2010 Annual report

ELECTRICITY SYSTEM OPERATOR

Dear ladies and gentlemen,
Honourable partners,
Dear colleagues,

In 2012 the Electricity System Operator (ESO) continued to implement confidently its main responsibilities of optimal operation of the national power system, and securing a high level of reliability of electricity transmission and transfer via the national grid.

Our priority has been to ensure the parallel operation with the other European countries' power systems based on a high-standard grid operation and maintenance. We kept following the tradition of transparency and equal footing among all actors in the electricity market.

ESO has also been highly active on the HR development field in 2012. Our extensive effort to support a secure employment, improved flexibility and competitiveness, optimised operational efficiency as well as involvement of young and highly skilled and perspective professionals has resulted in a contract with the National Employment Agency on Human Resource Qualification Improvement and Sustainable Development, which was signed in early 2013.

Most of the year 2012 saw ESO operating in an extremely dynamic environment in both national and global terms. A logical consequence thereof was the drastic decrease of electricity consumption and export levels. This, in turn, has transpired into a number of complex issues affecting the company's management.

During the year of reference, ESO continued to pursue its established policy of systematic replacement of aged facilities at high and medium grid voltage level. The aim is to improve the transmission system's operational capacity and secure the security of supply.

The global climate changes were once again a major trial for the power system reliability and security. Despite severe weather conditions in yearly 2012, which caused crisis situations in many areas throughout the country, we still managed to cope with the emergency events without having to interrupt power supplies. The scheduled and preventive maintenance on facilities further stepped system security and as a result no significant faults have occurred.

In the beginning of 2012 we had to deal with heavy snowfalls impeding the access to our facilities on account of worsened weather situation. Nevertheless, ESO maintenance teams responded in an expeditious manner to fix all faults, without interrupting their work even during holydays. They were no occupational

accidents, our teams acted according to preset priorities and changing conditions. Despite all odds, ESO managed to keep its permanent readiness throughout the year, maintaining the power system stability and security.

We continued our comprehensive work related to the forthcoming restructuring in the power sector and ESO's unbundling from NEK, based on modern management approaches and highly skilled and dedicated input that has become a traditional feature of ESO staff.

Particular attention of our activities in 2012 was focused on the information technologies. A System for Dynamic Monitoring of HV Overhead Line Transmission Capacities was deployed at the National Dispatching Center (NDC). It won the first prize among 29 companies competing for the IT Project of 2012 Award in the "National Corporative Projects" category.

I would like to thank all of you for your dedicated and professional work that has contributed to establishing the company's reputation in Bulgaria, in Europe, and among the leading companies in the interconnected power system.

Executive Director:

Portfolio

Full name:

Electricity System Operator EAD (ESO)

Organization type:

Sole Proprietor JSC

Head office address:

105 Gotse Delchev blvd., Triaditsa District, Sofia 1404, Bulgaria

Equity holder:

National Electricity Company EAD (NEK)

Portfolio:

ESO's main priorities focus on its obligations as set out by the Energy Act and its bylaws, i.e.:

- *Control and operational planning of the Bulgarian power system;*
- *Coordinating the Bulgarian system's parallel operation with ENTSO-E member TSO's as well as the joint operation with other systems;*
- *Transmission grid operation and maintenance;*
- *Balancing market organisation.*

Strategy – activities, intentions, behaviour:

The company's goals and tasks are in accordance with the legal and administrative acts of the State Energy and Water Regulatory Commission (SEWRC) and the Ministry of Economy, Energy and Tourism (MEET), as well as with the strategic and operative objectives of BEH EAD:

- *Improved security of electricity supplies;*
- *Boosting the investment appeal of the Bulgarian power sector;*
- *Transparency and good management practices;*
- *Improved operational efficiency;*
- *Increased investment potential;*
- *Improved HR quality;*
- *Maintenance of transmission facilities in line with the technical requirements and in order to guar-antee the grid's efficient functioning.*

Managing body:

General Assembly and a three-member Executive Board

We guarantee the light for You!

Business domain

All national electricity facilities are interconnectetd and function in a single power system with a common operational mode and uninterrupted process of generation, transformation, transfer and distribution of electrical energy.

Amendments to the Energy Act took effect in 2012 to meet the third package provisions regarding power sector liberalisation. Directive 2009/ 72/EC and corresponding Energy Act amendments prescribe that transmission activities should be unbun-dled from electricity production and supply related operations. To this end, BEH hired a consultant on the NEK - ESO unbundling issues with the task to draft and implement an unbundling project and a debt restructuring project. As part of the restructuring activities, a number of meetings were held with the consultants, NEK, BEH, MEET and SEWRC (the regulator). The aim was to prepare a financial model wich would guarantee ESO's financial stability after its unbundling from NEK. SEWRC is primarily responsible for ensuring that there is a proper balance between the interests of energy companies and consumers. Therefore, the regulator should prevent any accumulation of long-term losses for regulated companies. By virtue of the Ordinance on Licensing of Activities in the Energy Sector, for a company to be licensed as an Independent Transmission Operator (ITO), it must prove its material and technical support, staff availability and qualification, as well as financial sufficiency to perform its activities in line with the license. In case the ITO does not have the required material, financial and human resources to manage its operations, the ITO will not be licensed and the European Commission is to nominate an in-house transmission operator.

ESO manages its operation by:

I. National Dispatching Center

- *Frequency, voltage, exchange and reactive power control;*
- *Operative switching to modify grid patterns;*
- *Coordination of the Bulgarian power sysyem parallel operation with other ENTSO-E member TSO systems;*
- *Contingency control operation;*
- *Post-fault recovery of interconnected stability;*
- *Providing users with grid access on an equal footing, while being in line with the pertinent power quality standards;*
- *Electricity transactions and balancing energy market administration.*

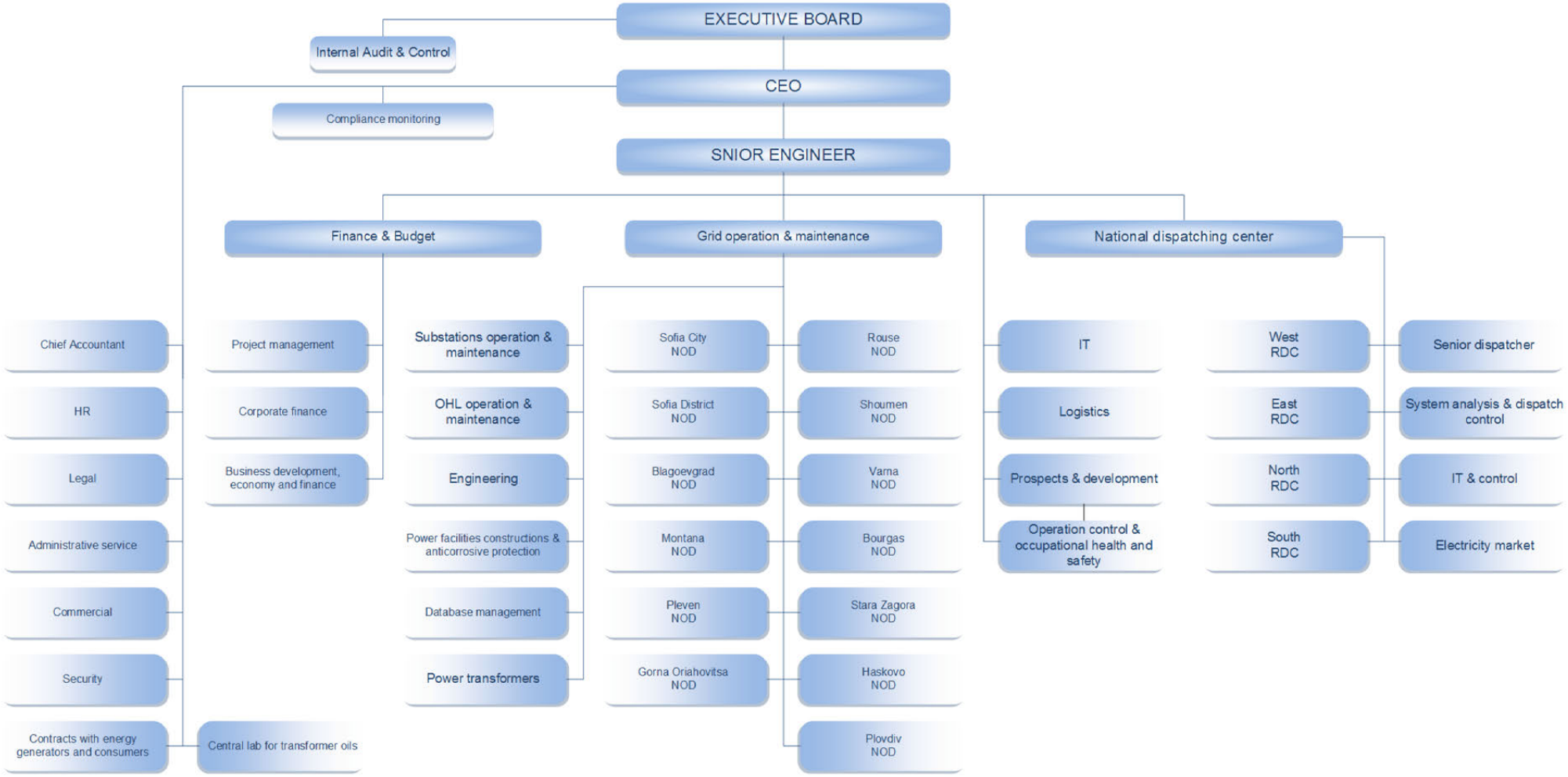
II. Finance and Budget Department

- *Organises, coordinates and supervises the activities related to the company's financial and economic development;*
- *Drafts and implements a Business Unbundling Plan (BUP) and a Debt Restructuring Plan (DRP) in accordance with the third package provisions on the unbundling of ESO from NEK.*

III. Grid Operation and Maintenance Department

- *Service and maintenance of OHLs and HV and MV substation switchgears;*
- *Periodic technical supervision of transmission facilities;*
- *Electrical metering and diagnostics of HV and MV equipment.*

Organisation Structure



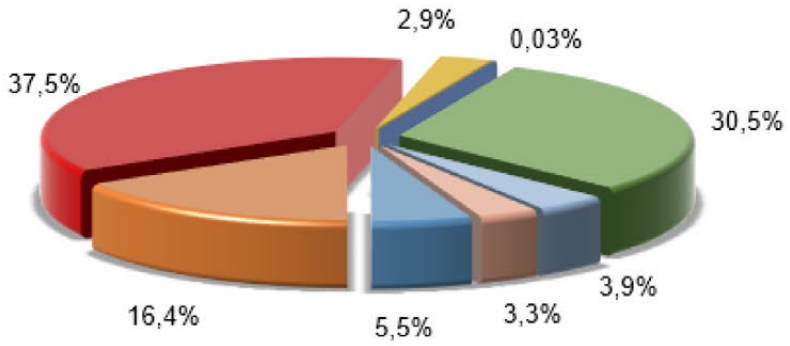
Staff & expertise

ESO staff, as approved by NEK Executive Board for 2012, numbered 3 971 employees.

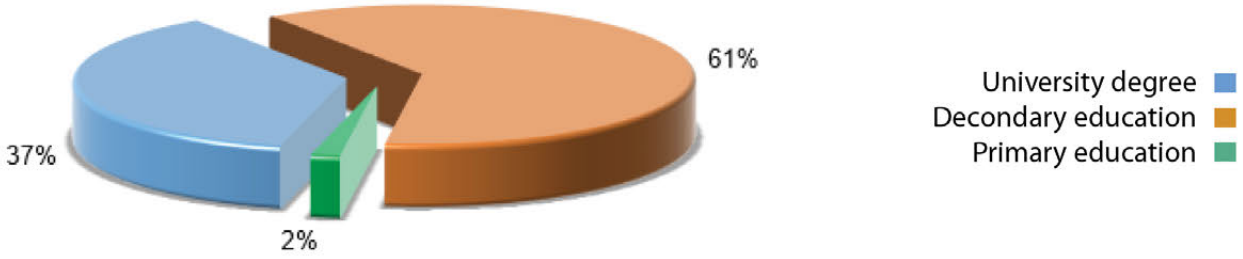
Pursuant to the main guidelines and business strategy of ESO, the trend of optimising our corporate performance and operational functions continued in 2012 as well, the main focus being to decrease the relative share of administrative staff in favour of higly skilled engineering and maintenance personnel.

