АГЕНЦИЈА за ЕНЕРГЕТИКУ
РЕПУБЛИКЕ СРБИЈЕ

ENERGY AGENCY ANNUAL REPORT FOR 2011

АГЕНЦИЈА за ЕНЕРГЕТИКУ
РЕПУБЛИКЕ СРБИЈЕ

ENERGY AGENCY
ANNUAL REPORT
FOR 2011

Report on the Energy Sector of Serbia

Energy Agency Annual Report and Financial Report

Belgrade, May 2012

TABLE OF CONTENTS

1. FOREWORD

Through the adoption of the new Energy Law, the process of changes in the energy sector stepped into a new phase in 2011.

Pursuant to the new Law, apart from having an obligation to submit the report on the activities of the Agency and its financial operations, the Agency is obligated to submit a report on the energy sector to the National Assembly of the Republic of Serbia.

The report on the energy sector state of play in Serbia includes the preview of the following: the situation in the electricity and natural gas markets and partly in the oil and oil products market, security of electricity and natural gas supply, activities of general interest and energy customer protection. Bearing in mind its structure and contents, the Report is also in line with the recommendations of the Council of European Energy Regulators (CEER).

The implementation of the new Law implies the harmonisation of the existing by-laws and the adoption of new ones. Therefore, pursuant to the transitional provisions, the legal framework established under the former Law was mainly used in 2011. Since this is the first report on the energy sector which is submitted to the National Assembly and the first one following the entry into force of the new Law, its provisions and changes arising from the Law were presented in more detail, to the extent necessary so as to follow the content of the Report.

In 2011, there was regular electricity, natural gas and oil products supply in Serbia. Thermal power plants had reliable operations, providing for a high level of capacity use and increased electricity generation. For this reason, despite lower generation in hydro power plants, electricity import did not reach a high level. The operations of the underground natural gas storage with an increased capacity greatly contributed to the security of natural gas supply.

Changes in the energy markets worldwide had an adverse effect to the energy sector of Serbia.

In 2011, crude oil price exceeded its 2010 level by over 30%, resulting in the consequent natural gas price increase in Europe and, accordingly, in Serbia.

The new Law implies full transposition of the provisions of the so called Second Internal Energy Market Package of the European Union Legislation into the legal system of Serbia. It is aimed at making the energy sector more rational and more efficient in terms of costs, regulating monopoly activities, providing for market operations on the national level, but first of all on the regional and Pan-European level in a way which secures sustainable long-term development to the benefit of energy customers. The competences of the Agency are expanded and described in more detail and thereby, the Agency was given a great share of responsibility in market regulation. In autumn 2011, the Energy Community Ministerial Council adopted a decision on the implementation of the so called Third Package and a new step towards harmonisation of the regulations to the EU legislation is expected to be made.

Since its establishment, the Agency tended to build, strengthen and sustain a high level of professional capacities. It is ever more important to follow that tendency today, bearing in mind the necessity to face the challenges and competences as prescribed in the new Law and international commitments as efficiently as possible. The Agency also played an important role within the Energy Community institutions and provided support to the state institutions on both international and national level.

There are some unsettled strategic issues transferred to 2012 which will be highly relevant for the conditions of operation and functioning of the energy sector and energy markets in the years to come.

In line with the social wealth level, the implementation of the Treaty establishing the Energy Community also implies gradual acceptance of both European Union policy and global mechanisms in the fields of sustainable development, i.e. climate changes and increase of the share of renewable energy and energy efficiency.

New energy sector development strategy should make more feasible the conditions for long-term energy stability and principles of harmonisation of the Serbian energy sector to global and European requirements in a way which will be the best for customers and which will contribute to economic development. On the same grounds, energy companies need to adopt development plans as soon as possible.

Thereby, a more long-term pricing policy, removal of existing disbalances and creation of the environment which will be stable and stimulating enough for investments are enabled. The most important precondition for this is the establishment of an efficient protection mechanism for vulnerable energy customers.

Council of the Energy Agency of the Republic of Serbia

May 2012

REPORT ON THE ENERGY SECTOR OF SERBIA

2. REPORT ON THE ENERGY SECTOR OF SERBIA

2.1 Energy demand in Serbia

The Report indicates total energy demand in 2010 and forecast for 2011.[1]

Total primary energy supply in Serbia without Kosovo and Metohija (KiM) in 2010 amounted to 15.5 million tons of equivalent oil (mtoe) while 2011 level is estimated at 16.2 mtoe. Import dependence in 2011 was slightly lower than in 2010 when it amounted to 33.6%. Coal has the highest share in local generation, as given in Figure 2-1.

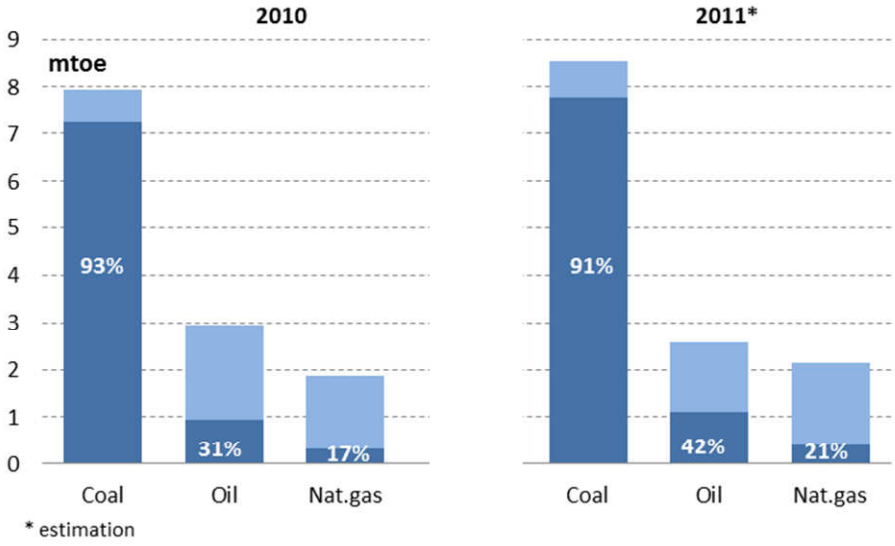

Figure 2-1: Consumption and primary energy mix in local generation in 2010 and 2011

Total final energy consumption in Serbia in 2010 amounted to 8.9 mtoe, while 2011 level is estimated at 9.3 mtoe. Households, industry and transport respectively have the biggest share in final energy consumption.

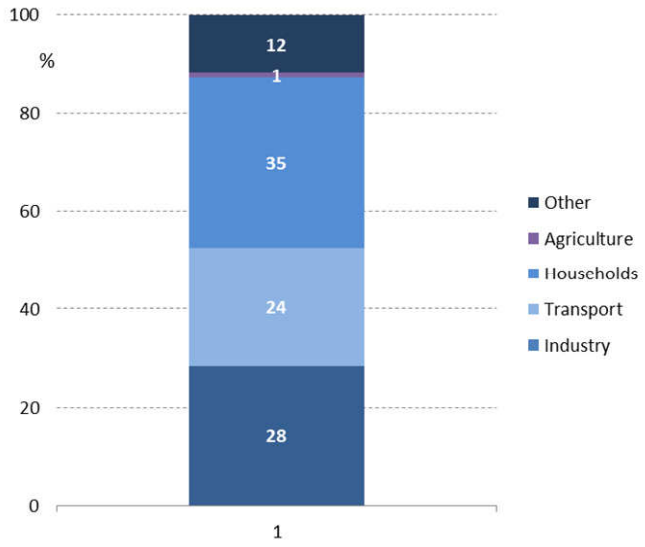

Figure 2-2: The share in final energy consumption in 2010

2.2 Electricity and natural gas markets in 2011

By the adoption of the new Energy Law, the conditions are created for a follow-up of reforms, especially in electricity and natural gas fields. The implementation of the new Law implies the harmonisation of the existing bylaws and the adoption of new ones in compliance with the deadlines. Therefore, with some exceptions, pursuant to the transitional provisions, the legal framework established under the former Law was mainly used in 2011. This Report primarily

[1] Energy Balance Sheet of the Republic of Serbia for 2012 Енергетски биланс Републике Србије за 2012. годину

presents the state of play pursuant to the provisions of the new Law. However, activities which were still undertaken under transitional provisions were specified.

