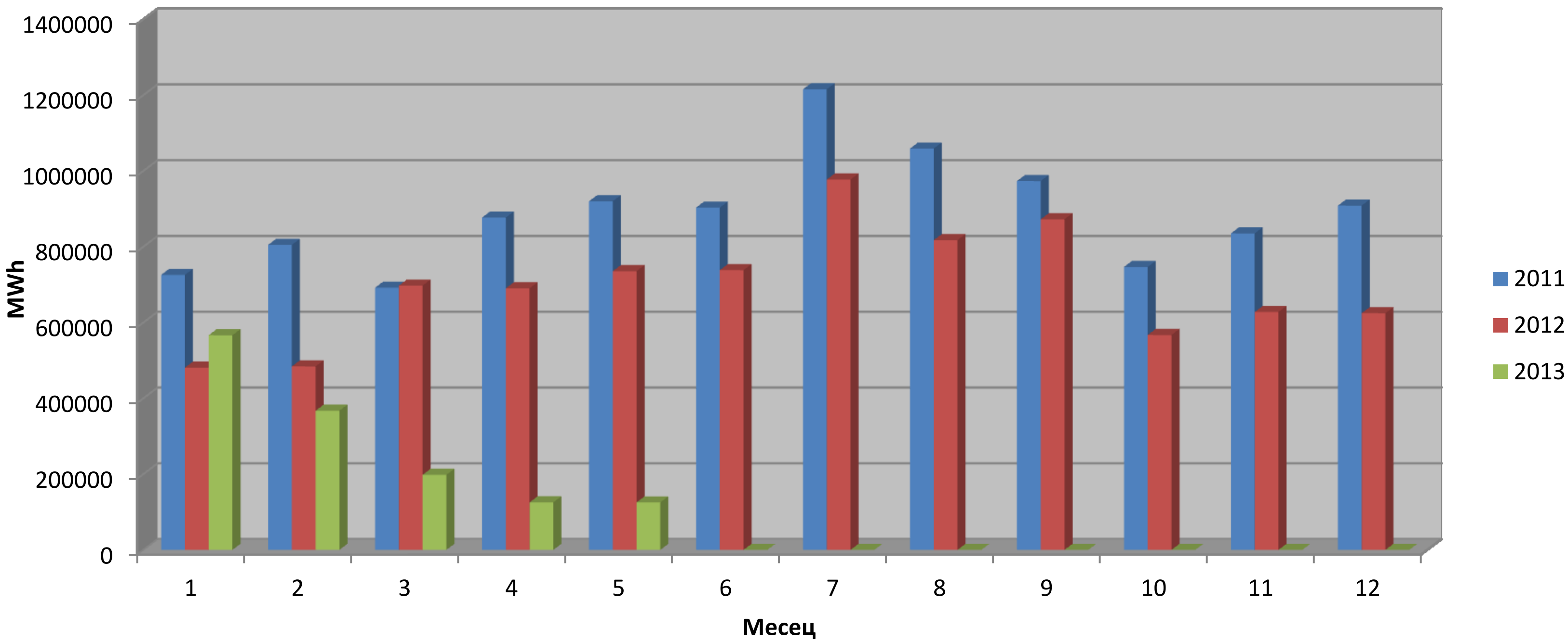


Free market
2011 - 12%
2012 - 14%
Now - 18%

Annual growth – 12 %

A rapid transition of the customers on the medium voltage from the regulated to the free market in 2013.
Regulated sector still prevails with 82% (households and small firms)