The headcount 2012 numbers 3 935.

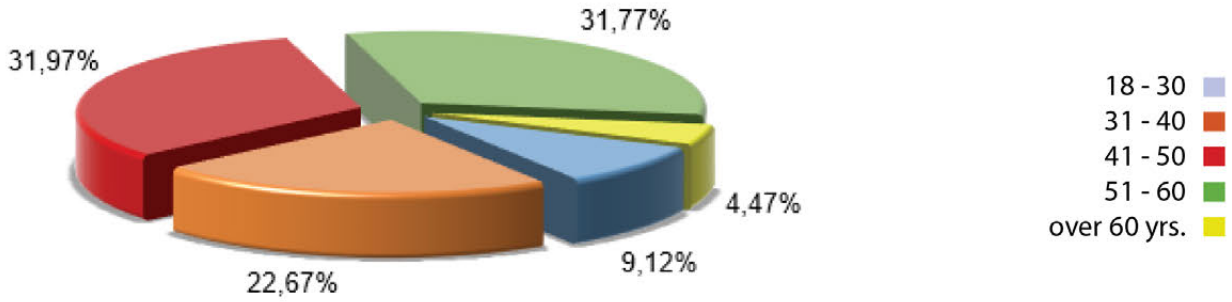
Staff breakdown by groups



Staff breakdown by education level



Age categories of personnel



Top priorities in our HR management:

- *Improve staff qualification in line with the latest techniques and technologies in the industry;*
- *Further training in the form of various special programmes - career courses and workshops organised by the Occupational Expertise Center (OEC) and external courses by well established organisations;*
- *Various detached courses hosted by the OEC in a number of specific areas and topics intended to maintain and expand the professional skills of our staff - a total of 531 persons were trained in 18 courses;*
- *Provide financial and social incentives for our employees to perform their tasks in a timely and efficient manner;*
- *Decrease manpower fluctuation;*
- *Attract young professionals*

NATIONAL DISPATCHING CENTER (NDC)

NDC operates the Bulgarian power system (PS) by cenralised system control and coordination, ensuring a secure and efficient functioning of the national transmission system and its paralel operation with the ENTSO-E's Continental Europe Sysnchronous Area. It is also responsible for oganising the electricity market.

There are four Territorial Dispatching Centers (TDC) that control the power system in their corresponding districts

Key responsibilities:

- *Real-time power system operaion;*
- *Maintain the domestic generation/load balance and the scheduled exchanges with neighbouring power systems;*
- *Centralised 24/7 control of grid voltages with minimum loses of active energy during transfer and transformation;*
- *System operation, grid and generation capacities planning;*
- *Security assessment and congestions forceast;*
- *Settings, checks and performacne analysis of relay protection and emergency control automatics at system-relevant facilities;*
- *Define the requirements for operation and control equipment of system-relevant generators and organise system trials;*
- *Draft and implement a Defence Plan (DP) and Contingency Recovery Plan (CRP);*
- *Data exchange with other TSO's;*
- *Electricity market administration;*
- *Manage ATC allocation auctions;*
- *Provide technical conditions and execute transfer schedules for agreed quantities of electricity between marker actors;*
- *Defince the technical requirements and conditions for connection of grid users;*
- *Prepare an Annual Maintenance Schedule (AMS) for the national 400 kV and 220 kV grid;*
- *Coordinate the interconnectors maintenance schedule with the remaining SEE TSO's.*

Power system operation:

- *Frequency and exchange power control;*
- *Transmission grid voltage control;*
- *Operative switching to modify grid configuration;*
- *Coordination of the Bulgarian PS parallel operation with other ENTSO-E member TSO systems;*
- *Contingency management;*
- *Post-fault recovery of interconnected stability;*
- *Providing users with grid access on an equal footing, in line with the relevant power quality standards;*
- *Adminsitering electricity transactions.*

System control principles:

- *Guaranteeing a secure, reliable and efficient functioning of the power system;*
- *Uninterrupted supply;*
- *Conformity with the ENTSO-E requirements and PS operation rules;*
- *Continuous monitoring of power plant control and operation equipment and Substation Automation Systems (SAS);*
- *Periodic system trials of power plants' capablility to provide ancillary services and implement the Defence Plan (DP) and the Contingency Recovery Plan (CRP);*
- *Parallel interconnected operation in accordance with ENTSO-E Operational Handbook;*
- *Setting up a competitive electricity market.*

Based on the long-term planning and development prospects for Bulgaria, NDC prepares a Ten-Year Network Development Plan (TYNDP) speficying the main transmission infrastructure to be built, extended and upgraded. The aim is to ensure a cost-efficient and reliable system operation while meeting the latest security criteria and power supply standards.

When connecting users, generators and distribution facilities to the transmission grid, NDC participates in defining the pertinent requirements and modalities. Where significant generation capacities are developed, NDC studies load flows, static and transient stability, edge operating conditions and controls system requirements.

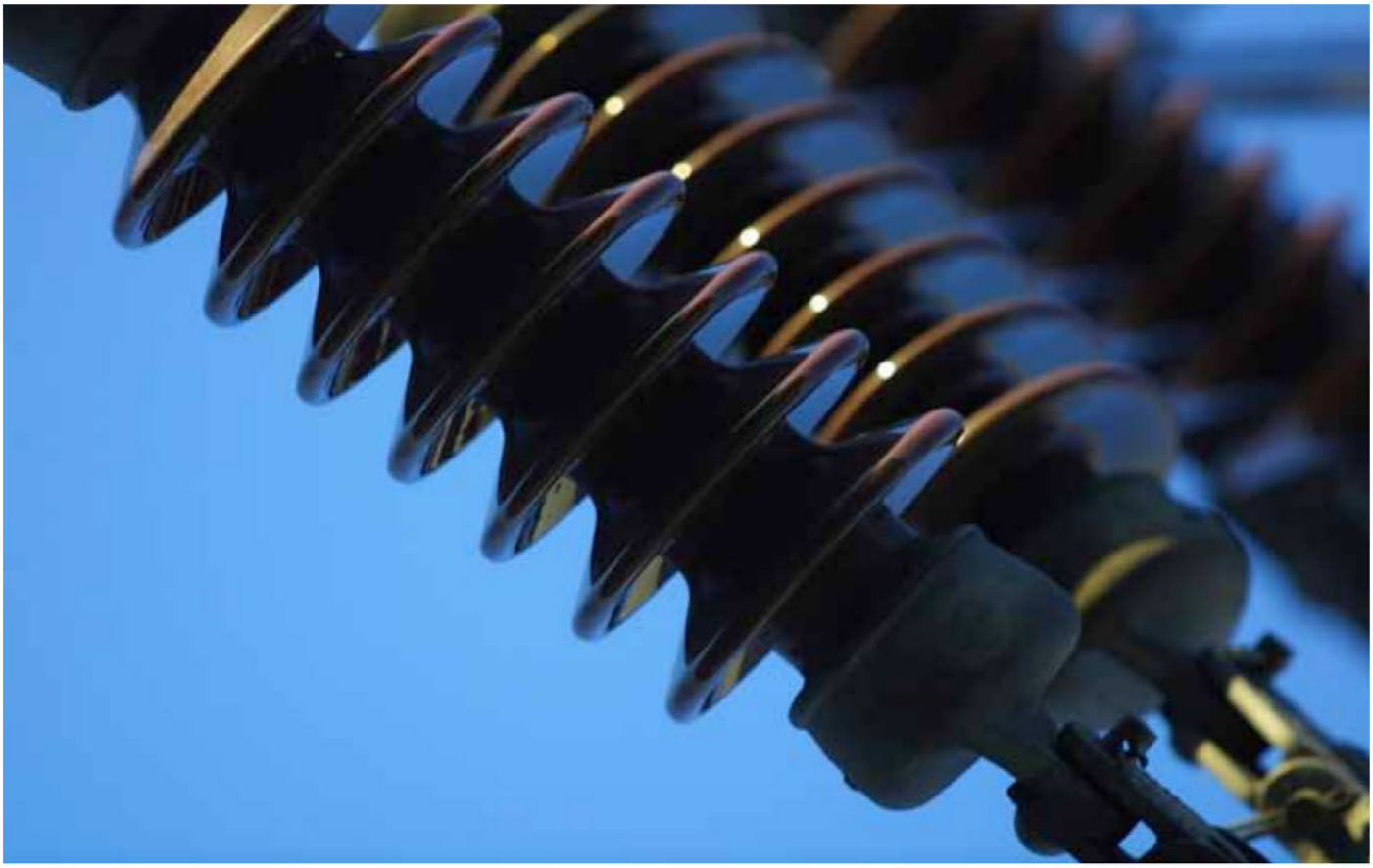
System planing phases

Planing:

- *Annual aviabilities and downtime of generation units;*
- *Annual, monthly and daily schedules for controlled discharge of complex and key reservoirs and for usage of hydro and pumped storage cas-cades;*
- *Day(s)-ahead generation mix based on RES generation forecasts and hourly load;*
- *Cold, primary, secondary, and tertiary reserves;*
- *Network operation and drafting an AMS for the national 400kV and 220kV grid;*
- *Winter peak load;*
- *Net Transfer Capacity (NTC) of interconnectors.*

Coordination and control of planned measures

- *Evaluation of expected peak load, bottlenecks during normal and maintenance conditions, and voltage control capabilities;*
- *Security assessment and system operation planning by calculation models using the data collected on a daily basis both within NDC and at ENTSO-E level, in accordance with the day-ahead congestion forecasting process;*
- *Coordination of the interconnectors maintenance schedule;*
- *Performance monitoring of control systems at system-relevant power plants and emergency control in line with the DP and CRP;*
- *Procurement of ancillary services from generators and provision of system services to directly connected clients and DSO's.*



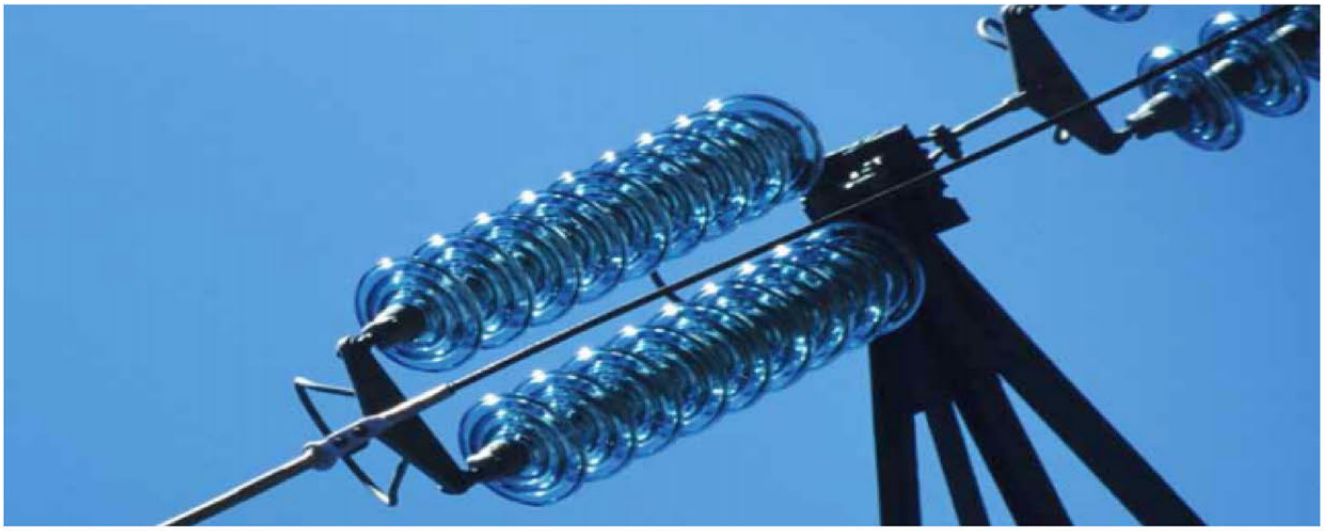
THE BULGARIAN POWER SYSTEM

Generation capacities:

Power plant type	Installed capacity	Available capacity vs. annual peak
NPP	**2 000**	**2 000**
Lignite TPP	**4 177**	**3 154**
Hard coal TPP	**1 917**	**1 026**
Gas TPP	**794**	**401**
HPP, including:	**3 161**	**3 115**
▪ **Reservoir,** incl.:	2 218	2 183
-pumped storage in generation mode	1 399	1 384
-pumped storage in pump mode	933	933
▪ **Pondage**	767	757
▪ **Run-of-river**	176	176
Windfarms	**677**	**-**
Photovoltaics	**1013**	**-**
Biomass	**23**	**23**
Total	**13 759**	**9 719**

Gross annual electricity generation:

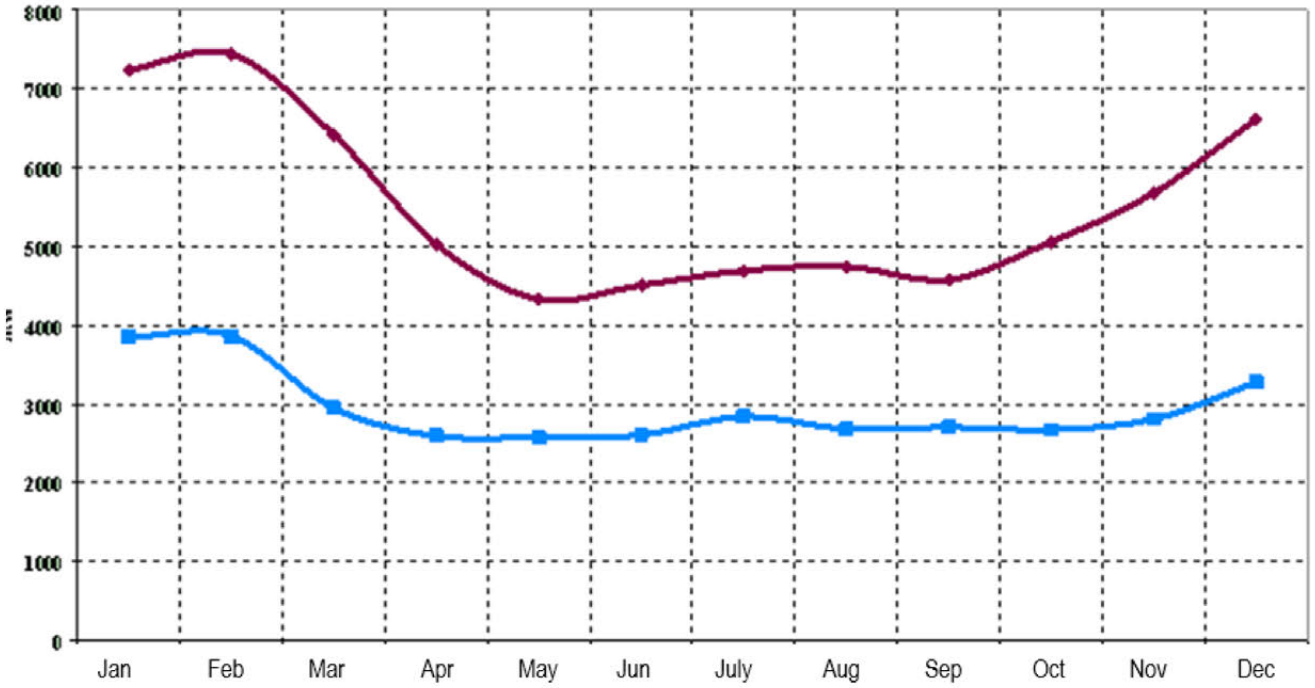
NPP	15 784 796
Lignite TPP	19 944 550
Hard coal TPP	3 103 498
Gas TPP	2 337 885
Hydro, incl.: Pumped storage PP (circulating water)	3 974 387 823 436
Windfarms	1 217 884
Photovoltaics	800 684
Biomass	31 657
Total	**47 195 341**



Electricity demand:

Gross annual demand, MWh	**3 7510 416**
Absolute gross annual peak load, MW	**7 444** Wed 01.02.2012, 20:00 h
Absolute gross annual off-peak load, MW	**2 579** Wed 02.05.2012, 04:00 h
Gross hourly usage of absolute peak load, h	**5 039**

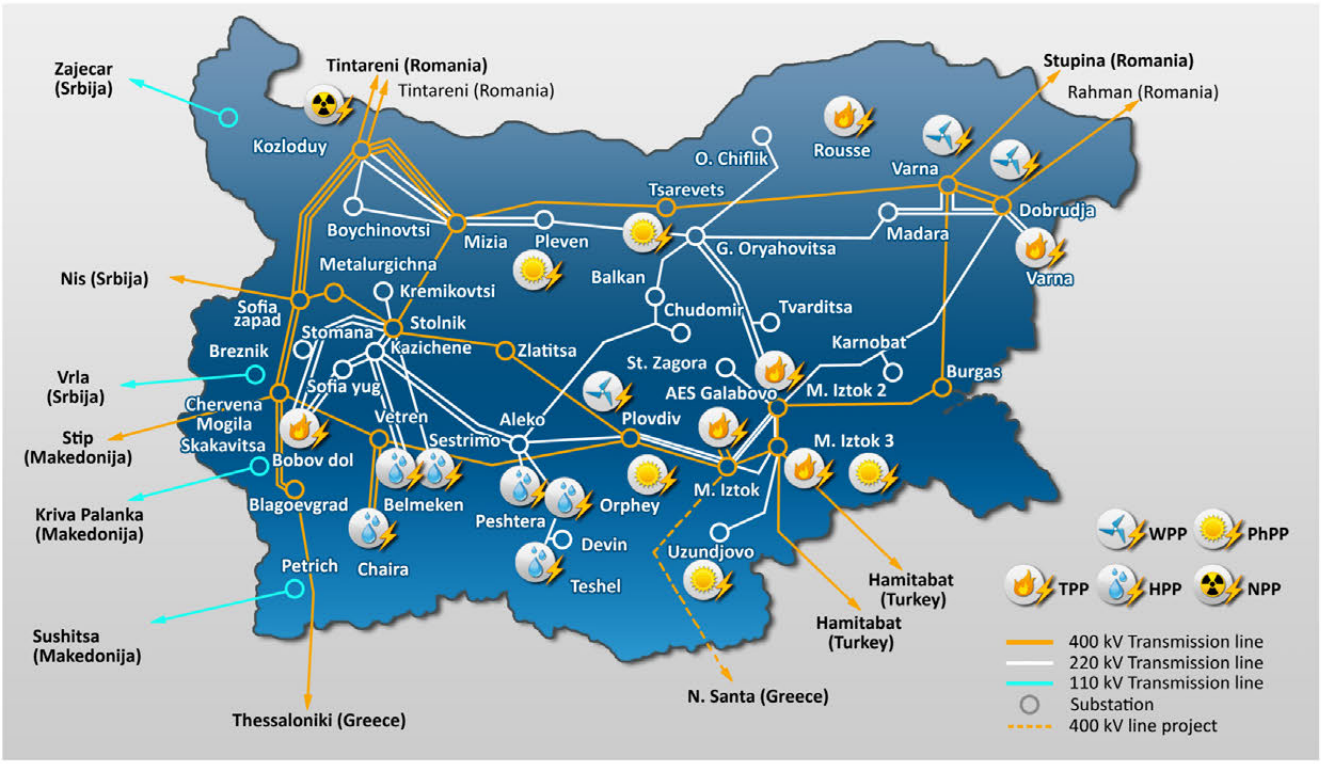
Variation of absolute off-peak and peak loads per months:



Power system performance indicators y-o-y, GWh

Indices	Yrs									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Power plant gross generation injected into transmission grid	42 514	41 539	44 259	45 710	43 093	44 831	42 573	46 260	50 700	47 195
Power plant demand and auxiliaries	6 176	6 146	6 233	5 980	6 067	5 890	5 307	4 689	6 587	6 658
Energy injected into transmission grid	36 338	35 393	38 026	39 730	37 026	38 941	37 266	41 571	44 113	40 537
Physical import	1 283	741	799	1 139	3 058	3 097	2 662	1 168	1 450	2 353
Total energy injectetd into transmission grid	37 621	36 134	38 826	40 869	40 084	42 038	39 928	42 739	45 563	42 890
Grid losses	761	742	844	881	872	905	847	895	951	916
Energy extracted from transmission gird	36 860	35 392	37 982	39 988	39 212	41 133	39 081	41 844	44 612	41 974
Pumps demand	483	289	549	471	590	718	927	988	1 199	1 103
Physical export	6 772	6 620	8 380	8 391	7 538	8 441	7 731	9 613	12 111	10 660
Grid demand	29 605	28 483	29 053	31 126	31 084	31 974	30 423	31 243	31 302	30 211

Interconnections



The existing interconnectors in the Bulgarian power system provide the necessary technical prerequisites for significant electricity exchange volumes in both normal and disturbance operating conditions, including in case of emergency tripping of a 1000 MW unit at Kozlodudy NPP.

Electricity market

Month	Generated electricity, MWh	Electricity generated for consumers, MWh
Jan	916 277,66	435 386,50
Feb	881 989,76	399 720,76
Mar	1 145 852,18	448 513,18
Apr	1 102 507,07	415 553,88
May	1 174 105,00	438 387,00
Jun	1 179 793,52	441 421,51
Jul	1 432 458,49	454 616,67
Aug	1 276 939,22	459 576,06
Sep	1 312 119,71	440 220,55
Oct	1 029 613,84	464 529,58
Nov	1 072 679,72	446 480,96
Dec	1 074 346,66	451 157,30
Total	**13 598 682,83**	**5 295 563,97**

Market functioning in 2012 was influenced by the following factors:

- *the necessity of considerable generation reserves to secure a reliable and secure power system operation in conformity with the ENTSO-E requirements;*
- *the maintaining of a large controllable segment without hourly schedules and balancing of market participants;*
- *the quote system for electricity sales, for covering the demand of protected customers.*

Preparations for testing of the new market model continued in 2012, with requirements for submission of hourly schedules by all balancing groups, including NEK-Public Provider and end suppliers (DSOs). In parallel, ESO is testing the IT systems to be used for market administration under the new conditions.

Trade volume

2012 saw yet another increase in the electricity trade within domestic demand schedules. The total energy requested by consumers under hourly schedules was 5 295 564 MWh, vs. 5 009 562 MWh in 2011.

Due to lower export quantities, there was a decrease in the total volume of energy traded by generators at freely negotiated prices, from 15 655 826 MWh in 2011 to 13 598 683 MWh in 2012.