2.2.1 Level of electricity and natural gas markets opening

All electricity and natural gas customers were entitled to regulated supply prices during 2011.

All electricity and natural gas customers except for households were entitled to freely select a supplier in the market. Speaking of potential, 49% of electricity market and 90% of natural gas market was thereby open, while the remaining part will be open as of January 1, 2015, when households will be entitled to free market supply.

Only natural gas customers exercised their right to buy gas on a free market while there was no interest for electricity since the regulated price of the Public Enterprise Electric Power Industry of Serbia (Elektroprivreda Srbije – JP EPS) was more favourable than the market price.

Around ten big customers procured gas at regulated prices, mainly from PE Srbijagas as a trader in a free market and from another trader as well. This was possible under conditions of incomplete regulation, for two reasons. There was a small number of customers and, since PE Srbijagas code was not adopted, PE Srbijagas allocated authority between different energy activities within the company and regulated relations with another trader in the free market. At the prices established in a free market, 33.5% in 2011 and 46.4% of total natural gas consumption was covered.

The tempo for further market opening is defined by the Law. As of January 1, 2013, the number of customers entitled to regulated price will be reduced. The following categories will be entitled to public supply:

- as of January 1, 2013, final electricity, i.e. natural gas customers with facilities connected to the distribution system (customers connected to the transmission system will be obliged to buy them in the market);
- as of January 1, 2014, only households and small electricity customers[2];
- as of January 1, 2015, only households and small natural gas customers.

The customer left without the supplier he freely chose will be entitled to:

- households or small customers – to restore to public supply;
- other customers – last resort supply, under the conditions stipulated by the Law, until January 1, 2015 for electricity and until January 2016 for natural gas, but 60 days at most.

If no supplier is selected by a customer connected to the system, the system operator is obliged to suspend electricity, i.e. natural gas supply.

Figure 2-3 indicates the openness of the electricity and natural gas markets in period 2010-2011 and the tempo for their openness in the period 2013-2016, as stipulated by the Law. Since 2013, the market will be opened in line with the tempo indicated in Figure 2-3, while both households and small customers will be entitled (not obliged) to buy commodity in the free market as of 2015.

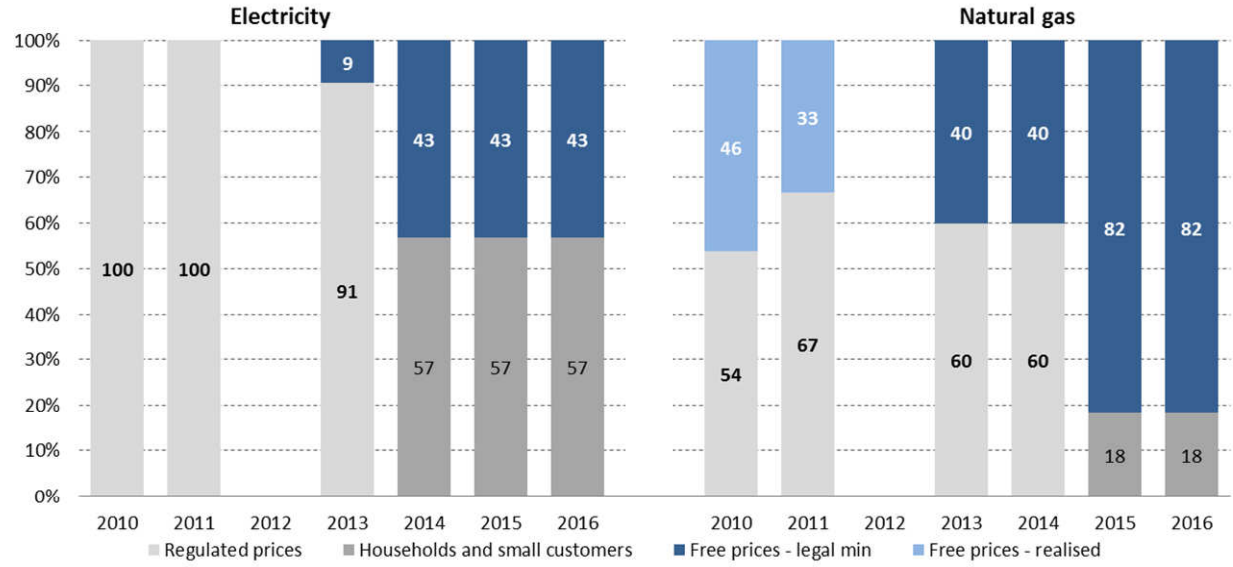

Figure 2-3: Electricity and natural gas market opening

[2] Small electricity or natural gas customers are final customers (legal persons and entrepreneurs) with less than 50 employees, total annual income of €10 million in RSD counter value and with all facilities connected to electricity distribution system of less than 1kV voltage, i.e. to the natural gas distribution system.

2.2.2 Conditions for market functioning

Some of the documents necessary for market functioning have already been adopted, such as:

- rules on conditions for issuance, modification and withdrawal of the energy licence;
- rules on transmission system operations (applied as of 2008) and on distribution system operations (applied as of 2010);
- rules on allocation of cross-border transmission capacity, applied for 2012 (so far interim rules were adopted every year);
- methodologies for the establishment of price for the access to electricity, i.e. natural gas transmission and distribution systems;
- methodologies for the establishment of costs for connection to the electricity, i.e. natural gas transmission and distribution systems.

Transmission system charges have been regulated since 2008, while electricity distribution system charges have been regulated since March 2010 for each of 5 distribution companies.

Natural gas transmission system charges have been regulated since 2008 while distribution system charges have been regulated since 2009.

The following ruless and methodologies which will enable compliance with the conditions for smooth market functioning are being prepared (the former Law did not stipulate the deadlines for the adoption of some of acts and energy entities did not adopt them):

- electricity market code;
- natural gas transmission system code, including necessary natural gas market code;
- natural gas distribution system code
- supplier switching rules;
- rules on monitoring technical and commercial indicators and on electricity and natural gas supply and delivery quality regulation;
- methodologies for the establishment of electricity and natural gas prices for public supply.

By the adoption of this Law, the conditions to continue working on electricity market code are met. The adoption of the code is expected in line with the stipulated deadline.

PE Srbijagas, with the assistance of the consultant financed by the European Union (EU) is preparing Natural Gas Transmission System Code and it is expected to be adopted. Upon the elaboration of all the codes, they will work on distribution system code. In the first place, distribution system operator of PE Srbijagas will work on them and all other operators will follow.

Pursuant to the Law, natural gas storage system code is adopted by the natural gas storage system operator and approved by the Agency. The access to the existing storage is not regulated and therefore, this document has not been drafted yet.

The Agency will adopt the supplier switching rules and methodologies for electricity and natural gas prices for public supply in line with the prescribed deadline as well as the code of organised electricity market within the deadline necessary for its establishment.