Basic Statistical Data. Export of Electricity



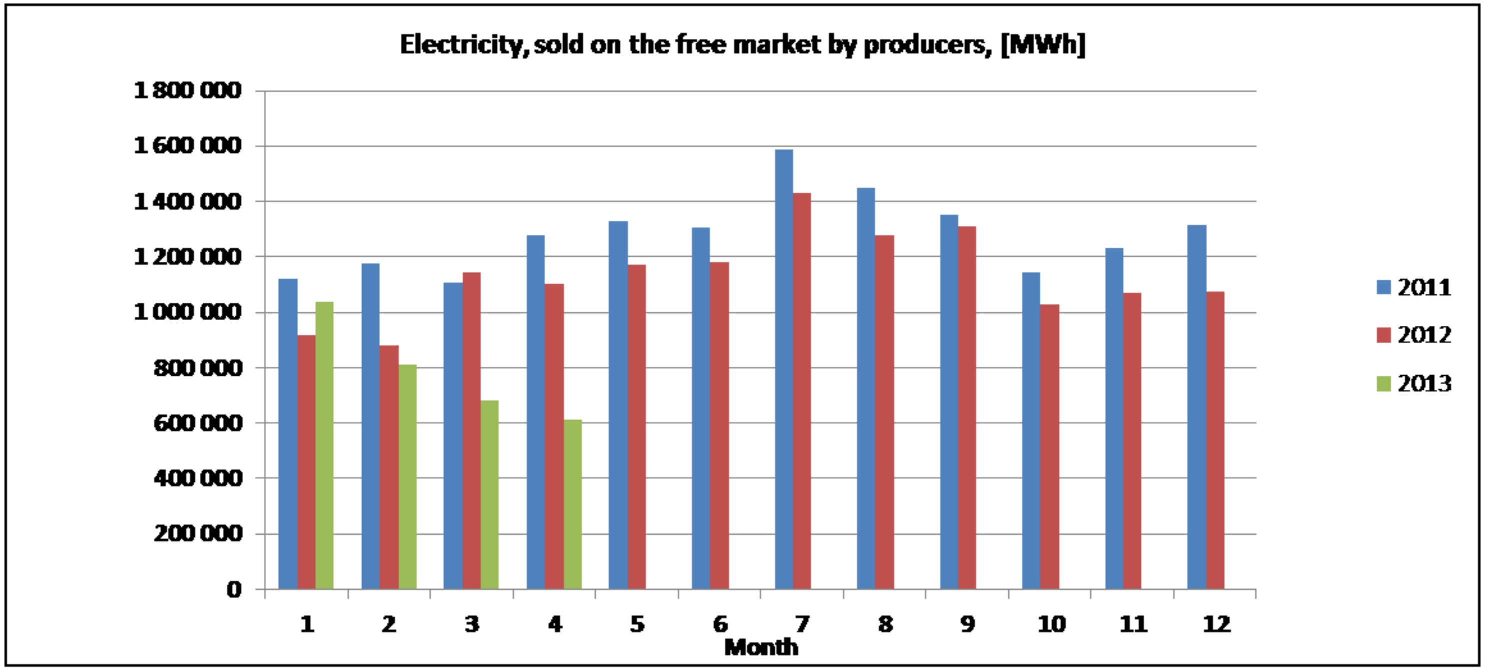
2011 – 10 659 057 MWh
2012 – 8 311 488 MWh

Annual decrease – 22 %

Serious situation in 2013:

- **Export is falling down drastically and creates problems to the producers.**

Basic Statistical Data. Producers on the free market



2011 - 15 392 759 MWh

2012 - 13 598 662 MWh

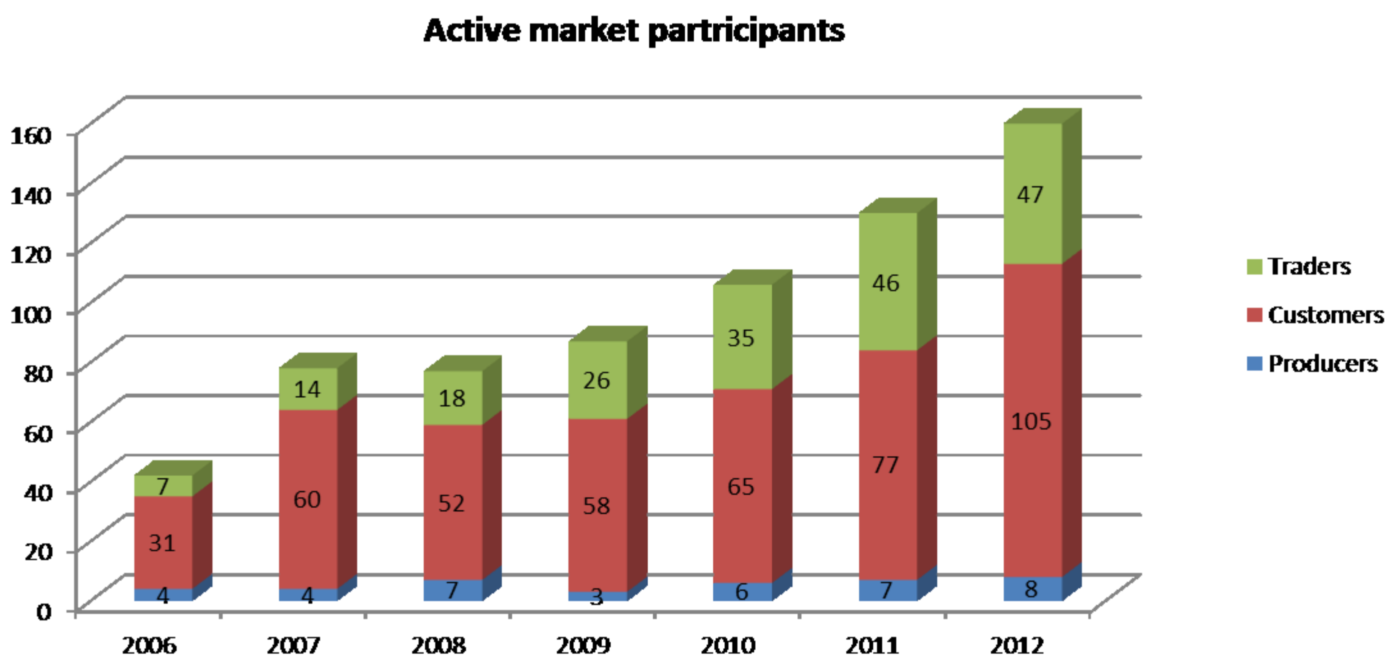
2013 – 22% decrease, compared to the previous year