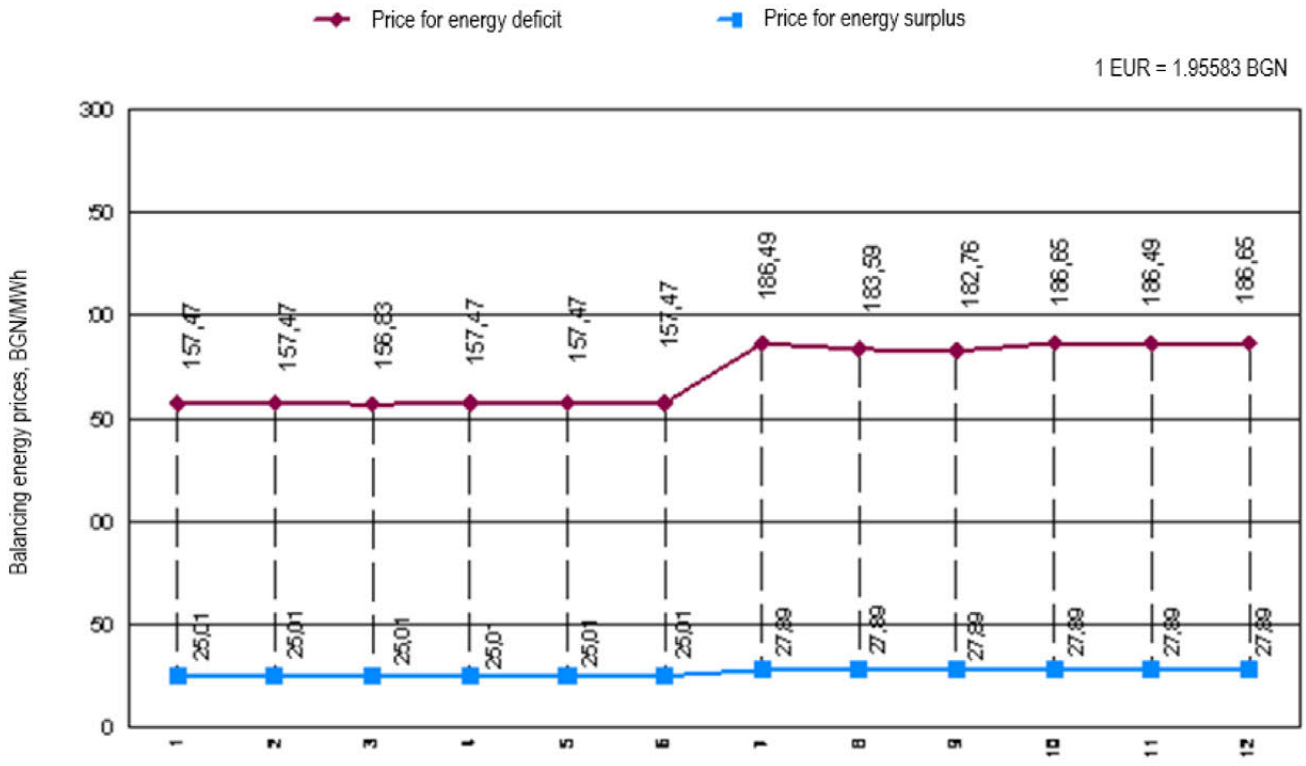
Energy imbalances

The energy used to cover the power deficit in 2012 stood at 65 673 MWh, as opposed to 102 392 MWh in 2011, and represents 1.24% of the registered schedules to end consumers, while the energy used to cover the power surplus was 239 469 MWh, vs. 245 296 MWh in 2011, being 4.52% of the registered schedules to end consumers. The decrese in both total deficit and total surplus in 2012 compared to 2011 is due to the balance groups formation process, which has been ongoing since September 2012, and the imbalance settlement within those groups.

Balancing energy prices

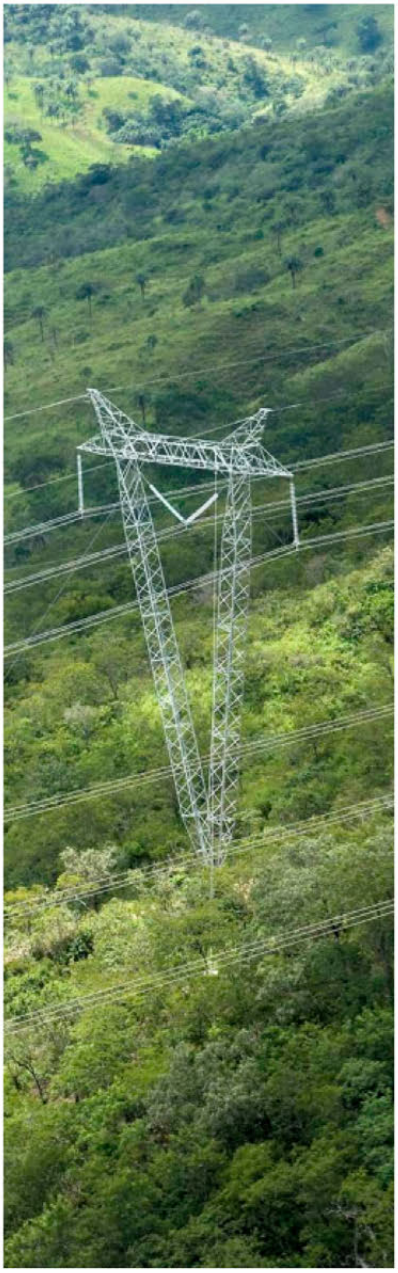
ESO defines two prices per settlement period. The annual average price for energy deficit was 171.48 BGN/MWh, vs. 156.84 BGN/MWh in 2011, and the annual average price for energy surplus was 26.21 BGN/MWh, vs. 25.01 BGN/MWh in 2011.

Monthly average balancing energy prices



Cross-border capacity allocation auctions

- *In 2012, ESO and its adjacent TSO's allocated and awarded cross-border transmission capacity via the Bulgarian interconnectors to market actors by annual, monthly and daily auctions.*
- *ESO conducted autions for Available Transmission Capacity (ATC) allocation for cross-brorder commercial exchanges across CBA participants through the tie-lines of Bulgaria with Romania, Serbia, Greece, FYROM and Turkey, and for awarding Commercial Transmission Rights (CTR's).*
- *Auctions were arranged in accordance with joint auction rules at BG-RO and BG-GR borders and for 50% of the agreed transmission capacitues at BG-MK, BG-SR and BG-TR borders.*
- *ESO conducted daily auctions for unallocated, returned or withdrawn CTR's for the tie-lines with Serbia, FYROM and Turkey.*
- *At BG-RO border,ESO manages the annual and monthly auctions for 100% of the agreed CB transmission capacity.*
- *At BG-GR border, ESO manages the monthly auctions for 100% of the agreed CB transmission capacity.*

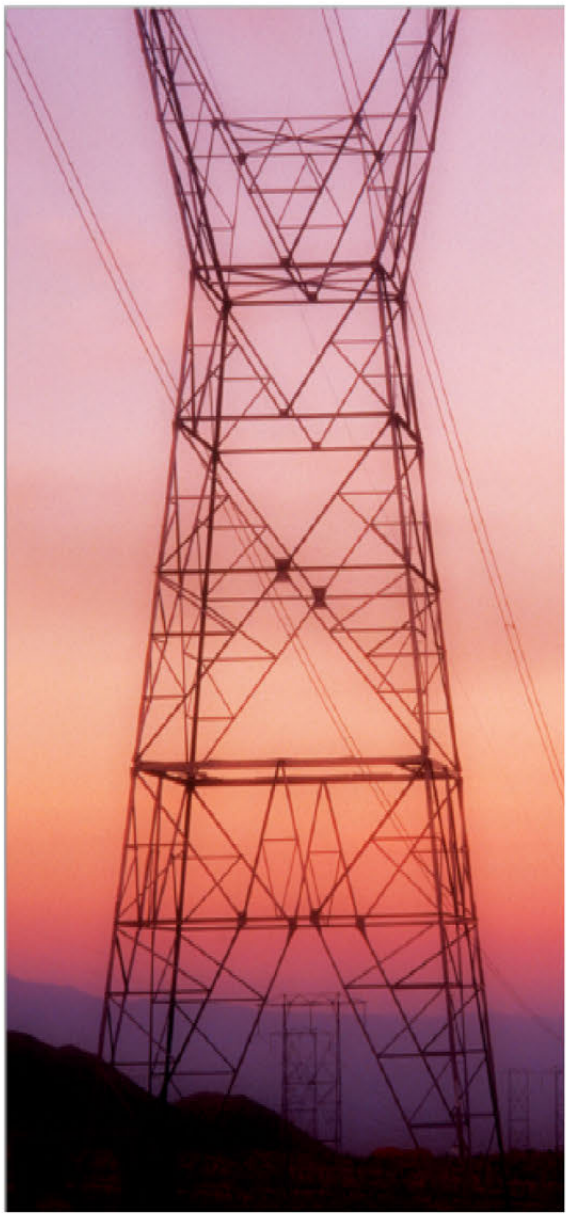


Auction procedures are based on rules approved by SEWRC, in line with the European Parliament and European Commission energy regulations.

ESO processes aution bids for the acquisition of CTRs and administers the secondary CTR market for all borders through a web-based platform.

Well underway is the project for deployment of a new modular Market Management System (MMS) based on the ENSTO-E standards and requirements and the new Electricity Trading Rules. In 2012, the individual MMS modules have undergone trial operation and preparations for real launch in 2013.

2012 also marks the start of a market coupling project between Bulgaria and Romania, accodring to a Memorandum that was signed in November 2012 between the Bulgarian Ministry of Economy, Energy and Tourism and the Romanian Ministry of Economy, Commerce and Businnes Environment. Deliverables under this project include: development of a market coupling model, migration to implicit capacity allocation on a day-ahead and intraday basis, setting up a common platform, and signing a task sharing agreement between ESO, TRANSELECTRICA and OPCOM.



The following activities were performed in 2012:

- *eDaily analysis of relay protection and automation (RPA) performance during emergency tripping events and taking adequate actions;*
- *Data processing and making inputs in the register of primary equipment's electrical parameters, correspondingly keeping the ASYM WIN programming complex datawarehouse up-to-date with the power system development;*
- *Guidance and professional assistance to the experts working in RPA and telemechanics (TM) sections at ESO Network Operation Districts (NODs) and Network Operation Subdistricts (NOSDs) level, as well as to experts from subcontractors involved in various energy projects;*
- *Setting up RPA devices in different areas of the transmission grid as part of simultaneously ongoing investment activities for power system retrofitting and development, grid configuration changes, and connection of new facilities;*
- *Supervision and direct involmement in the commissioning of new digital relay protection devices (IED's);*
- *Activities related to defining the conditions for connection of new facilities to the power system;*
- *Activities pertinent to cooperative relations between ESO and TSO's of neighboring countries for ensuring a reliable parallel operation within ENTSO-E;*
- *Ongoing phase two of the replacement of electromechanical RP's with IED's in the 220 kV and 400 kV grid, implemented under Energy 2 project.*

INFORMATION TECHNOLOGY

ESO's operations require a highly specialised computing envelope if these are to be carried out in line with the exceptionally high fail-safe operation criteria which are a must for each TSO. That environment builds on specfic IT solutions enabling efficient performance in terms of power system control, market administration, and integration with European TSO structures.

The IT environment at NDC is being developed in acordance with the following principles:

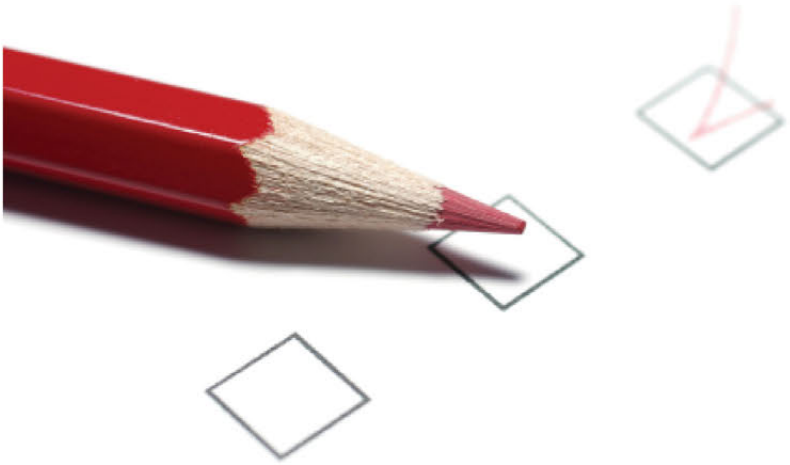
- *Intergation of different IT systems and consolidation of commercial and process data;*
- *High failover capability;*
- *Data safety and protection;*
- *Backup and rerstore systems and redundancy centers, recovery programs;*
- *Observance of mandatory internal and external standards.*

To support its operations, NDC develops various types of IT and computing solutions:

- *Dispatching control systems;*
- *A set of specialised process systems;*
- *Remote electricity metering systems;*
- *Central data store for measured energy values;*
- *Market service platform;*
- *Security and backup systems;*
- *Information publishing and delivery sytems;*
- *Communication systems.*

IT development highlights:

- *Power system planning and control solutions;*
- *Market Management Systems (MMS);*
- *Provining transparency into ESO's activity;*
- *Fail-safe communication environment;*
- *Information security and data protection.*



Key projects in 2012:

- *PS planning and control solutions - introduction of a new remote metering system; development of a system for dynamic monitoring of HV OHL transmission capacities;*
- *MMS upgrade with capabilities supporting intra-day schedule and balance group mechanism; IT service developments reflecting the new Electricity Trading Rules; introduction of a new sys-tem that covers all spects of market administration;*
- *Transparecny of ESO's activities - providing access to data regaring the power system, elec-tricity market and activity status; development of the information publi-shing and delivery systems on ESO's website, as well as provining secure access to data resourses;*
- *Fail-safe communication environment - commissioning of an OSPF-based backup communication channel between the computing networks at NDC and the four TDC's;*
- *Data warehousing solutions - extension of the data store platforms for dispatching IT systems; introduction of a new realtime data compression technology (DataDomain);*
- *Information security - deployment of data protec-tion and operations tracking tools and systems;*
- *Improvement of the working environment - provision of technical and SW tools for the workstations at NDC and TDCs in order to migrate to newer OS and user software versions.*

First Prize for Corporate IT Project of 2012

During the 9th IT Project of the Year competition held on 20 February 2013 by Computerworld Magazine Bulgaria, ESO was awarded first prize for its System for Dynamic Monitoring of HV OHL Trasmission Capacities project in the National Corporative Projects category, developed in cooperation with B- Power Bulgaria based on ARTECHE technology.