2.2.3 Regulated and free prices of energy and fuel

Although there is a great number of companies licenced for electricity (50) and natural gas (17) wholesale, there was no considerable progress in the development of free electricity and natural gas markets. In wholesale markets, in terms of local demand, there are two dominating public enterprises, PE EPS and PE Srbijagas.

Retail market is also mainly regulated since a great number of customers who were entitled to free market supply was not interested in it.

2.2.4 Security of electricity and natural gas supply

The security of electricity and natural gas supply was on an acceptable level in 2011. There are better conditions for electricity supply since it is produced from local resources and a small part of it is imported at times of lowest temperatures. Gas demand is mainly set by import only by one connection through Hungary.

There has been no explicit obligation to make a wholesale overview of security of supply so far. Some segments were mainly analysed as well as their interdependence. Based on these analyses, plans were made for further subsystems development while the overall energy policy was established by energy sector development strategy and planning documents.

The Law stipulates a set of activities performed by state bodies so as to provide for short-term and long-term security of electricity and natural gas supply:

- The Ministry in charge of energy issues prepares a report on security of electricity and natural gas supply every year and publishes it on the Ministry website. The report includes security of supply forecast for the

following five to fifteen years. The following issues are analysed: consumption forecast, planned generation and the way to secure missing quantities; reliability of electricity transmission and distribution system and of natural gas transmission, distribution and storage system; scope and quality of these systems maintenance; investment plan, including interconnections; national regional and European sustainable development objective; international projects effects; diversity of primary sources for electricity generation; condidtions under long-term gas supply contracts, especially for the period until validity date, as well as the liquidity rate of gas market; incentive measures for new investments in natural gas exploration, generation, transport and storage.

- The Government specifies the conditions for electricity and natural gas delivery and supply, as well as the measures which should be taken in case of endangered security of electricity and natural gas supply to customers due to disruptions in energy system operations or market disruptions;
- In case of endangered security of customers supply or energy system operations due to insufficient demand in the energy market or due to other extraordinary circumstances, the Government prescribes measures on electricity or natural gas restriction or special measures on import or export of certain energy sources, the manner and conditions for price establishment and control, the obligation to deliver energy to certain customers only or special conditions for energy activities with minimum energy market disruption in the region;
- Separate measures are planned for natural gas. Namely, the Government adopts:
  - Prevention action plan so as to provide for the security of natural gas supply which includes risk assessment in terms of security of supply and measures for mitigation of certain risks related to necessary transmission capacity which would meet total demand and secure supply for certain groups of final natural gas customers and
  - Crisis plan which establishes measures, energy entities which will be obliged to provide for the security of transmission system operations and security of supply of certain groups of final customers, natural gas quantity and capacity, in case of general shortage of natural gas overall natural gas shortage.

3. ELECTRICITY

3.1 Structure of the sector and capacities

3.1.1 Organisational and ownership structure of the electricity sector

The existing structure of the electricity sector was established in 2005 by unbundling and internal reorganisation of a common vertically integrated PE EPS, upon the adoption of the Energy Law in 2004. The structure of the electricity sector in the end of 2011 is indicated in Figure 3-1. Since a new Law was adopted in August 2011, some of the activities were performed pursuant to the former Law by the end of 2011, in line with transitional provisions of the new Law.

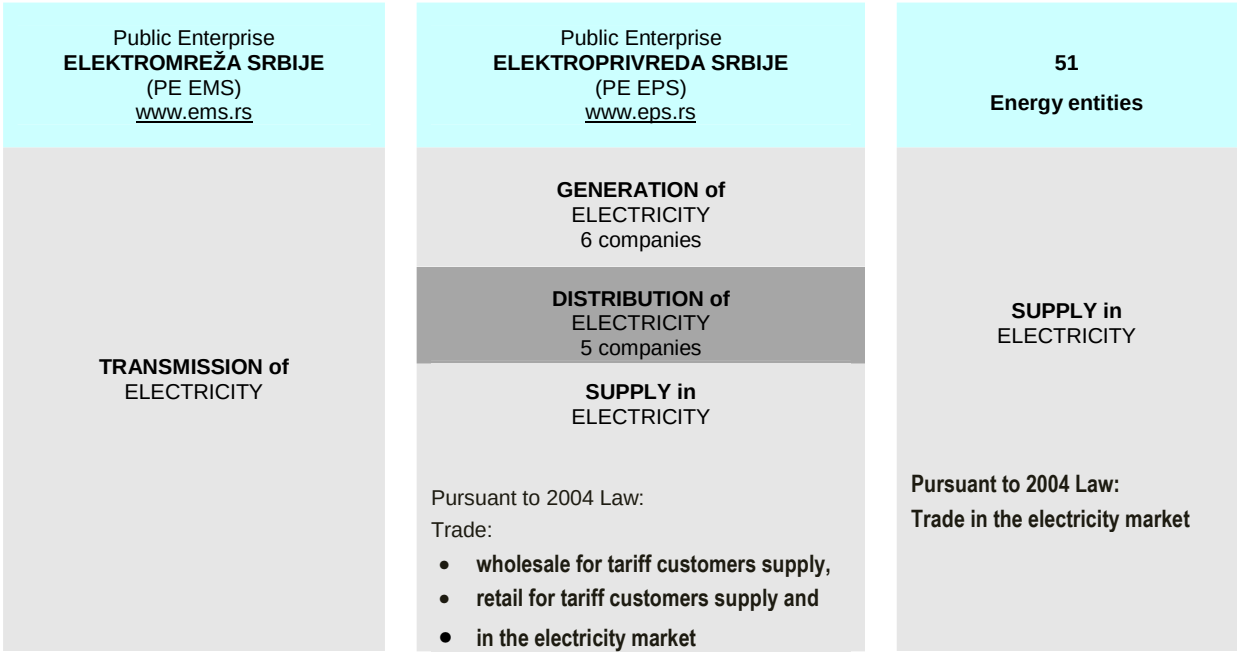

Figure 3-1: Ogranisational structure of the electricity sector

Two public enterprises were established by the Decision of the Government of the Republic of Serbia on July 1, 2005:

- PE EPS, a vertically integrated company with 11 companies performing energy activities: electricity generation, heat energy production in combined heat and power plants, electricity distribution and distribution system management (DS operator), trade in the electricity market, electricity trade for tariff customer supply and retail for tariff customers (trading licences were valid pursuant to 2004 Law until the end of 2011, in line with transitional provisions of the Law);

- Elektromreža Srbije (PE EMS), for electricity transmission, transmission system management and electricity market organisation.

Both enterprises are 100% state-owned.

Since 1999, a part of the power system on the territory of the Autonomous Province of Kosovo and Metohija (KiM) has been under UNMIK management.

Pursuant to the Law, PE EPS supplies final customers who do not buy electricity in the market at regulated prices.

Five distribution system operators function as branches of distribution companies within the vertically integrated PE EPS. Since there are over 100,000 customers connected to each of 5 distribution systems, final customers supply has to be legally unbundled from system operators. There are ongoing preparations for the unbundling procedure since the deadline is October 1, 2012.

3.1.2 Unbundling power operations and operator's independence

Separation of grid operations i.e. electricity transmission and distribution which represent natural monopolies, from generation, trade and supply as market operations is one of key elements of market reforms.

Electricity transmission and transmission system management were separated in 2005 into a separate company PE EMS.