Annual decrease – 11.7 %

Basic Statistical Data. Free market administration

Major elements of the present market:

- Bilateral contracts
- Transmission rights market (explicit)
- Balancing market (regulated)
- Cold reserve and ancillary services market (regulated)



Current Electricity Market Model

- Transitional period in respect of introduction of Balance Group arrangements and full implementation of the new market model

- Up to the full implementation of the new market model, registration of all standard and special balancing groups, including the balancing groups of the Public Supplier and Public Providers and implementation of balancing for all transactions – on regulated and free market – some transitional arrangements are implemented:

- Stepwise registration of standard balancing groups, comprising only consumption physical sites (customers registered on the free market).

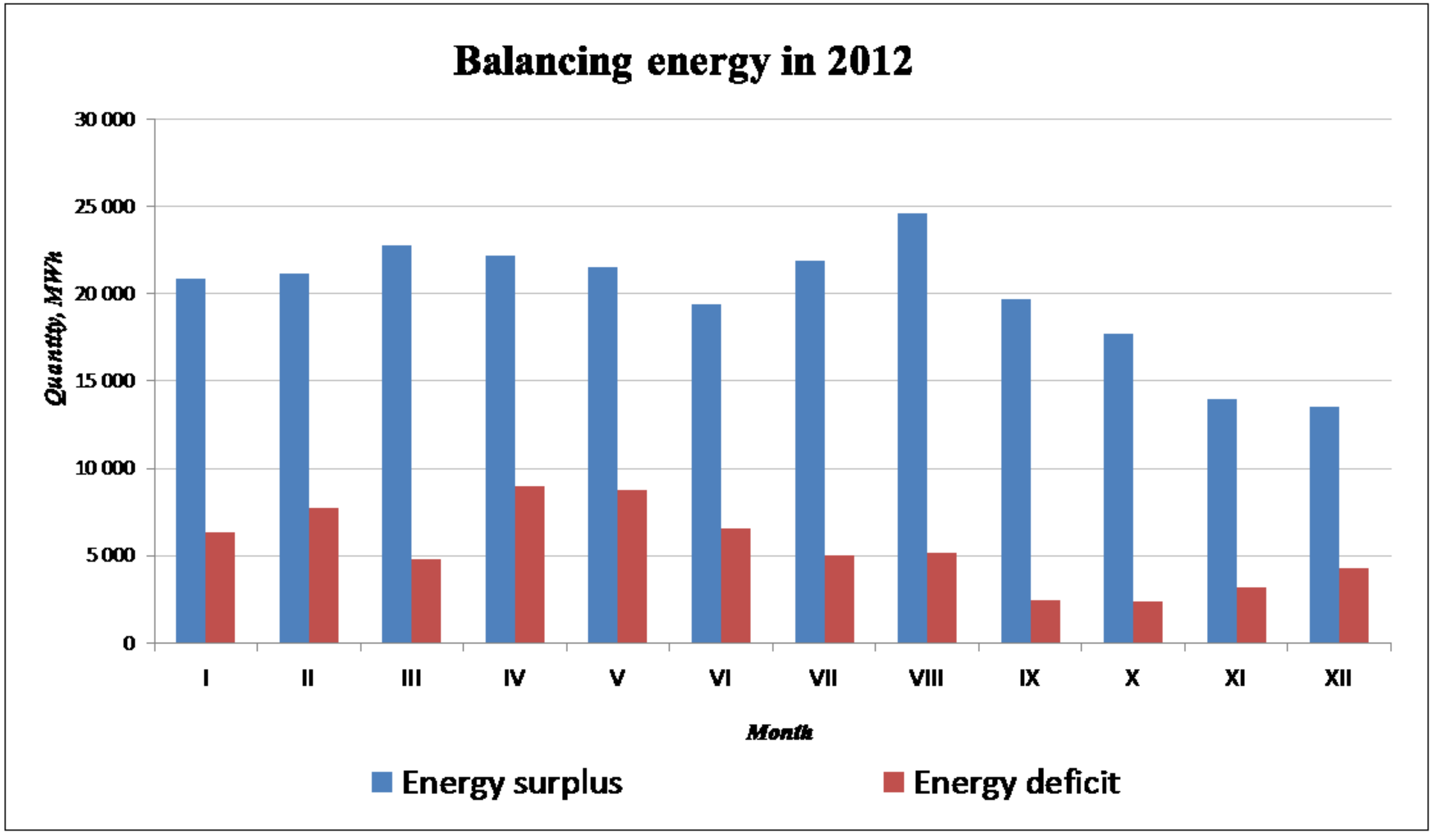
- Methodology for calculation of the imbalances and prices of the balancing energy has not been changed