Automatic Dispatching Control System

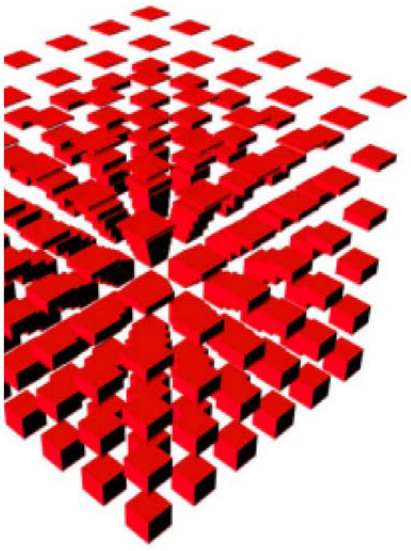
In 2012, a new Spectrum Power 2 dispatching control system was deployed at the NDC. This system is part of the single complex for real time operation control of the Bulgarian power system. The complex operates in a continuous data exchange mode with the remaining generation planning systems in a market environment as well as information sharing with the MMS. Movreover, by means of this system, telemechanical information is being exchanged in real time with neighbour TSOs' dispatching centeres. The introduction of the new real time control system enables unification of the data flows needed for a secure and reliable power system operation while observing the Bulgarian legislation, international agreements, and ENTSO-E requirements.

Also in the year of reference, the SINAUT Spectrum dispatch control system at TDC West was upgraded with a temporary support point at Sofia South substation. It allows the Kambanite and Knyazhevo substations to be managed without the permanent presence of on-duty operators. In 2013, other substations in Sofia District are to be connected to this support point as well.

Telecommunication and substation automatization systems:

The Automatic Dispatch Control System (ADCS) data network was further developed in 2012 by the connection of new facilities to ADCS (predominantly generator sets) and the upgrade of already existing ones.

Remote communication:



A highly meshed telecommunication network covers the entire country and features equipment with different purposes and functionalities.

This telecommunication network represents the main domain providing connectivity of the systems used for:

- *Power system operation control;*
- *Relay protection acceleration and transfer of commands to emergency automation;*
- *Provision of WAN connectivity between the Local Area Networks of all ESO divisions.*

FINANCE AND BUDGET DEPARTMENT

Business development, economy and finance (BDEF)

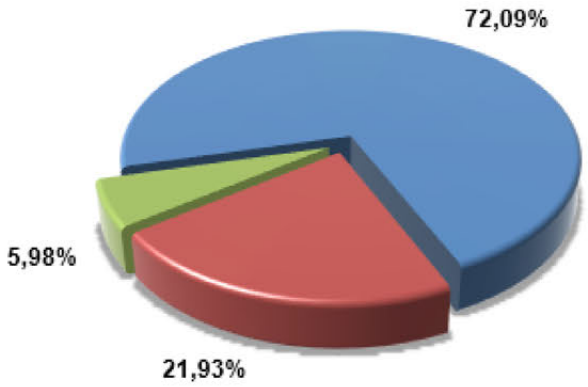
Sales revenue:

Corporate sales income totals 512 391 k BGN, including from:

- *power system control: 369 372 k BGN;*
- *flat rate contract with NEK: 112 379 k BGN;*
- *variable rate contract with NEK: 30 640 k BGN.*

Other corporate revenues amount to 24 890 k BGN, including from:

- *reactive energy: 21 364 k BGN;*
- *default penalties due to non-fulfillment of contracts: 2 083 k BGN;*
- *current activities finiancing: 15 k BGN;*
- *long-term asset acquisition funding: 50 k BGN;*
- *auxiliary activities, loans, insurance compensations: 1 378 k BGN*

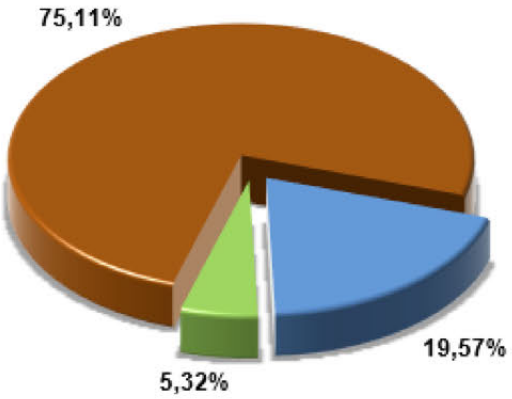


- Revenues from power system control
- Revenues under contract with NEK for payrole cost, ESO's and NEK assets maintenance
- Revenues from repair of NEK assets under contract with NEK

Operating costs:

Activity-related costs stand at 575 644 k BGN, including for:

- *power system control: 432 360 k BGN;*
- *flate rate contract with NEK:112 644 k BGN;*
- *variable rate contract with NEK: 30 640 k BGN.*



- Power system control cost
- Costs under contract with NEK on staff, repair of ESO assets and prevenive maintenance of NEK assets
- Cost on repair of NEK assets under contract with NEK

Financial result:

For 2012, the company booked a loss of 38 457 k BGN, whcih after tax recovey was reduced to 38 117 k BGN.

The gross financial result from power system operation is a loss (- 62 988 k BGN).

The gross financial result from the flat rate contract with NEK represents a loss (- 265 k BGN).

Balance sheet as of 31 Dec. 2012, k BGN

Assets	2012	2011	Liabilities	2012	2011
Non-current assets	**45 193**	**39 946**	**Shareholders' equity**	**71 700**	**180 418**
Property, plant and equipment	38 231	34 890	Capital stock	66 043	65 990
Intangibles	5 515	5 056	Reserves	43 774	9 833
Tax arrears assets	1 447		Accumulated loss from previous years		
			Financial result	-38 117	104 595
Current assets	**83 896**	**198 667**	**Non-current liabilities**	**10 003**	**8 102**
Invertories	12 476	12 285	Retirement compensations	7 906	7 785
Commercial receivables	38 895	27 083	Tax arrears liabilities	2 097	317
Receivables from associates	3 645	125 367	Deferred funding		
Tax receivables	10 229		**Current liabilities**	**47 386**	**50 093**
Others	1 899	1097	Commercial liabilities	20 634	13 181
Cash	16 752	32 835	Others	26 752	36 912
ASSETS TOTAL	**129 089**	**238 613**	**EQUITY & LIABILITIES TOTAL**	**129 089**	**238 613**

Consolidated income statement, 1 Jan. - 31 Dec. 2012, k BGN

	2012	2011
Sales revenue	**512 391**	**546 323**
Other operational costs	24 890	11 263
Operating costs	575 572	440 851
Net financial revenue/costs	(166)	(509)
EBT	**-38 457**	**116 226**
Tax expense/revenue	340	(11 631)
Net profit for the period of reference	**-38 117**	**104 595**
Other consolidated revenue, net from taxes		
Total annual consolidated revenue	**-38 117**	**104 595**

Financial indices analysis based on the account statements for 2012 and 2012

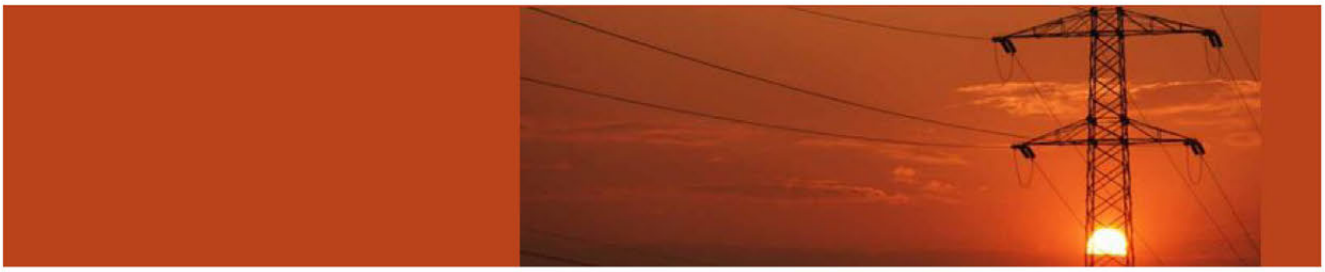
Indices	2012	2011
Profitability		
Profitability from sales revenue	0,0716	0,1876
Profitability from shareholders' equity	0,5364	0,5797
Profit rate of liabilities	0,7219	1,7973
Assets capitalisation	0,3077	0,4383
Efficiency		
Cost efficieny rate	0,9332	1,2623
Revenue efficiency rate	1,0716	0,7922
Liquidity		
Total liqudity	1,8235	3,9755
Quick liquidity	1,4358	3,7297
Instant liquidity	1,4358	3,7297
Absolute liquidity	0,3761	0,6571
Financial authonomy		
Rate of solvency	1,3459	3,1002
Rate of indebtedness	0,7430	0,3226
Fixed assets funding rate	1,8346	4,7194
Current assets funding rate	0,9881	0,9489

Projects

One key pirority is to make best use of the funding opportunities offered by national, EU and other inter-national programmes for implementation of projects and actions that contribute to achieving the company's strategic goals. Two projects supported by the Human Resource Development (HRD) programme and with a total cost of 419 713 BGN were launched in 2012:

- *Project ESF 2302 01 01013 "Improvement of the Working Environment in ESO" includes special training courses on Occipational Health & Safety (OHS), measurses to minimise the risks of labour accidents, professional illness and thermal trauma, and procurement of fire-proof hydrogel blankets.*

- *Project ESF 2116 01 01016 "HR Qualification Improvement and Sustainable Development in ESO" includes career training of 270 ESO employees in the field of public procurement, risk managememt, the Georgaphic Information System (GIS), English language, and transportation.*



- *ESO is a key party to the GridTech "Innovative grid-impacting technologies enabling a clean, efficient and secure electricity system in Europe" project supported by the EU's Intelligent Energy - Europe Programme. The project is being implemented by a consortium of major European technical universities and research institutes, TSO's, and the EC Joint Research Center. Its total cost is € 1.96 billion.*

- *ESO took active part in the activities of Working Group "North-South Electricity Interconnections in CEE and SEE" set up in accordance with the new EU draft regulation on guidelines for trans-European energy infrastructure. This WG is tasked to identify projets of European interest or those projects the implementantion of which by 2020 is crucial for achieving the EU energy and climate policy targets. Based on the ENTSO-E TYNDP 2012 and addtional analytical and research effort, ESO has developed and submitted three clusters to be potentially included in the first list of projets of European interest:*

- *Cluster "Corridor 8: Development of Electricity Interconnections" includes construction of new 400 kV OHL's: Maritsa East 1 - Bourgas, Maritsa East 1 - Plovdiv, Maritsa East 1 - Maritsa East 3, as well as Maritsa East 1 (BG) - Nea Santa (GR) interconnector.*

- *Cluster "Green Dobrudzha" includes construction of new 400 kV OHL's: Dobrudzha – Bourgas and Svoboda – Vidino; 400/110 kV Svoboda substation, 400/110 kV Vidino s/s, and connection of Svoboda s/s to the Bulgarian power system through a line break of the 400kV Varna (BG) – Stupina (RO) interconnector.*

- *Cluster "BG North-South Grid Enhancement" includes construction of 400kV Vetren s/s - Blagoevgrad s/s OHL and 400kV Tsarevets s/s - Plovdiv s/s*

GRID OPERATION AND MAINTENANCE (GOM)

The GOM Department structure is composed of several divisions: Substations O&M, OHL O&M, Engineering, Power Facilities Construction & Anticorrosive Protection, Database Management, and Power Transformers. It includes 13 Network Operation Districts (NOD) and 15 Network Operation Subdistricts (NOSD) covering the entire territory of Bulgaria.