Within PE EPS, electricity generation is separated into five companies. Electricity distribution is also performed in five companies which, in addition, perform electricity supply for tariff customers. Accounts are unbundled into distribution and supply areas, but there are different approaches in different companies in terms of criteria for separation of funds and personnel. The Law prescribes legal unbundling of distribution and supply operators which is also one of commitments arising from the Treaty establishing the Energy Community. During 2011, the activities on the unbundling were initiated and they are expected to be completed in 2012 in line with the Law. In addition, distribution system operator and final customer supplier are expected to be established as separate energy entities. The Law also defines a set of measures which should provide for distribution system operator's independence, especially in terms of decision making process on the funds necessary for management. Original company will be only in a position to approve annual financial plans of the system operator and define liability limits but not to issue everyday work guidance.

Electricity trade (for tariff customers and in the free market) is dealt with the original enterprise PE EPS.

Table 3-1: Unbundling of energy activities

	Transmission	Distribution/generation	Distribution/supply
	YES/NO	YES/NO	YES/NO
Ownership unbundling	YES	NO	NO
Unbundling in terms of legal form	YES	YES	NO
Separate headquarters	YES	YES	NO
Separate website	YES	YES	NO
Separate accounts	-	YES	YES
Audit of separate accounts	-	NO	NO
Publishing separate financial reports	-	YES	NO
Separate management bodies without managers from other energy operations	YES	YES	NO

3.1.3 Generation, transmission and distribution capacities

3.1.3.1 Generation

Total net installed capacity of the power plants within PE EPS without those on KiM, including small hydro power plants amounts to 7,203 MW. The structure is given in Figure 3-2. Thermal power plants (TPP) and combined heat and power plants (CHPs) hold 55%, while hydro power plants (HPP) including small HPP hold 40% of capacities. Within HPP PE EPS, there is one pump-storage hydro power plant with the capacity 2x307 MW, which is very important for system management. PE EPS also owns 13 small hydro power plants with total capacity of 19.8 MW.

Total net installed capacity of the power plants within PE EPS amounts to 8,379 MW, including small hydro power plants and power plants on the territory of Kosovo and Metohija (KiM), which are under UNMIK jurisdiction. In lignite-fired thermal power plants, the installed capacity amounts to 5,171 MW, in hydro power plants – 2,835 MW, in natural gas- fired or heat oil-fired thermal power plants - 353 MW, in small hydro power plants – 19.8 MW. The lignite used in thermal power plants is produced in open pits which belong to PE EPS.

These capacities are allocated in five companies: Hidroelektrane Djerdap llc, Drinsko-limske hidroelektrane llc, Panonske termoelektrane-toplane llc, Termoelektrane Nikola Tesla llc and Termoelektrane i kopovi Kostolac llc. Small hydro power plants are within companies for electricity distribution Elektrosrbija llc and Jugoistok llc.

PE EPS also operates two power plants which are not owned by PE EPS with total capacity of 374 MW. There are also 27 small power plants connected to power distribution companies with total installed capacity of 55 MW which are also not owned by PE EPS. These small power plants are active; they produce electricity and place it into the distribution system. Apart from these, there are power plants which are constructed so as to serve the customers' own needs, which are also connected with the distribution grid, but which do not work or place the electricity into the grid. In most cases, these are former big industrial companies with their own capacities for electricity generation, but which are not used or which are used as reserve capacities.

Table 3-2: Capacities for electricity generation in 2011 (without KiM)

Technology	Installed capacity MW
Hydro power plants	2,835
Thermal power plants (coal)	3,936
Combined heat and power plants	353
Gas fired power plants	-
Nuclear power plants	-
Other sources (renewable sources) – small PE EPS power plants	20
Small power plants – independent producers	59
TOTAL INSTALLED CAPACITY	**7,203**

Licence holders for electricity generation include companies for electricity distribution: Elektrosrbija llc, Jugoistok llc and the company Milan Blagojevic – Namenska JSC Lučani, which were awarded with the licence before 2011, while in 2011, the licences were awarded to ALLTECH SERBIA fermentation industry JSC Senta, GREEN WASTE LLC Belgrade and ECO ENERGO GROUP llc Novi Beograd. They all have small-scale generation facilities connected to the distribution grid.

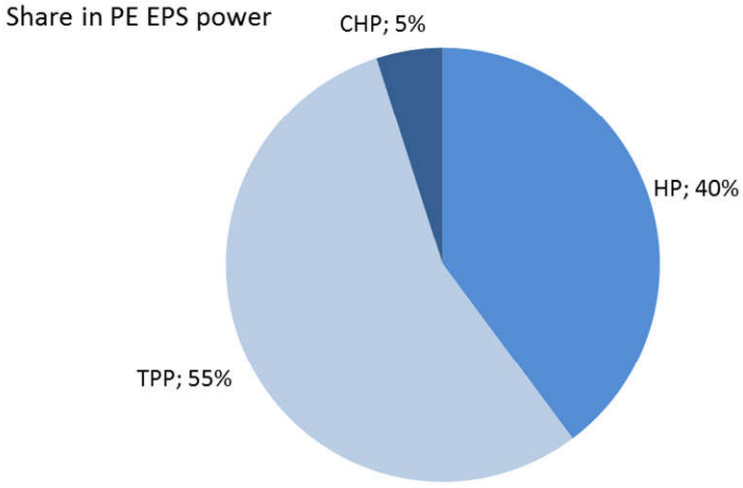

Figure 3-2: PE EPS generation capacities structure in 2011 (without KiM)

3.1.3.2 Transmission

Transmission system, without KiM, includes 28 transformer stations of 400/x and 220/xkV/kV with installed capacity of 13,283 MVA (25 transformer stations with 12,981 MVA of installed capacity are owned by PE EMS), 8 switchgear plants and lines of 400, 220 and 110 kV with total length of 9,432 km (8,991 km owned by PE EMS). PE EMS also owns 57 transformer stations of 110/x kV/kV which should be delegated to electricity distribution companies by the end of 2012.

Table 3-3: Transmission system of PE EMS (without KiM) in the end of 2011

Transmission system elements	Unit	
Network length per voltage levels	km	8,992
400 kV	km	1,514
220 kV	km	1,882
110 kV	km	5,596
Number of transformers		54
Number of transformer stations and switchgear plants		33
Number of (active) interconnections		25 (24)

3.1.3.3 Distribution

Electricity distribution on the territory of Serbia without Kosovo and Metohija is performed within five companies for electricity distribution - Elektrovojvodina LLC Novi Sad, Elektrodistribucija Beograd LLC Beograd, Elektrosrbija LLC Kraljevo, Jugoistok LLC Nis and Centar LLC Kragujevac. Distribution system without the territory of Kosovo and Metohija includes around 153,000 km of distribution lines, with voltage of 110, 35, 20, 10 and 0.4 kV and 34,881 MVA transformer stations with total installed capacity of 29, 155 MVA through which electricity is distributed to final customers.

There are 33,286 transformer stations owned by companies with total installed capacity of 24,968 MVA and around 147,500 km of distribution lines of all voltage levels. Their structure is given in Table 3-4. Untill the end of 2012, electricity distribution companies should be delegated with 57 transformer stations of 110/x kV/kV from PE EMS.

