

**8th SE Europe Energy Dialogue, Thessaloniki, 11-12 June, 2014**



*Bulgarian Electricity Market. Current status and further development*



# TABLE OF CONTENTS

---

- Bulgarian Power System. Installed capacities
- Bulgarian Power System. Energy balances
- Bulgarian Power System. Transparency
- Free market. Real data
- New Energy Legislation
- Market structure from 01.06.2014
- Market scheme from 01.06.2014
- Management of the Power Generating System
- Degree of Market freedom



# Bulgarian Power System. Installed capacities



<b>Nuclear PP</b>	<b>2000 MW</b>
<b>Lignite TPP</b>	<b>4177 MW</b>
<b>Hard coal TPP</b>	<b>1917 MW</b>
<b>Gas TPP</b>	<b>794 MW</b>
<b>Hydro PP, incl:</b>	<b>3161 MW</b>

- Pumped storage	
-- In generation mode	1399 MW
-- In pump mode	933 MW

<b>RES, incl:</b>	<b>1737 MW</b>
-------------------	----------------

- Wind farms	679 MW
- Photovoltaics	1029 MW
- Biomass	29 MW

<b>Total</b>	<b>13 786 MW</b>
--------------	------------------

<b>Available capacity Vs. annual peak</b>	<b>9 719 MW</b>
---	-----------------



## Bulgarian Power System. Energy balances

Index	Year, GWh									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
PP gross generation fed into transmission grid	41 539	44 259	45 710	43 093	44 831	42 573	46 260	50 700	47 195	<b>43 650</b>
PP consumption and auxiliary services	6 146	6 233	5 980	6 067	5 890	5 307	4 689	6 587	6 658	<b>6 938</b>
Net generation fed into the transmission grid	35 393	38 026	39 730	37 026	38 941	37 266	41 571	44 113	40 537	<b>36 712</b>
Physical Import	741	799	1 139	3 058	3 097	2 662	1 168	1 450	2 353	<b>3 350</b>
Net generation fed into transmission grid + import	36 134	38 826	40 869	40 084	42 038	39 928	42 739	45 563	42 890	<b>40 061</b>
Transmission and transportation losses	742	844	881	872	905	847	895	951	916	<b>907</b>
Gross consumption from transmission grid	35 392	37 982	39 988	39 212	41 133	39 081	41 844	44 612	41 974	<b>37 424</b>
PSPP consumption	289	549	471	590	718	927	988	1 199	1 103	<b>1 053</b>
Physical Export	6 620	8 380	8 391	7 538	8 441	7 731	9 613	12 111	10 660	<b>9 531</b>
Net Consumption from transmission grid	28 483	29 053	31 126	31 084	31 974	30 423	31 243	31 302	30 211	<b>28 527</b>



# Bulgarian Power System. Transparency

Real time operational data on ESO EAD website: [tso.bg](http://tso.bg)

ESO EAD started in April 2013 publication of real time generation data aggregated by technologies: condense type plants, nuclear, co-generation, hydro, small hydro, wind farms, photovoltaic, biomass