Current Electricity Market Model

New market configuration – starting balancing groups from September 2012

ACTIVE MARKET PARTICIPANTS	September, 2012	May, 2013
Customers, HV, MV, LV grid (active)	88	193
Traders (active)	48	48
Generators (active)	8	8
Registered balancing groups	4	11
Members of the balancing groups (customers only)	42 (48%)	186 (96%)

Current Electricity Market Model



New configuration (balance group formation) resulted in lower imbalances. Higher effect on energy surplus (fall down more than 30%).

Deficit - decreased about 15 – 20%

New Energy Legislation

1. **Law for Renewable Energy Generation**
2. **Energy Law** – amendments are approved and in force as from June 2012
   a. ESO will become the Independent Transmission Operator and owner of the transmission assets
   b. Regulated market shall comprise only the enterprises connected to the LV grid and the residual customers
   c. All responsibilities and obligations in respect of the Regulation 714/2009/EO and Directive 72/2009/EO are foreseen
3. **New Market Rules** – in force as from July 2011. The day ahead market and balancing market are not implemented yet, but in 2011 - the "dry run" period started

New Electricity Market Model

New market model in line with the new Electricity Market Rules

The new organization of the market should provide:

1. **Notification of hourly schedules in D-1 for all transactions notwithstanding at regulated or freely negotiated prices**

2. **Introduction of balance groups.**

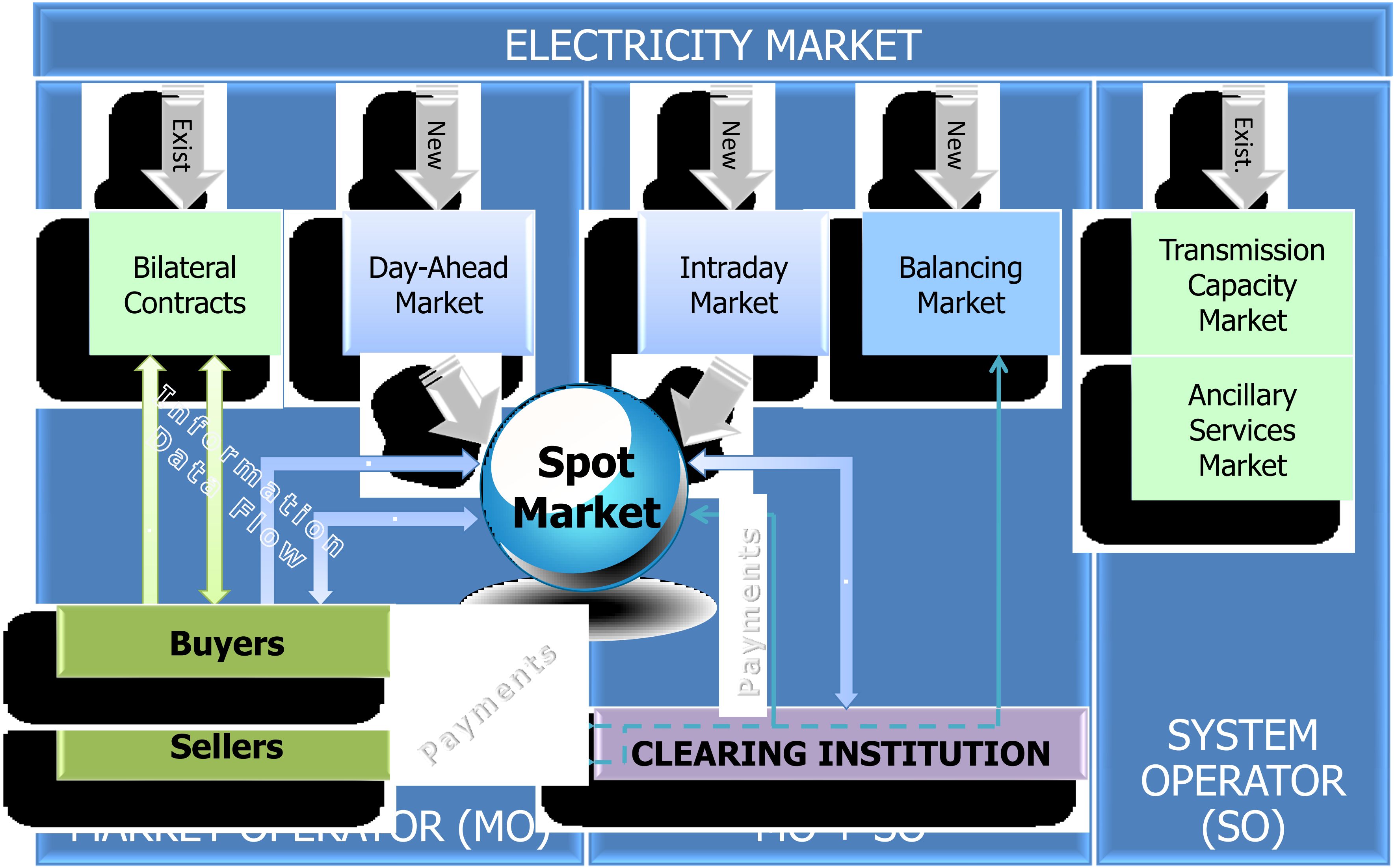
3. **Introduction of market mechanism in the balancing market – separation of the energy, sold by the generator to the market, from the energy, used by the Operator for regulation.**