Table 3-4: Distribution lines length in the end of 2011 (without KiM)

Voltage level	Distribution company					Total
	Elektrovojvodina	EDB	Elektrosrbija	Jugoistok	Centar	
110 kV	15	31	213	116	115	**465**
35 kV	1,366	984	2,107	1,686	706	**6,849**
20 kV	7,219	0	1,491	0	0	**8,711**
10 kV	710	4,314	11,742	9,337	3,923	**30,026**
0,4 kV	13,605	11,383	44,787	19,487	12,155	**101,437**
Total	**22,900**	**16,712**	**60,341**	**30,635**	**16,899**	**147,488**

3.2 Consumption and generation

After ten years of stagnation and casual generation drop during the 90s, PE EPS has managed to increase the generation from existing capacities for around 30% since 2000. In 2011, generation from hydro power plants was under average values due to unfavourable hydrological situation and hydro power plants produced 25% less electricity than in 2010. For this reason, thermal power plants had the unprecedented generation which was 14% higher than in 2010 while in combined heat and power plants, it was almost 85% higher.

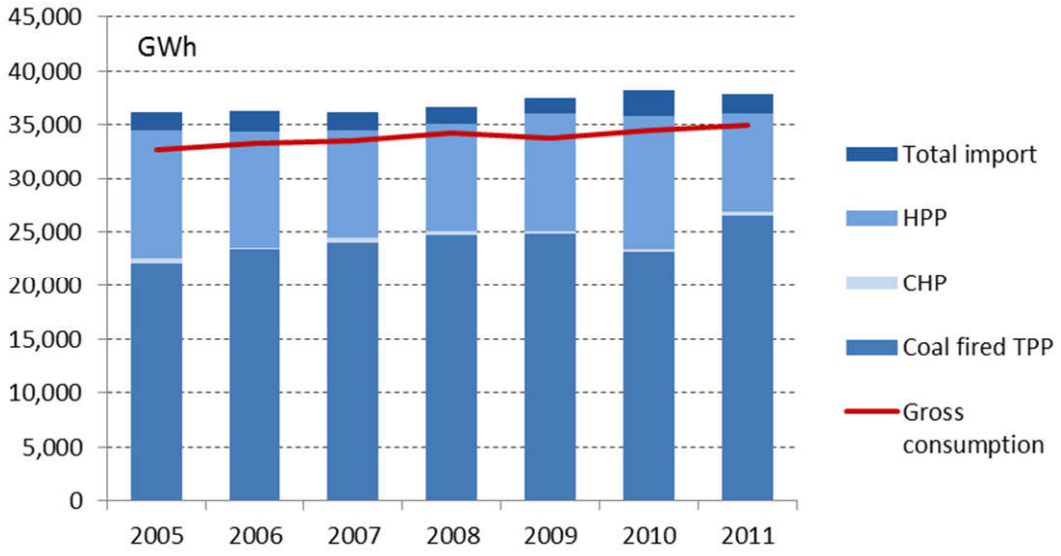

Figure 3-3: Generation, import and gross consumption in Serbia (without KiM)

In 2011, the plants connected to transmission and distribution system in Serbia produced 36,061 GWh. Coal fired thermal power plants produced 73.4% hydro power plants 25.4%, combined heat and power plants– district heating companies 1.1 % and other plants, mainly small plants connected to the distribution system 0.1%.

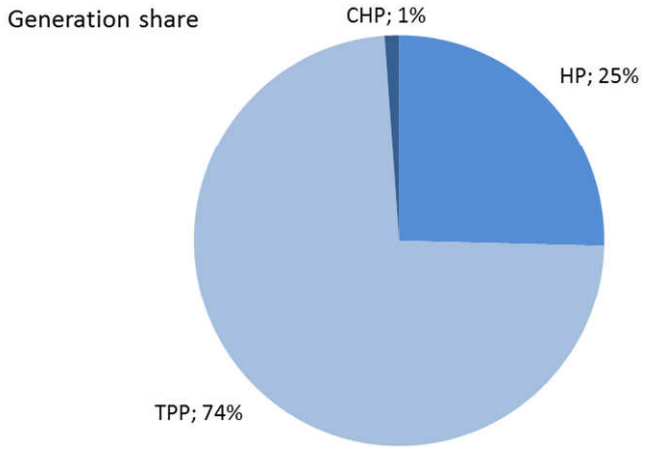

Figure 3-4: 2011 Generation structure (without KiM)

Table 3-5: : Electricity generation and consumption in 2005 – 2011 (without KiM)

	2005	2006	2007	2008	2009	2010	2011
GENERATION (GWh)							
Hydro power plants	11,924	10,850	9,930	10,011	11,045	12,420	9,145
Coal fired thermal power plants	22,138	23,361	24,016	24,661	24,880	23,162	26,462
Combined heat and power plants	382	180	483	367	139	222	408
Other power plants	57	53	40	40	48	61	46
Total generation	**34,501**	**34,444**	**34,469**	**35,079**	**36,112**	**35,865**	**36,061**
Other (UNMIK)	1	21	88	0	44	93	184
IMPORT							
Electricity import	662	853	792	616	121	755	1,106
Long-term contract with EP Montenegro	1,024	993	647	797	1,116	1,463	630
Annual contracts	3	0	249	121	85	86	64
Total import	**1,689**	**1,846**	**1,688**	**1,534**	**1,322**	**2.304**	**1,800**
TOTAL AVAILABLE	**36,191**	**36,311**	**36,245**	**36,613**	**37,478**	**38.262**	**38,045**
Electricity export	1,076	812	249	173	1,442	1,286	764
Long-term contract with EP Montenegro	1,285	1,201	1,235	1,220	1,184	1,204	1,210
Annual contracts	16	23	246	115	94	69	90
Total export	**2,377**	**2,036**	**1,730**	**1,508**	**2,720**	**2,559**	**2,064**
Pumping	962	852	864	878	903	1,049	860
Other (UNMIK)	169	99	133	59	71	145	199
Gross consumption	**32,683**	**33,324**	**33,518**	**34,168**	**33,784**	**34,509**	**34,928**
Transmission network losses	1,423	1,295	1,286	1,224	1,106	1,065	1,096
Distribution network losses	4,225	4,434	4,583	4,671	4,864	4,957	4,747
Total losses	5,648	5,729	5,869	5,895	5,970	6,022	5,843
Losses to gross consumption ratio	17.3%	17.2%	17.5%	17.3%	17.7%	17.5%	16.7%
Final consumption	**27,035**	**27,595**	**27,649**	**28,273**	**27,814**	**28,487**	**29,085**

3.3 Regulation of transmission system operator

PE Elektromreža Srbije is the holder of licences for energy operations such as transmission, transmission system management and electricity market organisation (market operator).

Transmission system operator is responsible for:

- safe and reliable transmission system operations and the quality of electricity delivery;
- transmission system management which provides for secure electricity delivery;
- non-discriminatory and economical access to the transmission sytem;
- transmission system development providing for long-term capability of the transmission system to comply with rational requirements in terms of electricity transmission;
- coordinated operations of the transmission system of the Republic of Serbia with interconnected transmission systems, i.e. with distribution systems in the Republic of Serbia;
- system balancing and provision of system services within the transmission system;
- determination of technical and technological requirements for connection of power facilities, devices and plants into a common system;
- accuracy and reliability of electricity measurements on delivery points from and into the transmission system and
- organisation and administration of electricity market within their jurisdiction.

and is obliged to:

- maintain and develop transmission network;
- adopt transmission system code;
- adopt rules on electricity market operations;
- adopt rules for allocation of cross-border transmission capacities;
- adopt transmission system development plan for at least ten years, harmonised with distribution systems development plan and requrements in terms of connection of generation and customers facilities;
- adopt a programme for securing non-discriminatory environment which includes measures which prevent discrimination, defines obligations of the personnel and code of conduct, appoints a person responsible for monitoring this programme realisation and reports on the implementation of adopted measures on regular basis;
- procure energy to recover losses within transmission network based on priciples of minimum expenses, transparency and non-discrimination;
- offer system services based on principles of minimum expenses, transparency and non-discrimination;
- monitor security of supply and submit the data which are to be incorporated into the report on security of supply to the Ministry;
- adopt a decision on the price of the access to the transmission system;
- establish electricity price for system balancing in line with the electricity market code;
- not to discriminate transmission system users or system user groups;
- apply the rules of relevant European associations of transmission system operators, if being a member of such associations;
- provide the information on efficient access to the system to transmission system users, based on principles of transparency and non-discrimination;
- secure confidentiality of commercially-sensitive information obtained during operations while publish the information by which advantage could be gained in the market in a non-discriminatory way;
- collect and publish the data and information related to electricity market transparency and monitoring, in particular the following: ten-year development plan for transmission network, total consumption and consumption forecast, annual overhaul plans for transmission capacities whose influence to available cross-border transmission capacity exceeds 100 MW, available cross-border capacity forecast, requested, allocated and total allocated capacity, price of the successful last bid in the process of allocation of cross-border transmission capacity and other data in line with the transmission system code and commitments arising from the membership in relevant European associations of transmission system operators;
- use transmission system facilities in line with technical regulations;
- take prescribed safety measures during the use of transmission system and other capacities which operate withing the transmission system;
- take measures aimed at energy efficiency increase and environment protection;
- exchange information necessary for safe and secure operations of the system with other system operators;
- determine technical and technological requirements for conncection of power facilities, devices and plants into a common system;
- submit the data and documentation necessary for price regulation to the Agency;
- issue a guarantee of origin and keep registry of issued guarantees of origin and
- regulate other issues relevant for transmission system operations.

Transmission System Operator Development Plan is approved by the Agency, as of 2012.

3.3.1 Transmission System Code

In May 2008, the Transmission System Code of Elektromreža Srbije has been introduced and previously approved by the Agency. This Code regulates technical aspects of transmission system operations and the relations between PE EMS as an energy entity responsible for electricity transmission and transmission system management and system users. The Code was published on websites of PE EMS and the Agency.

In October 2009, pursuant to Article 90 of the Energy Law, PE EMS adopted a five-year transmission grid development plan for 2009-2014, which was published on the website of PE EMS.

PE EMS initiated working on amendments of the Electricity Transmission System Code. In 2011, based on the proposal of PE EMS, expert teams from PE EMS and the Agency agreed on the draft amendments and supplements to three chapters: General Provisions, Technical Requirements for Connection to the Transmission System and Transmission System Access. On December 29, 2011, in line with legal jurisdiction, the Agency adopted a decision on approval of amendments and supplements to the Transmission System Code.

3.3.2 Regulation of prices of the access to the electricity transmission system

Upon the approval of the Government of the Republic of Serbia, regulated prices of access, i.e. use of the transmission system were applied on January 1, 2008 for the first time. The prices which have been valid since April 2011 are given in Table 3-6.

Table 3-6: Transmission system fee

RSD

Tariff element	Tariff rate	Unit	Tariff 01/04/2011
Power	Calculated power	kW	55.1222
	Extra power	kW	110.2445
Active energy	Higher day-time	kWh	0.2166
	Lower day-time	kWh	0.1083
Reactive energy	Reactive energy	Kvarh	0.1421
	Extra reactive energy	Kvarh	0.2842

Pursuant to the Law, the Agency prepared a new Methodology for Calculation of the Costs for Connection to Electricity Transmission and Distribution System. Expert debate was held with system operators and system users and this Methodology will be adopted in 2012.

3.3.3 Harmonisation with the EU directives

Transmission system operator's operations are harmonised with the Directive 2003/54/EC, as given in Table 3-7.

Table 3-7: Harmonisation of the PE EMS operations with the requirements of the Article 9 of the Directive 2003/54/EC

System operator obligations (Article 9 of Directive 2003/54/EC)	Tariff system	Methodology (connection price)	Code	Development plan
Ensuring the long-term ability of the system to meet reasonable demands for the transmission of electricity	YES	YES	YES	YES
Contributing to security of supply through adequate transmission capacity and system reliability	YES	-	YES	YES
Managing energy flows on the system, taking into account exchanges with other interconnected systems. To that end, the transmission system operator is responsible for ensuring a secure, reliable and efficient electricity system and, in that context, for ensuring the availability of all necessary ancillary services insofar as this availability is independent from any other transmission system with which its system is interconnected.	-	-	YES	-
Providing to the operator of any other system with which its system is interconnected sufficient information to ensure the secure and efficient operation, coordinated development and interoperability of the interconnected system	-	-	YES	YES
Ensuring non-discrimination as between system users or classes of system users, particularly in favour of its related undertakings	YES	YES	YES	-
Providing system users with the information they need for efficient access to the system	-	-	YES	-

3.3.4 Transmitted electricity quantities

Table 3-8 indicates the transmitted electricity quantities in 2011 in comparison to planned quantities for 2011 as in the balance sheet and the quantities transmitted in 2010. There were no considerable changes compared to 2010.

Electricity transit in 2011, calculated as a lower value of average power per hour as input, i.e. output from the transmission system through interconnection lines amounts to 5,368 GWh. Transit per each month is indicated in Table 3-9.

Table 3-8: Basic indicators of transmission plan realisation

	Balance		Realised			Realised (%)	
	2011 without KiM	2011 with KiM	2011 without KiM	2011 with KiM	2010 with KiM	2011 Realis./Bal. Without KiM	Realis. 2011/ Realis. 2010 With KiM
	1	2	3	4	5	3/1	4/5
Entry (GWh)	41,207	47,347	42,661	48,165	47,968	103.5	101.7
Losses (GWh)	1,155	1,337	1,096	1,278	1,247	95.0	95.6
Losses (%)	2.80	2.82	2.57	2.65	2.59	91.7	94.0
Exit (GWh)	40,052	46,010	41.565	46,887	46,903	103.8	101.9

Table 3-9: : Electricity transit per month in 2011

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Transit (GWh)	498	414	471	500	467	435	432	425	515	381	423	407

In 2011, 48,165 GWh, including Kosovo and Metohija, were transmitted in total. 41,265 GWh were produced in the power plants connected to the transmission system while 6,900 GWh were overtaken from the neighbouring systems. Within the part of the system without KiM, 42,661 GWh were transmitted. 35,959 GWh were produced without the power plants on KiM, 6.495 GWh were withdrawn from the neighbouring systems, while the rest - 207 GWh were overtaken from the territory of KiM.

Table 3-10: Transmitted energy, maximum load and losses (without KiM)

	Unit	2010	2011	2011/2010 (%)
Transmitted electricity	GWh	41,352	42,661	103.17
Maximum daily gross consumption	GWh	134,929	136,589	101.23
Maximum hourly load	MW	6,579	6,372	96.85
Transmission system losses	GWh	1,065	1,096	102.91
Transmission system losses (as % of transmitted electricity)	%	2.57	2.57	

The greatest share of the transmitted energy is delivered to electricity distribution systems (annually slightly over 70%), neighbouring system, pumped storage plants for pumping purposes and customers and other users with facilities directly connected to the transmission system respectively. Since 2005, transmission network losses were reduced from 3.38% to 2.57% in 2011.

Electricity consumption in Serbia, but in the region as well, is not balanced and it depends on the season. Therefore, maximum consumption is seen in wintertime at lowest temperatures or on days prior to holidays. It was the same case in 2011, when maximum daily gross consumption amounted to 136,589 MWh on February 2, 2011 at average daily temperature of -7.8 °C. On the same day, at 7 p.m., there was maximum hourly load and it amounted to 6.372 MW.