Начало Карта на сайта Контакт

**ЕЛЕКТРОЕНЕРГИЕН СИСТЕМЕН ОПЕРАТОР**

ПРОФИЛ ТЕХН. ДАННИ **ДИСПЕЧИРАНЕ** ЕЛЕКТРОЕНЕРГИЕН ПАЗАР НОРМ. ДОКУМЕНТИ ИНФОРМАЦИЯ

Диспечирание > Оперативни данни > Работа на ЕЕС

**Диспечирание** **Генерация и товар на ЕЕС в реално време**

12:48:41

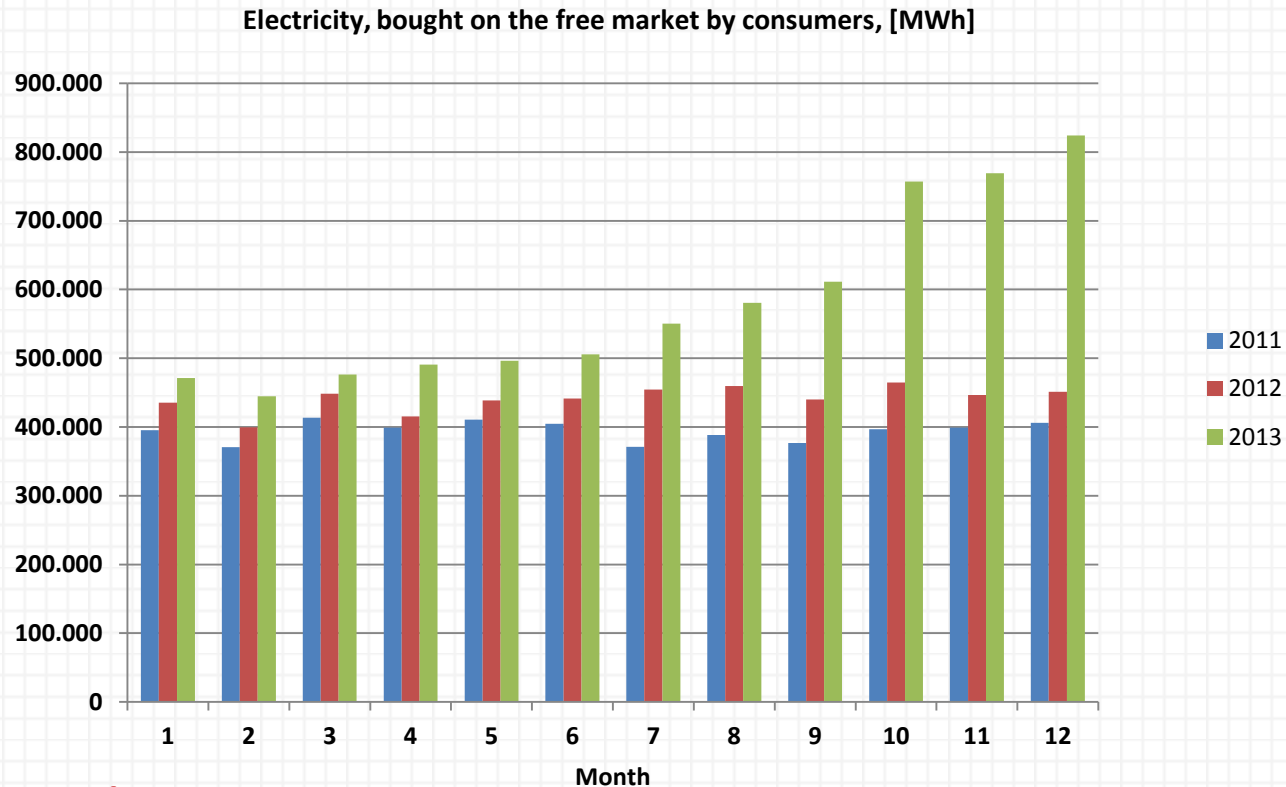
- Оперативни данни
  - Работа на ЕЕС
  - Реализирани междусистемни физически потоци
  - Междусистемни обмени - план
  - Честоти
  - Товар на ЕЕС
  - Прогноза на товара на ЕЕС
  - Използвана обща преносна способност по граници
- + Управление на ЕЕС
- + Ремонтни програми
- Календар

	MW
АЕЦ	2059
Кондензационни ТЕЦ	1497
Топлофикационни ТЕЦ	332
Заводски ТЕЦ	228
ВЕЦ	9
Малки ВЕЦ	23
ВяЕЦ	248
ФЕЦ	794
Био ТЕЦ	8
Товар РБ	4313

Публикуваните данни са оперативни.



## Free market. Real data



- Demand growth in 2012 – 12 %
- Demand growth in 2013 – 32 %
- Demand growth in 2014 > 50% (forecast)



## New Energy Legislation

---

- **Energy Law** – amendments were approved and in force as from July 2013
  - ESO became an Independent Transmission Operator from 04 February 2014 and is owner of the transmission assets.
  - Regulated market now includes only Low-voltage grid.
  - Suppliers of last Resort were created (NEK SLR, CEZ SLR, EVN SLR, E-PRO SLR).
  - “Society obligation fee” was introduced, following removal of transmission fee supplements.
  
- **Market rules** – New “**Market rules**” were published on 09.05.2014.
  - New market mechanism started from 01.06.2014.