4. **Regulation of the terms and conditions for participation of RES generators in the market.**

5. **Regulation of terms and conditions for operation of an organized Day Ahead Market (power exchange).**

New Electricity Market Model

New electricity market structure



New Electricity Market Model

New market model in line with the European Trends and new Electricity Market Rules

As of January 2011 – parallel work in line with the current and the new market model

Financial settlement and payments – in line with the current model

As from April 2012– start of the tests with the "Day ahead market" module

Transition to real work in line with the new model – after licensing of all balance responsible parties and accomplishment of all stages of the testing period

Analysis of the Dry run process

61 balancing groups registered for the testing purposes

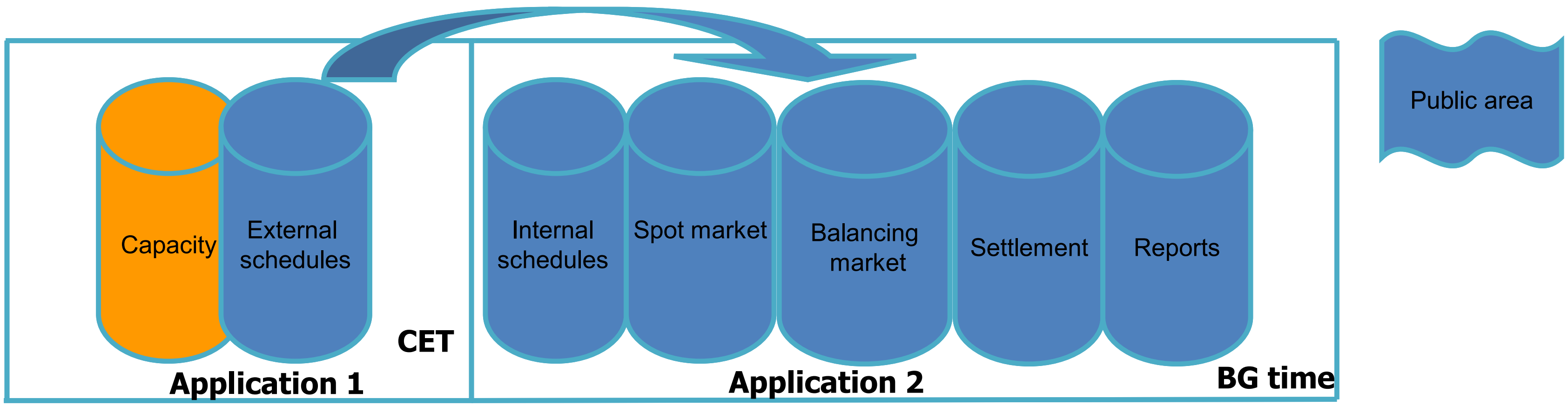
All generators, connected to the HV grid provide gross schedules for day D

All BRP provide net schedules for exchange with other BGs

The imbalances of the biggest balancing groups of Discos – in range up to 5% for deficit and surplus, with exception of the balancing group (grid) with the biggest wind farm location (E.ON grid) – up to 20% imbalances