This structure is responsible for the operation and maintenance of the following grid assets:

- *OHL's with a total length of 14 727 km, includ-ing: 750 kV - 85 km, 400 kV - 2334 km, 220 kV - 2837 km, and 110 kV - 9 471 km;*
- *294 substations, including 750/400 kV - 1 s/s, 400/220/110 kV - 7 s/s, 400/110 kV - 7 s/s, one 400kV hub s/s, 220/110 kV - 16 s/s, 110 kV /MV - 262 s/s.*

HV OHL operation and maintenance (HV OHL O&M)

Maintenance works:

Maintenance works on the replacement of towers, conductors and ground wires are driven by:

- *the Program for Maintenance, Reconstruction and Refurbishment of the 400, 220 and 110 kV Grid Facilities;*
- *the National TYNDP 2012-2022;*
- *technical status assessment;*
- *the need for transmission capacity increase;*
- *bottleneck issues in specific regions.*

The scheduled maintenance activities are peformed under the following conditions:

- *Use of heavy-duty steel latticed towers with welded type design and durable anti-corrosive finish;*
- *Use of hi-performance hot-galvanized bolted type steel latticed towers;*
- *Founding based on an incremental approach to overcome difficulties arising from expropriation procedures;*
- *Deployment of hi-specification compressed and hooped reinforcement.*

The total length of cooplenetly retrofitted transmission lines in 2012 is 56 km, that figure being 35 km in 2011. Detailed design papers have also been prepared for the overhaul of OHL's with a total length of 37 km.

Preventice maintenance activities are set to:

- *improve the lighting protection and thermal rating through replacement of the existing ground wires;*
- *decrease the number of emergency tripping events resulting from clearance violation between live and grounded circuits through installing additional counterweights on messengers and replacing jumper balancebeams;*
- *increase service life with new portal tower guys;*
- *improve the dielectric properties of insulation circuits by replacement of insulation units;*
- *limit wire galloping by installing interphase spacers;*
- *provide efficient vibration damping with high-performance dampers;*
- *remove clearance violations by using box beams and other design solutions;*
- *constantly maintain right-of-ways to ensure fail-safe operation and prevent forest fires;*
- *make sure that grid facilities are accessible by construction or rebuild of temporary access roads along the line routes;*
- *recover damaged or partially ruined foundations, support walls, platforms, etc.;*
- *reinstall latticed structure components where missing (stolen);*
- *apply new anticorrosive coating on latticed structures where needed;*
- *restore bird anti-perching devices and HV warning signs.*

Maintenance activities by ESO's own teams and resourses have increased considerably in 2012, having replaced:

- *278 km of ground wires and coductors by contractor and 113,6 km by own resources;*
- *the guys of 273 portal support towers by contactors;*
- *over 4000 insulator units by own resources;*
- *586 vibration dampers, 236 interphase spasers, 33 temperature sensors and 14 weather stations by own resources.*

In order to make right-of-ways, 5 700 da of vegetation has been cleared by contractors and about 620 da by own resources. In 2012, the HV OHL O&M division has completed 100% of the list of deliverables and the shcedule for preventive maintenance and service works on ESO and NEK long-term assets.

Substations operation and maintenance

Reconstruction, rehabilitation and overhaul works

Reconstruction, rehabilitation and overhaul works on the replacement of physically depreciated facilities, equipment and structures have been completed in line with:

- *the schedule for overhaul and replacement of facilities according to ESO's list of deliverables on preverntive maintenance and service of NEK long-term assets;*
- *additional facilities ordered by NEK for 2011 - 2012;*
- *technical assessment of equipment;*
- *reconstruction and rehabilitation of substations by replacement of 400, 220 and 110 kV equipment delivered uner the Energy 2 programme as well as 110 kV HF capacitors.*

The following equipment was rehabilitated in 2012:

- *400 kV switchyard at Vetren s/s;*
- *220 kV switchyard at Miziya s/s;*
- *220 kV switchyard at Madara s/s;*
- *220 kV switchyard at Pleven 1 s/s - Phase 1.*

Some facilities at 400 kV switchyard of Stolnik s/s, 400 kV switchyard of Blagoevgrad s/s, 400 kV switchyard of Miziya s/s, 220 kV switchyard of Pleven 1 s/s, 110 kV switchyard of Bobov Dol s/s, and 110 kV switchyard of Bourgas s/s were replaced.

In total for 2012, the following units delivered under Energy 2 programme were installed at the HV substations:

- *37 circuit breakers (400 kV - 6; 220 kV - 16; 110 kV - 15);*
- *153 disconnectors (400 kV - 20; 220 kV - 51; 110 kV - 82);*
- *78 current transformers (400 kV - 9; 220 kV - 3; 110 kV - 66);*
- *84 voltage transformers (400 kV - 6; 220 kV - 3;110 kV - 75);*
- *33 combined instrument transformers 220 kV;*
- *15 surge arrestors (400 kV - 9; 110 kV - 6).*

326 HF capacitors 110 kV were delivered in the year of reference.

One bay at 110 kV swictchyard of Samokov s/s was fully equipped as well.

Reconstruction and rehabilitation of 110 kV switchyards:

- *Rehabilitation and retrofit of 110 kV switchyard equipment at Chervena Mogila s/s, Zlatitsa s/s, Republica TPP s/s, and Sliven TPP s/s;*
- *Replacement of 15 disconnectors and 273 pneumatic drives with motor drives;*
- *Equipping 2 bays for Valchuk OHL at 110 kV switchyard of Blagoevgrad s/s and sectionalizing of the busbar system at Dryanovo s/s;*
- *Overhaul of the earthing systems at Krasno Selo and Lovetch substations;*
- *Maintenance works on secondary installationas with replacement of control cubicles at Storgoziya, Aleko and Pazardzhik substations;*
- *Equipping a new control room with MV AC and DC control and relay cubicles at Maritsa 3 TPP s/s - Dimitrovgrad;*
- *Replacement of 33 relay protection devices.*

Circuit Breakers Repair Shop:

- *Installed and commissioned SF6 circuit breakers: 110 kV – 15; 220 kV - 16; 400 kV - 6;*
- *80 double heads and 80 control blocks of air breakers revised and repaired;*
- *4 compressors revised and repaired;*
- *Removed faults and malfunctions of HV circuit breakers.*

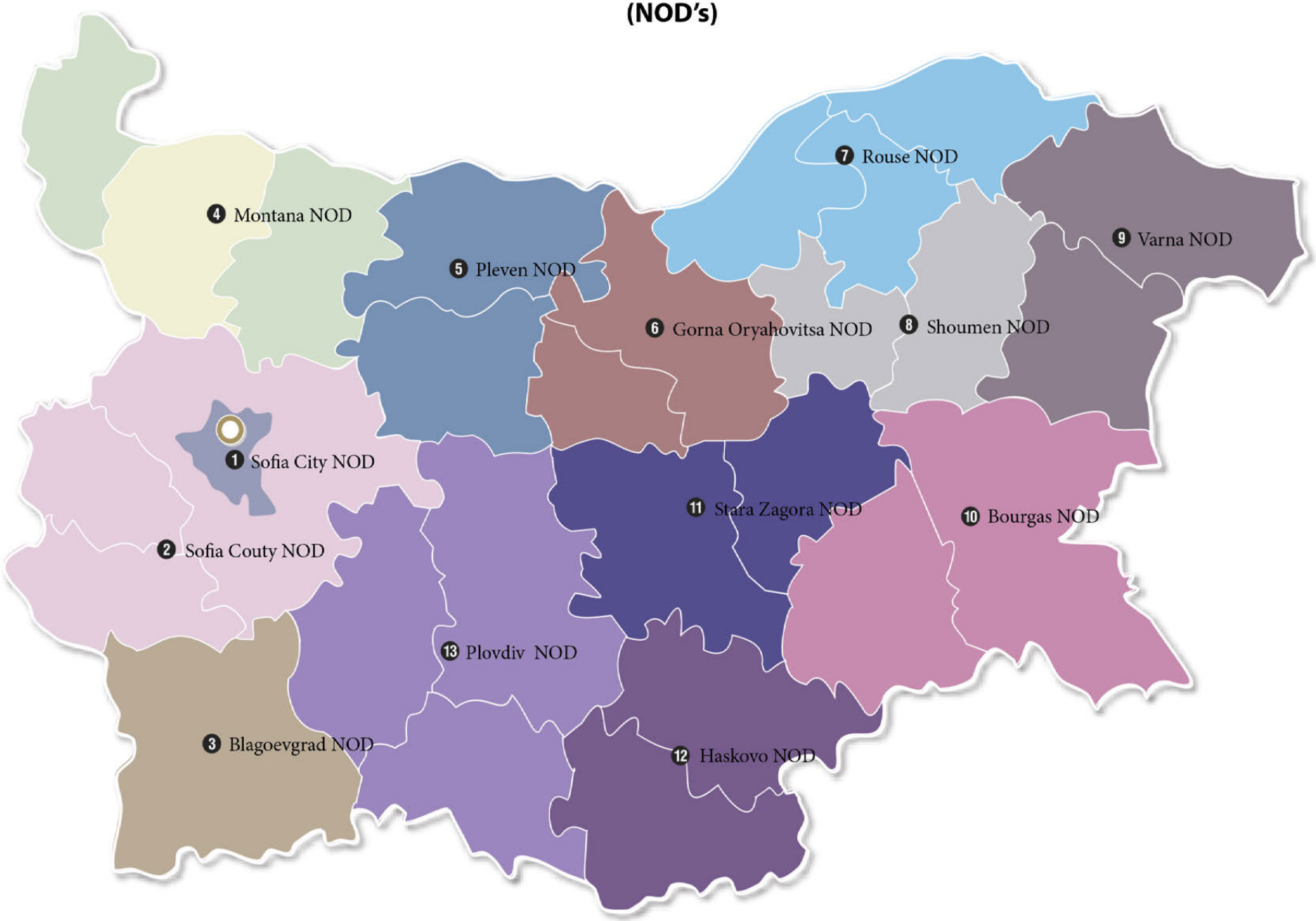
Reconstruction and rehabilitation of MV switchgears:

- *New 20 kV switchgeard, MV AC and DC cubicles, and annunciation system installed at Rousse s/s;*
- *110 new vacuum circuit breakers, 8 ohmic resistance units, 3 accumulator batteries, 2 current rectifiers, and 8 relay protection devices;*
- *14 outgoing feeder bays 20 kV equipped and connected to support RES integration.*

Preventive maintenance and servicing activities:

- *Reduction of emergency tripping events due to power equipment and bus system faults;*
- *Reduction of non-selective tripping instances due to improper relay protection and breaker response;*
- *Continuous maintenance of substation grass terrains to ensure failurefree equipment operation and fire safety;*
- *Recovery of damaged or partially ruined foundations, platforms, etc.*

NETWORK OPERATION DISTRICTS
(NOD's)