3.3.5 Use of cross-border transmission capacity

The Republic of Serbia has eight borders and eleven interconnection lines (400kV and 220kV) where PE EMS allocates the rights to use transmission capacities on the segments of interconnection lines -PE EMS and neighbouring transmission system operators have 50% each of transmission capacity. The exception is Serbian-Hungarian border where since 2011 there have been organised common explicit auctions for the allocation of 100% of available capacity. Namely, PE EMS organizes long-term auctions for the allocation of 100% of available capacity on both annual and monthly level, while MAVIR ZRt. allocates the available capacity on daily level.

3.3.5.1 Rules for allocation of cross-border transmission capacity

Being the electricity transmission system and market operator in Serbia, PE EMS is responsible for the allocation of rights to use available cross-border transmission capacities on interconnection lines of the Serbian power system. The mechanism for the allocation of rights to use available cross-border transmission capacities is defined by the Transmission System Code and the Rules for Allocation of Available Cross-Border Transfer Capacities on Borders of Control Area of Republic of Serbia and Balancing of Market Participants Schedules.

3.3.5.2 Allocation of rights to use cross-border capacity

PE EMS is responsible for calculation, allocation and use of cross-border transmission capacities on all borders of the control area of the Republic of Serbia. Tables 3-11 and 3-12 indicate average monthly amounts of net cross-border transmission capacities (NTC) on all borders in both directions.

Table 3-11: Average monthly amounts of NTC for entry into Serbia in 2011 (MW)

border/months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hun → Ser	600	600	561	600	600	600	600	600	600	600	600	600
Rom → Ser	550	595	637	637	440	417	445	448	442	608	592	598
Bul → Ser	500	500	500	350	350	383	500	477	233	247	350	300
Mac → Ser	250	250	250	0	194	250	250	250	250	350	300	300
Alb → Ser	210	210	210	210	210	182	210	210	210	210	210	210
Mon → Ser	500	500	450	500	411	500	400	400	500	450	450	500
BiH→ Ser	400	450	550	550	450	400	484	419	413	400	400	500
Cro → Ser	400	450	450	450	450	400	434	361	373	400	400	500

Table 3-12: Average monthly amounts of NTC for exit from Serbia in 2011 (MW)

border/months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ser → Hun	700	700	655	700	700	700	700	700	700	700	700	700
Ser → Rom	300	350	326	383	219	265	280	263	198	318	383	450
Ser → Bul	350	350	350	300	197	220	270	300	108	223	200	400
Ser → Mac	580	550	520	0	339	472	450	450	400	526	600	600
Ser → Alb	210	210	198	210	195	170	210	210	166	210	210	210
Ser → Mon	600	500	481	450	427	450	400	534	450	259	600	600
Ser → BiH	350	350	350	497	326	417	331	374	357	300	500	500
Ser → Cro	350	350	350	408	326	417	281	316	270	300	500	500

In 2011, PE EMS organised explicit auctions of cross-border transmission capacities for all borders and direction in the control area of the Republic of Serbia.

In line with the Rules for Allocation of Available Cross-Border Transfer Capacities on Borders of Control Area of Republic of Serbia and Balancing of Market Participants Schedules for period 01/01/2011 – 31/12/2011", PE EMS organised explicit auctions for 50% of available capacity based on principle ""pay as bid" on the following borders: Serbia-Albania, Serbia -Bosnia and Herzegovina (BiH), Serbia-Bulgaria, Serbia-Croatia, Serbia-Montenegro, Serbia-Macedonia and Serbia-Romania. The allocation of the other 50% of capacities was organised by neighbouring transmission system operators in compliance with their rules.

The Rules for 2011 (version 1.0) were published on October 21, 2010. The amendments and supplements of the Rules were made once. Version 1.1 of the Rules which were published on December 27, 2010, PE EMS introduced a modification in terms of right to use allocated cross-border transmission capacity. Namely, the principle "use it or lose it" which was applied on all the borders and which related to the capacity reservation only for nomination of working plans within the process "day ahead" was modified for the border with Croatia. On Serbian-Croatian border, allocated capacity was reserved for the nomination of plans both in "day ahead" and "intraday".

In the end of 2010, PE EMS made an agreement with the Hungarian transmission system operator (MAVIR ZRt.) on organisation of joint explicit auctions in 2011 for the allocation of 100% of available capacity on the Serbian-Hungarian border. It was agreed for PE EMS to organise long-term auctions for the allocation of 100% of available capacity (annual and monthly auctions), while MAVIR was supposed to allocate the available capacity on a daily level.

In line with Yearly and Monthly Auctions Rules for the allocation of transmission capacities at the border of control areas of JP Elektromreža Srbije and MAVIR ZRt. for the year 2011, all companies registered in the European Union or in the Contracting Parties of the Treaty establishing the Energy Community were entitled to participate. A new market method for collection of capacity reservation in case of congestion – marginal price was introduced by these Rules.

All energy entities which held the licence for electricity trade and which signed a “Contract on Exercising the Right for Cross-Border Transmission Capacity on the Borders of the Control Area of the Republic of Serbia and Balancing of Market Participants Schedules for the period 01/01/2011 at midnight-31/12/2011 at midnight” were entitled to participate. In 2011, there were 35 participants who exercised their right in the auctions for 50% of the available capacity. 21 of them actively participated in the auctions. There were 28 participants in the auctions for 100% of available capacity on the Serbian-Hungarian border while there were 41 eligible ones.

Table 3-13: General data on annual auctions for the allocation of 50% of available cross-border transmission capacities in 2011

Border - direction	Congestion scale: total demanded/total allocated capacity	Number of participants in auctions	Price of the last successful bid in case of congestion EUR/MWh
Albania – Serbia	6.67	8	0.41
BiH- Serbia	7.20	12	0.62
Bulgaria- Serbia	5.45	15	2.33
Croatia- Serbia	3.50	8	0.55
Montenegro- Serbia	4.40	10	0.23
Macedonia- Serbia	4.40	11	0.29
Romania- Serbia	5.33	14	2.69
Serbia –Albania	5.80	7	2.50
Serbia –BiH	4.60	9	0.13
Serbia -Bulgaria	5.00	14	0.97
Serbia –Croatia	5.80	12	0.61
Serbia – Montenegro	6.30	10	0.23
Serbia –Macedonia	4.00	12	0.47
Serbia -Romania	3.47	11	0.15

In 2011, PE EMS organised monthly auctions for the allocation of 50% of available capacity for each month, on all the above given borders and in all directions. The number of participants on monthly auctions per each month for 2011 is given in Table 3-14. The general data on monthly auctions are given in Table 3-15.