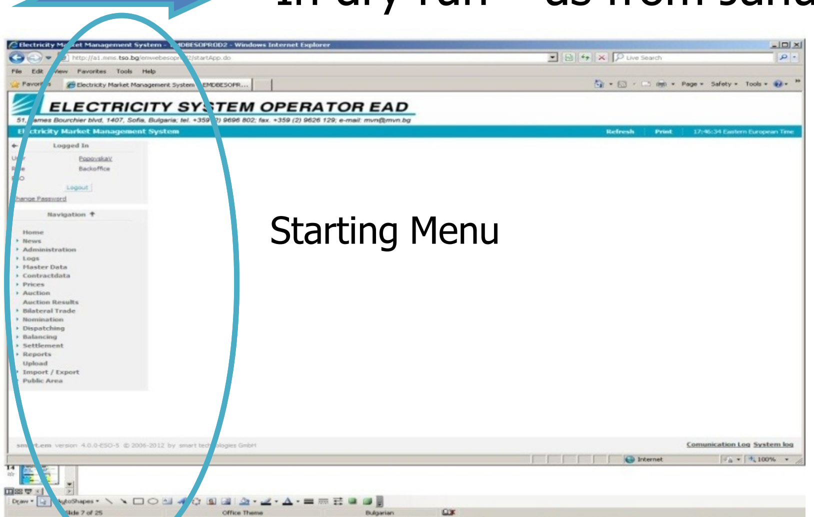
New Electricity Market Model. Implementation of MMS

Modules of Market management System



In real implementation – July 2010

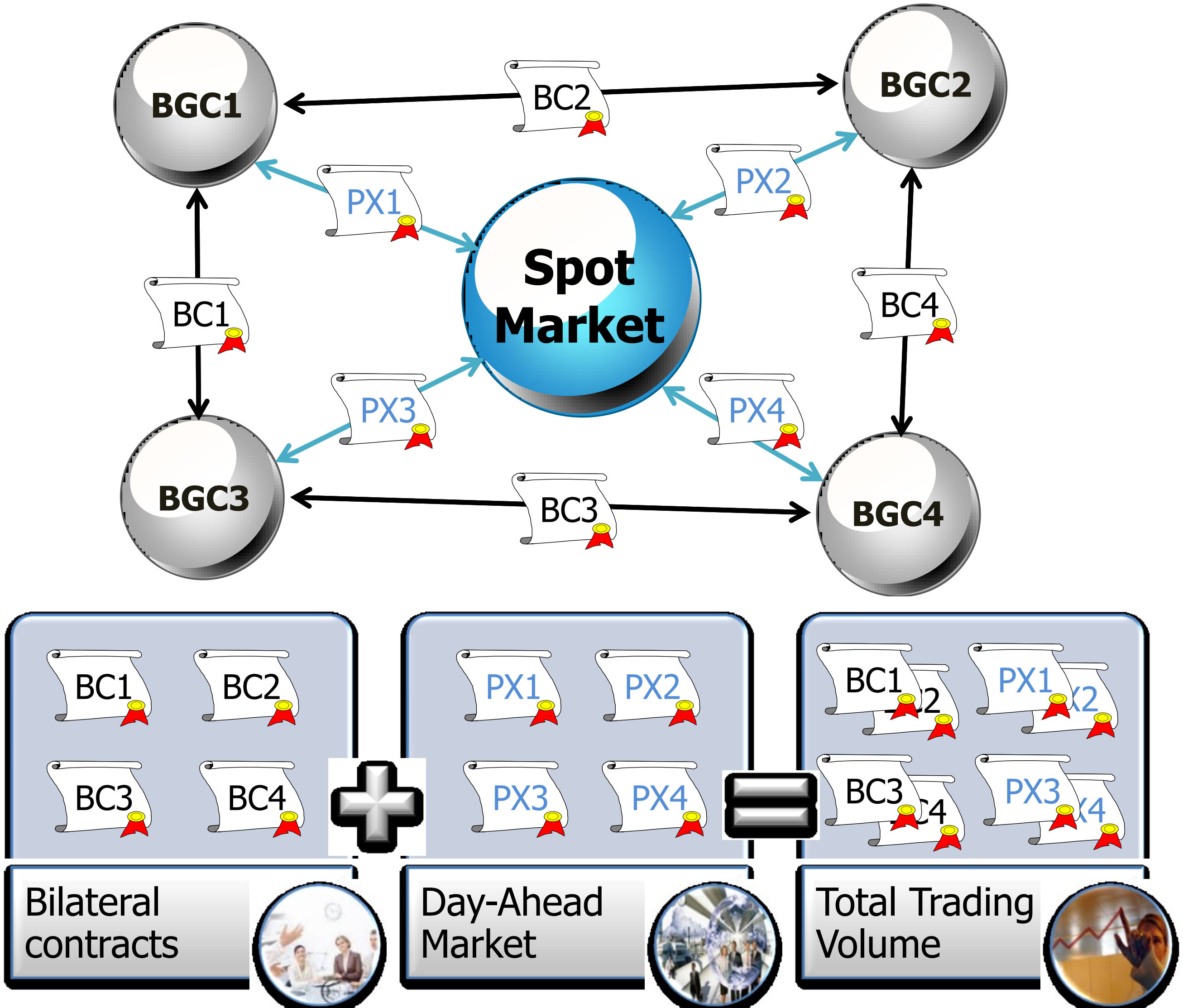
In dry run – as from January2011



ESO is the only Operator in Europe, who implements one integrated system for administration of all market segments