13 NOD's covering the entire territory of Bulgaria

Engineering

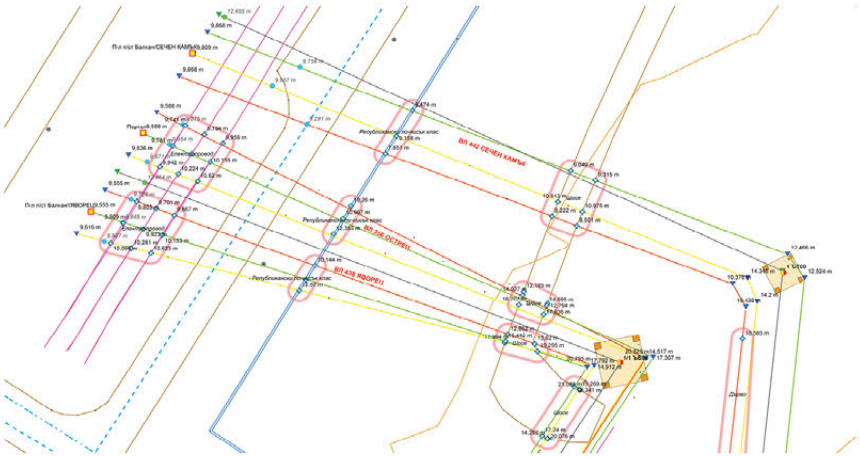
Technical design documents were drafted in the following areas necessary for implementation of the ESO's maintenance schedule:

- *detailed designs for reconstruction and rehabilitation of switchyards and switchgears with replacemet of equipment, portals, tables and control cubicles;*
- *detailed designs for extension of switchyards.*

Drafted and approved were 42 project engineering designs concerning:

- *primary switching;*
- *secondary switching;*
- *civil and construction part;*
- *OHS plan;*
- *fire safety plan.*

Field supervision and technical assistance was performed on a recurrent bais during the implementation of these projects.



Power transformers (PT)

Diagnostics and maintenance:

- *Trapdoor inspections: 21;*
- *Active part inspections: 19;*
- *Tap-changer inspections: 87;*
- *Measuremets on power transformers: 183;*
- *Transformer resealment operations: 85;*
- *M3-3 and M3-4 motor dives replaced with retro-fitted drives: 17;*
- *Replaced and resealed 110 kV bushinings: 12;*
- *One 267 and 210 MVA autotransformer phase deinstalled and prepared for transportation;*
- *Three 267 and 210 MVA autotransformer phases installed and equipped;*
- *Current maintenance, trapdoor inspection and oil replacement on system autotranformers: 5;*
- *Number of substations where electrical measurement and maintenance activities were performed: 175;*
- *Power transformers and autotransformers on which electrical measurement and maintenance activities were performed: 215.*

Number of noncheduled activites performed:

- *Participation in the installation of serial nr. 112205 transformer at Alen Mak s/s;*
- *Participation in the installation of serial nr. 711514 transformer at Moderno Predgradie s/s;*
- *Preparing for transportation of serial nr. 106646 transformer at Madzharovo s/s;*
- *Preparing for transportation of serial nr. 109151 transformer at Skakavitsa s/s;*
- *Replacment of worm box for PC-4 tap changer at Botevgrad Tr. 1 s/s, NOD Sofia District;*
- *Location AE - Gorna Oryahovitsa NOD, Tsarevets s/s AT 403;*

Introduced maintenance technologies:

- *Resealment of 110 kV bushings type KVP 123/630 and ИПрТО 123/400: 12 pcs. resealed;*
- *Resealment of 21 and 10.5 kV bushings: 45 pcs. resealed.*

Retrofits:

- *Type ЯР and M3-4 motor drives: 7;*
- *Power switches for type PC-2, PC-3, PC-4 and PC-9 tap changers: 7;*
- *Worm boxes for tap changer oil trays: 24;*
- *RS1000 and URF25*10 monitoring relays: 52;*
- *BF80 and AF20 Buchholz relays: 5.*
- *Installation of M3-4 motor drive, PC1000 tap changer, and BF80 Buchholz relay at Aytos - Tr. 2 s/s, Bourgas NOD;*
- *Bushings resealment at Aytos - Tr. 2 s/s, Bourgas NOD;*
- *Installation of motor drive heaters at Dzhumaya - Tr. 2 s/s;*
- *Installation of motor drivs heaters at Pamporovo s/s - Tr. 2, Plovdiv NOD (Smolyan NOSD);*
- *Revision of tap-changer electric measurement at Devin HPP - Tr. 1;*
- *Preparation for commissioning of searial nr. 109151 transformer at Madzharovo s/s ;*
- *Leakage removal by welding at Slaveykov -Tr. 2 s/s, Bourgas NOD;*
- *Replacement of PC1000 tap changer at Vratsa 3 - Tr. 2 s/s, Montana NOD (Vratsa NOSD);*
- *Revision of PC-1000 at Belogradchik - Tr.2 s/s, Montana NOD (Vidin NOSD);*
- *Resealment at Slaveykov - Tr. 1 s/s, Bourgas NOD;*
- *M3-4 motor drive replacement at Lukovit - Tr. 1 s/s, Lovetch NOD;*
- *Cutoff valve revision at AT403 Stolnik s/s, Sofia District NOD;*
- *Installation of cooler at Alen Mak - Tr. 2 s/s, Blagoevgrad NOD;*
- *Motor drive revision at Gulyantsi - Tr. s/s, Plev-en NOD;*
- *Type ЯР motor drive replacement at Shumen - Tr. 2, Shumen NOD;*
- *Substitution of M3-2 # 30 for # 17 motor drive at Sliven Indurstry - Tr.2 s/s, Stara Zagora NOD (Sliven NOSD);*
- *M3-4 motor drive replacement at Knyazhevo - Tr. 2 s/s, Sofia City NOD;*
- *M3-4 motor drive installation at Voenna Rampa - Tr. 1 s/s, Sofia City NOD;*
- *BF-80 installation at Bukyovtsi - Tr. 1 s/s, Montana NOD (Vratsa NOSD).*

Central lab for transformer oils (CLTO)

Ongoing operation control of oil-filled equipment at Sofia CLTO, Plovdiv CLTO, Plovdiv Transformer Oils Regeneration Unit (TOR), and Varna CLTO.

Maintaining and extension of the accreditation scope.

Providing services for external clients at Sofia CLTO, Plovdiv CLTO, Varna CLTO, and Plovdiv TOR.

Varna Mobile HV Lab:

- *Ongoing control;*
- *New measurement equipment and methods introduced.*

The three labs participated for 6th time in interlaboratory cross-check strudies at I.I.S. Netherlands, where their technical competence was acknowledged with 3 Certicicates of Exellence.

Accreditation

A new accreditation certificate has been issued. It is valid until 31 December 2016.


БЪЛГАРСКА СЛУЖБА ЗА АКРЕДИТАЦИЯ

СЕРТИФИКАТ ЗА АКРЕДИТАЦИЯ

ЕЛЕКТРОЕНЕРГИЕН СИСТЕМЕН ОПЕРАТОР ЕАД
ЦЕНТРАЛНА ЛАБОРАТОРИЯ ЗА ЕНЕРГЕТИЧНИ МАСЛА /ЦЛЕМ/

Адрес на управление: 1404 гр. София, бул. "Гоце Делчев" №105
Адрес на лабораториите:
ЦЛЕМ – София: 1632 гр.София, бул. "Овча купел" № 65 А
ЦЛЕМ – Пловдив: 4000 гр. Пловдив, ул. "Христо Г. Данов" № 37
ЦЛЕМ – Варна: 9020 гр. Варна, бул. "Трети март", п/ст Варна – Север

ЕИК: 175201304

ОБХВАТ НА АКРЕДИТАЦИЯ

Да извършва изпитване на:
ЦЛЕМ – София
Хартия и преспан; картон импрегниран с масло
Минерални изолационни масла
в т.ч. вземане на проби (извадки) от:
Минерални изолационни масла

ЦЛЕМ – Пловдив
Минерални изолационни масла
в т.ч. вземане на проби (извадки) от:
Минерални изолационни масла

ЦЛЕМ – Варна
Минерални изолационни масла
в т.ч. вземане на проби (извадки) от:
Минерални изолационни масла

АКРЕДИТИРАН СЪГЛАСНО БДС EN ISO/IEC 17025:2006

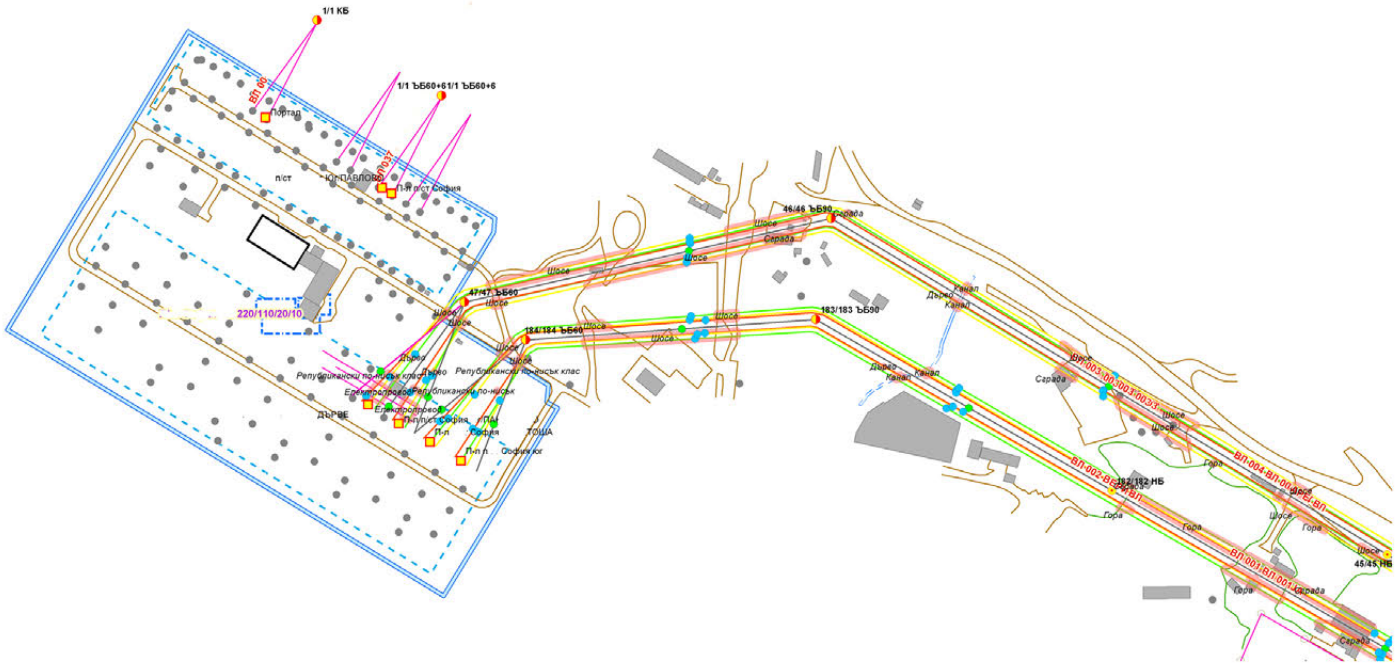
Заповед № 1636/28.12.2012г. е неделима част от сертификата за акредитация,
общо 4 страници
Валиден до: 31.12.2016 г. БСА рег. № 82 ЛИ
Изпълнителен директор:
инж. Елза Янева
Дата на акредитация: София 28.12.2012 г.
БЪЛГАРСКА СЛУЖБА ЗА АКРЕДИТАЦИЯ РЕПУБЛИКА БЪЛГАРИЯ

Database management (DBM)

SAP R/3 and GIS software products were introduced and corrections made in the DB for keeping up-to-date information of ESO-operated substation and OHL facilities. Reports were also generated and and single-line diagrams as well as maps showing NEK-owned facilities location.