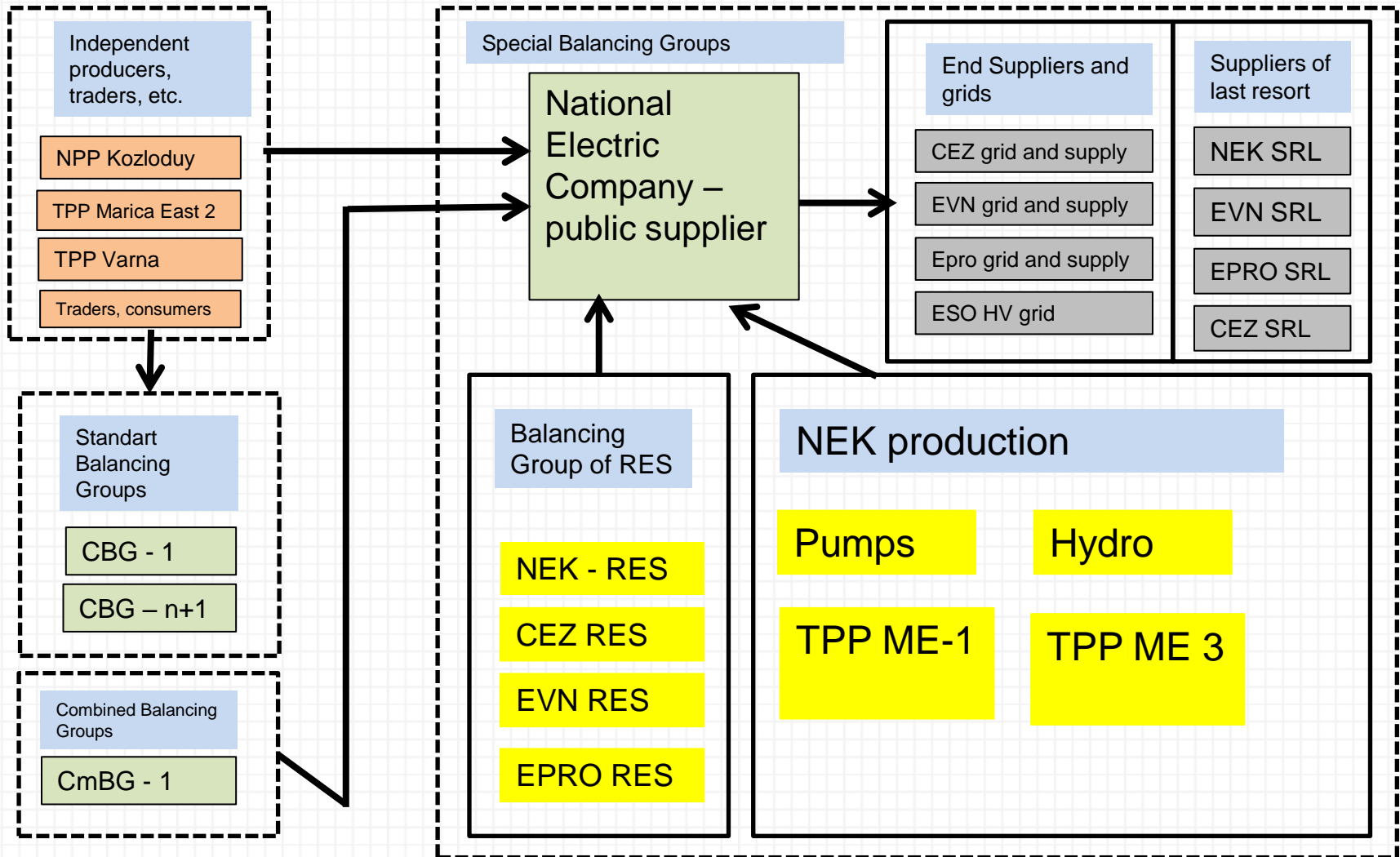
## Market structure from 01.06.2014

---

- 16 Standard Balancing Groups
- 14 Special Balancing groups
- 1 Combined Balancing Group
- 47 Balance Responsible Parties  
(producers, traders, consumers)



# Market scheme from 01.06.2014





# Management of the Power Generating System

---

- Only generators with contracts for energy, nominated with TPS (trade responsible party) schedules, can work in the system.
- All Coordinators of Balancing Groups should make a full balance of their energy inputs and outputs. Their balance will determine the Generation structure.
- Each Dispatching unit should nominate a Gross Production schedule (PPS), corresponding to his Net TPS.
- PPS will determine the working set point of the generator in real time.





# Degree of Market freedom

Activity	Liberalisation
Trade with electricity ( <i>incl. import and export</i> )	100%
Balancing Market ( <i>from 01.06.2014</i> )	100%
Generation:	
- <i>Big producers</i>	~50%
- <i>RES, TFEC and small producers</i>	0%
Consumption	
- <i>High voltage demand</i>	100%
- <i>Middle voltage demand</i>	100%
- <i>Low voltage demand</i>	1%
- <i>Grids</i>	0%



# THANKS FOR THE ATTENTION

Eng. Nikolay Iliev  
ESO EAD, Sofia, Bulgaria  
[niliev@ndc.bg](mailto:niliev@ndc.bg)