New Electricity Market Model

Day ahead market role



New Electricity Market Model. Day ahead

Day ahead market test results summary

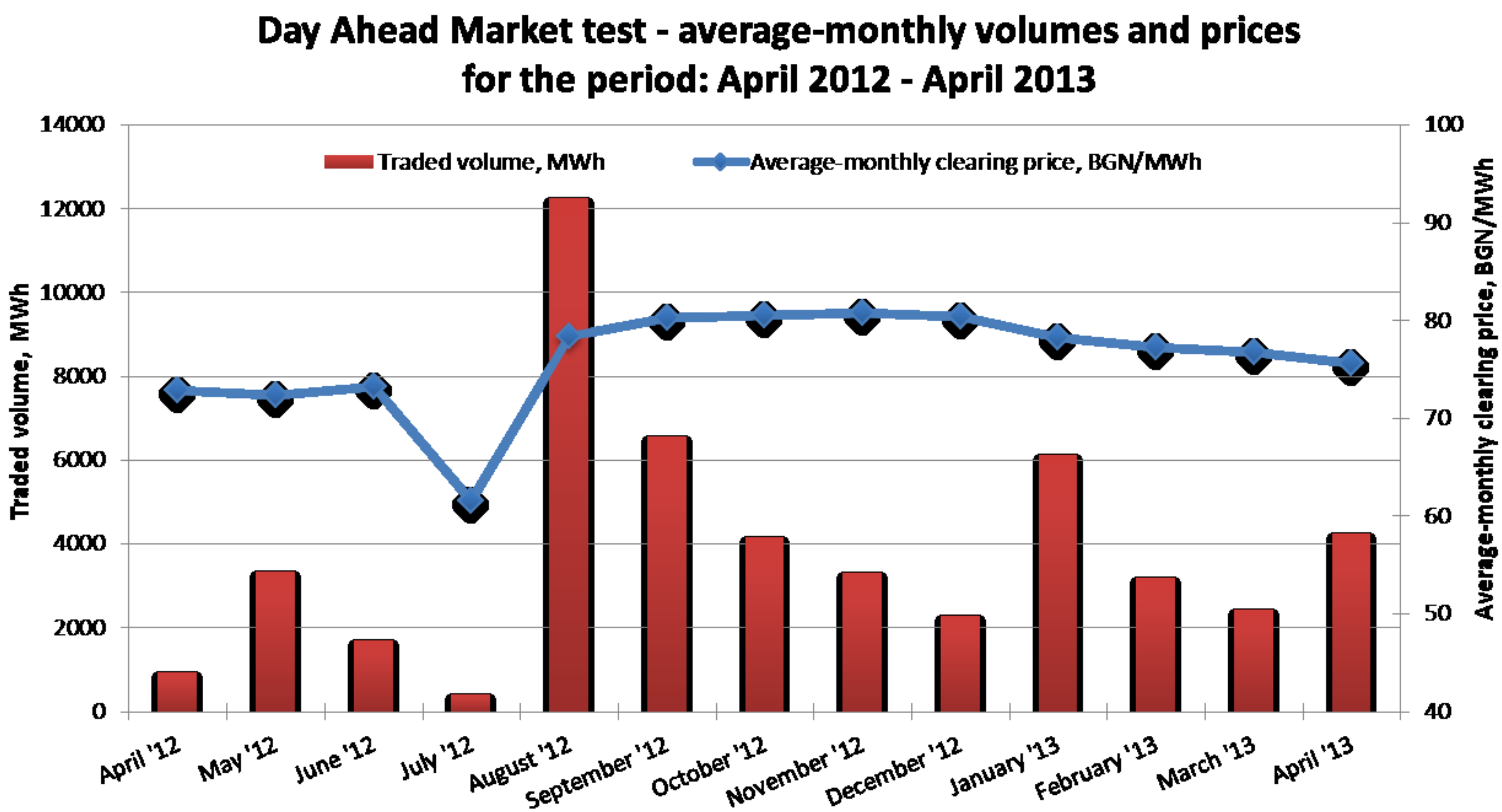
- ✓ Dry run - as from 03 April 2012.
- ✓ Average number of participants: 9.
- ✓ Traded volume for a month: 4162 MWh.
- ✓ Average price for the period: 76,5 BGN/MWh.
- ✓ As from 06.08.2012 NEK participates in the dry run process as Market Maker. As a result the traded volume has been increased as well as the market clearing price, due to the higher demand.
- ✓ Regular monthly reports to Regulator and Ministry.
- ✓ Public tender is announced to select a financial institution to manage the transactions on the day ahead market.