Quantitative report of substation schemes in GIS by 14 Jan 2013:

Substations total	Current schemes	To be updated	To be drawn
295	229	64	2



Operation control and occupational health & safety (OC & OHS)

Technical operation of power facilities

Analyisis of tripping occurrences:

Tripping events	Unit	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	Count	1 878	1 929	1 487	1 492	1 366	1 545	1 567	1 167	1 375
	Duration	18 551	9 306	5 854	5 900	8 143	6 776	5 368	4 464	5 005
Automatic	Count	1 714	1 799	1 402	1 416	1 261	1 472	1 470	1 106	1 290
	Duration	14 191	7 349	4 478	4 002	5 197	5 113	3 764	3 107	3 322
Manual	Count	164	130	85	76	105	73	97	61	85
	Duration	4 360	1 956	1 375	1 897	2 943	1 662	1 604	1 357	1 683

Statistics by tripping types:

Tripping type	Unit	2011	2012
Disturbances	Count	922	1 092
(A1)	Count	706	1 131
	Energy not supplied, MWh	112	75
Violations	Count	243	283
(A2)	Duration	2 781	3 874
	Enery not supplied, MWh	538	331
Faults	Count	2	0
(A3)	Duration	975	0
	Energy not supplied, MWh	20 623	0

Statistics by types of facilities:

Overhead lines

OHL type	Unit	2011	2012
400 kV	Tripping count	123	213
	Duration	33	371
220 kV	Tripping count	97	102
	Duration	296	283
110 kV	Tripping count	703	798
	Duration	2 218	1 803

Substatons

Substation type	Unit	2011	2012
400/220/110 kV	Tripping count	18	14
	Duration	106	132
220/110 kV	Tripping count	19	20
	Duration	559	637
110/CpH kV	Tripping count	207	288
	Duration	1 249	1 777

Emergency tripping occurences of ESO's 110kV/MV transformers for 2011 and 2010

NOD		Sofia City	Sofia District	Montana	Pleven	G. Oryahovitsa	Rousse	Shumen	Varna	Bourgas	Haskovo	Stara Zagora	Plovdiv	Blagoevgrad	Total
Number of transformers per NOD		39	65	48	56	35	29	36	48	65	39	56	87	24	627
ER tripping events	2012	15	11	9	8	4	14	5	6	11	9	5	18	6	121
	2011	9	8	9	5	2	3	9	5	11	11	4	15	7	98
Penalized tripping events	2012	6	1	3	2	1	3	0	3	0	0	0	2	1	22
	2011	2	0	2	0	1	0	2	2	2	1	0	2	2	16
Subjective violations	2012	0	4	0	1	1	1	0	2	2	0	0	0	0	11
	2011	2	0	1	0	0	0	2	2	1	0	0	2	1	11
ER trippings per number of s/s	2012	0,38	0,17	0,19	0,14	0,11	0,48	0,14	0,13	0,17	0,23	0,09	0,21	0,25	0,19
	2011	0,23	0,12	0,19	0,09	0,06	0,1	0,25	0,1	0,17	0,28	0,07	0,17	0,29	0,16
S/s tripped vs. number of s/s	2012	0,15	0,02	0,06	0,04	0,03	0,1	0	0,06	0	0	0	0,02	0,04	0,04
	2011	0,05	0	0,04	0	0,03	0	0,06	0,04	0,03	0,03	0	0,02	0,08	0,03

Occupational Health & Safety

- *An ongoing project "Improvement of the Working Environment in ESO" supported by the European Social Fund - Human Resources Development Operational Programme (HRD OP);*
- *Annual staff training provided in all ESO's structures in line with the new Ordinance РД-7-2/ 16.12.2009;*
- *Occupational medicine services (OMS) provided for the entire personnel;*
- *In cooperation with the OMS, annual staff training was conducted for OHL officials and the employees' epresentatives in the Occupational Conditions Committee (OCC);*
- *In cooperation with the OMS, ESO employees were subject to annual training on first aid and self-aid ;*
- *New Internal OHL Rules were drafted and approved.*

COMMERCIAL DPARTMENT
(CD)

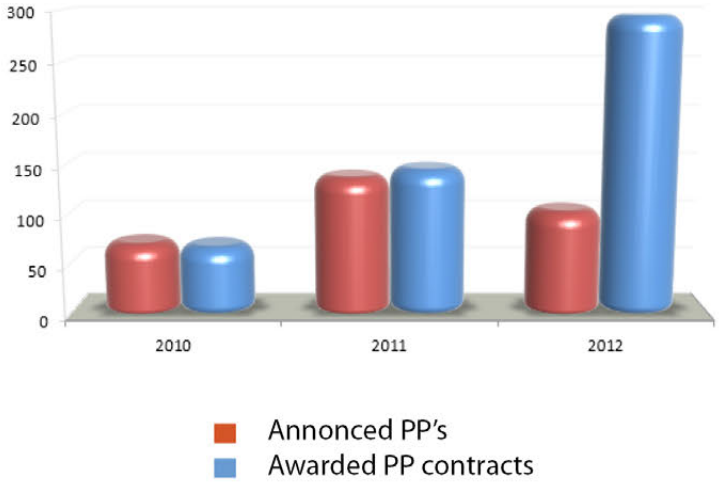
According to statistics announced on the website of the Public Procurement Agency, ESO is the fourth in 2012 nationwide in number of contracts as a result of the performed procedures.

Tender procedures carried out under the Public Procurement Act

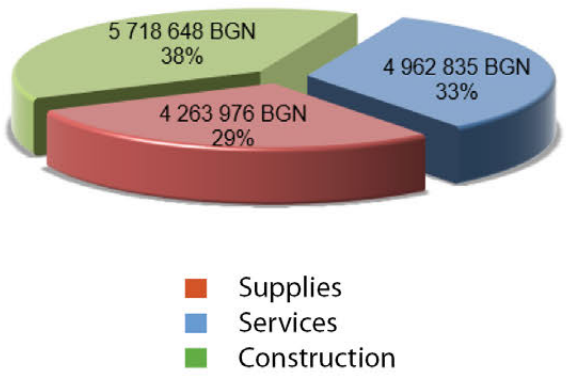
In 2012, the arrangement and award of public procurements faced a lot of difficulties due to frequent regulatory amendments and the introduction of new rules and organisation structures in ESO.

According to statistics published on the Public Procurement Agency's website, ESO ranks fourth at national level in terms of number of awarded public procurements in 2012.

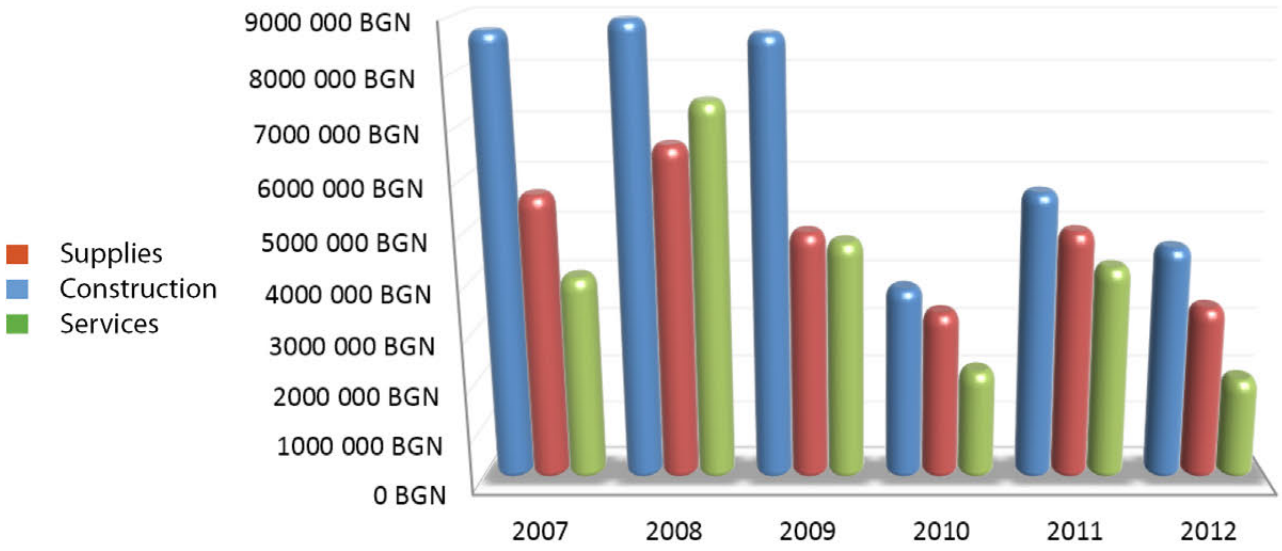
Number of PP's announced by the Public Progurement Agency vs. number of awaded PP contracts over the last 3 yrs.



Costs incurred in 2011 under Article 2 of OASPPC and Article 14 of PPL.



Tender procedures conducted under Article 2 of the Ordinance on the Award of Small Public Procurements Contracts (OASPPC) and Article 14, sections 4 and 5 of the PPA:



- *Total number of public procurements carried out without a procedure by virtue of Article 2 of the OASPPC and Article 14, sections 4 and 5 of the PPA: 1 599*
- *PP's announced by the Public Procurement Agency: 104*
- *Awarded PP contracts: 296*

The higher count of awarded contracts vs. tender procedures carried out is due to established systems for pre-selection of contractors. Each system is announced as one procedure within which an unlimited number of contracts can be awarded.

EXTERNAL AFFAIRS & COOPERATION (EAC)

It is of high relevance for ESO to establish, maintain and further deveop contacts with international organisations, government agencies and foreign companies operating on the energy field.

Membership in international organisations and initiatives

- *Full membership in ENTSO-E (the European Network Transmission System Operators for Electricity) which strives to facilitate an efficient and competitive single electricity market while maintaining a high degree of security of supply by complete coordination of TSO operations at pan-European level;*
- *Participation of the ESO's CEO and the NDC's Directior in the ENTSO-E General Assembly sessions and permanent representation of ESO experts in the main committees, working groups and subgroups;*
- *Active involvement in the European policies for development and integration of the SEE energy market into a single pan-European market based on the Energy Community Treaty;*
- *Commitment to the SECI activities (South East European Cooperative Initiative);*
- *Expressing the Bulgarian position in the World Energy Council (WEC);*
- *Expert participation in major international projects, e.g. Interconnection of the Turkish Power System to the CE Synchronous Area, IPS/UPS, SEE Regional Initiative, Black Sea Region ,etc.*

Liaison with other TSO's

- *Permanent and dependable cooperative contacts with neighbouring TSO's, i.e. JP EMS – Serbia, TEIAS – Turkey, ADMIE – Greece, Transelectrica S.A. – Romania, AD MEPSO – FYROM;*
- *Joint operation with all European TSO's.*

ESO is a highly valued partner at both national and international level.

ESO relations with other international institutions and companies in the energy industry

- *Sustained relations with global leaders in engineering, intelligent technologies, services and related activities, such as Siemens, ABB, General Electric, etc.;*
- *Involvement in EC initiatives;*
- *Cooperation with international electricity trading companies and various European PX's (OPCOM, NORDPOOL, NORDEL,etc).*

- *A working visit of AD MEPSO managing board;*
- *A wokshop venue with European Energy Exchange representatives;*
- *A workshop venue with representatives of NVE, Nord Pool, Transelectrica, OPCOM, ANRE, and MECMA;*
- *Regular meetings with Siemens Austria on the MMS projet;*
- *A workshop venue for procurement, installation and administration of an Automated Dispatch Control System at NDC;*
- *Visits by officials from neighbouring countries to carry out joint periodic controls of interconnector electricity meters;*
- *Fourth workshop on the Roadmap to Market Coupling of Bulgaria and Romania;*
- *Workshop with officials from Belarus and KEMA Consulting on electricity market arrangements and expected further development of the contacts;*
- *A meeting with Transelectrica to discuss the transmission grid development in the eastern parts of Romania and Bulgaria;*
- *A session of the ENTSO-E R&D Committee as part of its schedule;*
- *A kick-off meeting on the Norwegian project, phase 2;*
- *Signing a cross-border capacity allocation greement for 2013 with AD MEPSO.*

ELECTRICITY SYSTEM OPERATOR

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