New Electricity Market Model. Day ahead

Day ahead market test results summary

Month 2012 /2013	Traded volume, MWh	Average-monthly product prices, BGN/MWh			Day Ahead Market active participants
		Base (0-24)	Peak (7-22)	Offpeak (0-6;22-23)	
April 2012	921	72,80	73,44	71,51	12
May 2012	3 344	72,41	72,03	73,18	10
June 2012	1 678	73,30	74,13	71,64	8
July 2012	390	61,57	61,95	60,82	5
August 2012	12 249	78,32	78,41	78,13	8
September 2012	6 552	80,25	80,76	79,23	9
October 2012	4 157	80,52	81,52	78,51	8
November 2012	3 316	80,72	81,48	79,18	10
December 2012	2 289	80,44	80,96	79,41	8
January 2013	6 131	78,12	78,80	76,59	7
February 2013	3 178	79,90	76,74	74,50	8
March 2013	2 422	76,69	78,21	73,66	8
April 2013	4 240	75,68	76,11	74,84	7

New Electricity Market Model. Day ahead

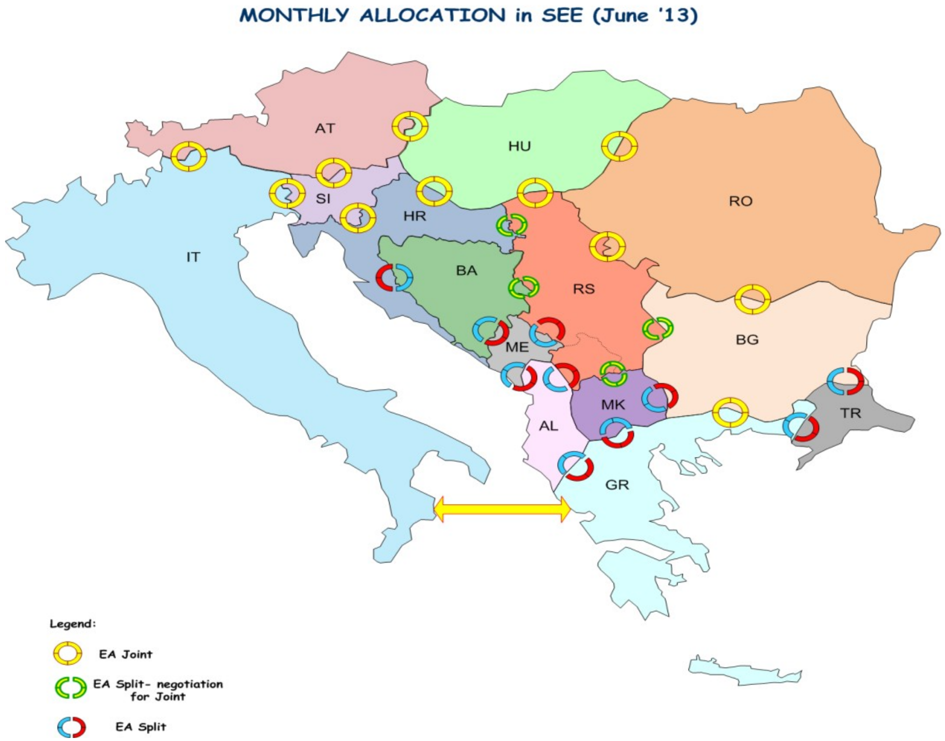


Regional market. SEE regional group of ENTSO-E

There is a successful joint activity in the South East Energy Region, especially in the process of creation of coordinated procedures for allocation of transmission rights.

The last document of the group: **Harmonization of methodology and procedure for ATC/NTC calculation for different timeframes** was unanimously accepted by the group in May 2013.

Bulgaria has common auction rules with Greece and Romania and is in the process of negotiation with Serbia.



Regional market. Bilateral Activities

On 30 November 2010 the "Ministry of economy, energy and tourism" of Bulgaria and the "Ministry of economy, commerce and business environment" of Romania signed a Memorandum for market coupling of the Bulgarian and Romanian markets

Expert group was established with representatives of Transelectrica, Opcom, ANRE and RO-Ministry on the one side and ESO, SEWRC and BG-Ministry on the other side

Road map for cooperation aiming to implement a common electricity market was coordinated between the parties

Four meetings of the expert group were organized

THANK YOU FOR YOUR ATTENTION

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