Table 3-14: Number of participants in monthly auctions for 2011

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
No. of participants (2011)	17	16	15	15	17	15	16	16	14	14	16	16

Table 3-15: General data on monthly auctions for the allocation of 50% of available cross-border transmission capacities in 2011

Border – direction	No. of days with "0" capacity	Number of congestions/total number of auctions	Congestion scale: total demanded/total allocated capacity	Number of participants in auctions (min.-max.)	Range of prices of the last successful bid in case of congestion EUR/MWh
Alb-Ser	4	12 / 13	0.80 – 4.33	4 – 8	0.01 – 1.57
BIH- Ser	0	14 / 15	0.68 – 2.43	7 – 12	0.02 – 0.43
Bul - Ser	27	20 / 20	1.93 – 7.78	9 – 15	1.00 – 12.54
Cro- Ser	5	13 / 13	1.03 – 2.65	5 – 8	0.01 – 0.48
Mon- Ser	0	10 / 13	0.85 – 1.65	8 – 11	0.01 – 0.11
Mac- Ser	37	11 / 11	2.13 – 4.27	7 – 11	0.09 – 1.37
Rom- Ser	3	42 / 42	1.23 – 4.72	7 – 12	0.05 – 5.45
Ser -Alb	4	18 / 18	2.00 – 3.78	4 – 7	0.13 – 4.35
Ser –BIH	0	22 / 22	1.02 – 4.07	9 – 12	0.02 – 0.53
Ser –Bul	18	15 / 16	0.97 – 5.40	6 – 12	0.02 – 0.23
Ser –Cro	5	20 / 20	1.29 – 5.40	7 – 10	0.03 – 1.66
Ser – Mon	0	21 / 22	0.98 – 4.75	9 – 11	0.02 – 0.57
Ser –Mac	37	17 / 17	1.52 – 4.64	9 – 12	0.07 – 1.57
Ser –Rom	16	31 / 36	0.90 – 3.43	4 – 11	0.01 – 0.08

In 2011, PE EMS organised the allocation of 50% of available capacity on weekly level as well, for the capacity exceeding annual and monthly auctions and due to the modifications of NTS upon the initiative of the neighbouring transmission system operators. In 2011, weekly auctions were ogranised for the 22nd week (May and June), 42nd week (October) and 46th, 47th, 48th and 49th week (November).

Table 3-16: General data on weekly auctions for cross-border transmission capacities in 2011 – for 22nd, 42nd and 47th week (when there were congestions)

Border – direction Period		ATC MW	Total demand capacity MW	Congestion scale: total demanded/total allocated capacity	No. of participants in weekly auctions	Price of the last successful bid in case of congestion EUR/MWh
Rom - Ser	22nd w- May	50	80	1.60	2	0.53
	22nd w -Jun	50	100	2.00	2	0.63
Bul - Ser	42nd w- Oct	25	78	1.56	5	10.40
Rom - Bul	47th w-Nov	20	28	1.40	2	0.05

On the Serbian-Hungarian Border, in 2011, there were 18 participants, and there were congestions in both directions. General data on common annual auctions are given in Table 3-17.

Table 3-17: General data on common annual auctions for cross-border transmission capacities in 2011

Border – direction	Congestion scale: total demanded/total allocated capacity	No. of participants in auctions	Marginal price EUR/MWh
Hungary- Serbia	3.50	16	0.41
Serbia -Hungary	4.60	17	1.02

Number of participants as well as other general data on common monthly auctions on Serbian-Hungarian border in 2011 are given in Table 3-18.

Table 3-18: General data on common monthly auctions for the allocation of 100% of available cross-border transmission capacities in 2011 on Serbian-Hungarian border

Border – direction	No. of days with "0" capacity	Number of congestions/total number of auctions	Congestion scale: total demanded/total allocated capacity	No. of participants in auctions (min-max)	Marginal price range EUR/MWh
Hungary- Serbia	2	12 / 12	1.14 – 3.50	8 – 17	0.02 – 0.57
Serbia -Hungary	2	11/12	0.98 – 2.13	13 – 18	0.05 – 1.53

For 2011, PE EMS concluded "Technical Agreement on Cross-Border Capacity Reservation on the Borders of Control Area of the Republic of Serbia and the Republic of Montenegro" with PE EPS so as to provide cross-border capacities for the realisation of the long-term contract on operational-technical cooperation between PE EPS and EPCG.

The capacity reservation price represents the price of the last successful bid on that border during annual auctions for 2011. Table 3-19 indicates the data on PE EPS capacities allocated in advanced, based on the Agreement.

Table 3-19: Cross-border transmission capacities (MW) allocated in advance in 2011 from Serbia towards Montenegro

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cross-border transmission capacity (MW)	58	58	58	58	116	58	73	58	58	58	58	58

In 2011, PE EMS had follow-up discussions with transmission system operators from the neighbouring countries on the organisation of joint auctions in line with Regulation 1228/2003 on other borders within its control area as well. The greatest progress has been made with the representatives of the transmission system operators from Romania (Transelectrica), Bulgaria (ECO), Macedonia (MEPSO) and Croatia (HEP-OPS).

They continued working on rules, contracts, documents and modernisation of information systems PE EMS (DAMAS system) aiming at automatic exchange of information with the neighbouring transmission system operators and ever more efficient and transparent functioning of the electricity market in the Republic of Serbia.

Pursuant to Articles 46 and 72 of the Law, PE EMS submitted the rules for the allocation of cross-border transmission capacities for 2012 to the Energy Agency. On October 27, 2011, the Energy Agency adopted a decision on giving approval to the "Rules for Allocation of Available Cross-Border Transfer Capacities on Borders of PE EMS Control Area for period 01/01/2012 – 31/12/2012". In addition, on December 1, 2011, the Energy Agency adopted a decision on approval to the "Agreement between the Transmission System Operator of the Republic of Hungary – MAVIR ZRt. and the Transmission System Operator of the Republic of Serbia – PE EMS on the Procedure for the Allocation of the Rights to Use Cross-Border Capacities and the Access to Cross-Border Transmission Capacities for 2012".

3.3.5.3 Annual exchange through the borders of the control area

Total scale of cross-border transactions in 2011 amounted to 11,171 GWh in entry direction, i.e. 11,481 GWh in exit direction from the market area of Serbia, while the scale of internal transactions amounted to 10,004 GWh. Table 3-20 indicates the scale of nominated and confirmed internal and external (cross-border) transactions in the period 2008-2011.

Table 3-20: Cross-border and internal transactions in the Serbian market area 2008-2011

Year	**Cross-border transactions– entry** GWh	**Cross-border transactions– exit** GWh	**Internal transactions** GWh
2008	7,077	7,203	2,045
2009	6,883	8,681	3,679
2010	10,551	11,581	5,835
2011	11,171	11,481	10,004

In addition to Table 3-20, cross-border exchange was also realised through the island operations within the distribution system (47,692 MWh in direction from Serbia towards Bosnia and Herzegovina and 596 MWh in the opposite direction).

Part of the quantities given in table 3-20 are related to electricity exchanged towards, i.e. with KiM. Electricity exchange with KiM was realised through internal and external transactions. Table 3-21 indicates the scale of external and internal transactions with KiM in the period 2008-2011.

In addition to Table 3-21, a part of internal exchange related to KiM was realised with a part of transmission and distribution system on the north of KiM (28,018 MWh was delivered to PE Elektrokosmet through the distribution system, while 170,962 MWh through the transmission system).

Table 3-21: Part of cross- border and internal transactions related to KiM 2008-2011

Year	Cross-border transactions – delivery to KiM GWh	Cross-border transactions– reception by KiM GWh	Internal transactions – delivery to KiM GWh	Internal transactions– reception by KiM GWh
2008	162	160	575	135
2009	522	125	245	149
2010	142	129	676	222
2011	31	88	785	283

Table 3-22 indicates the scale of cross-border electricity transactions for each border.

Table 3-22: Entry and exit nominated cross-border transactions for each border for 2011

Entry from	MWh	Entry to	MWh
Romania	**GWh**	Romania	**GWh**
Bulgaria	2,904	Bulgaria	52
Macedonia	2,802	Macedonia	154
Montenegro	402	Montenegro	2,005
Albania	307	Albania	2,793
Bosnia and Herzegovina	164	Bosnia and Herzegovina	1,428
Croatia	764	Croatia	1,274
Hungary	423	Hungary	1,028
On all borders	3,405		2,747

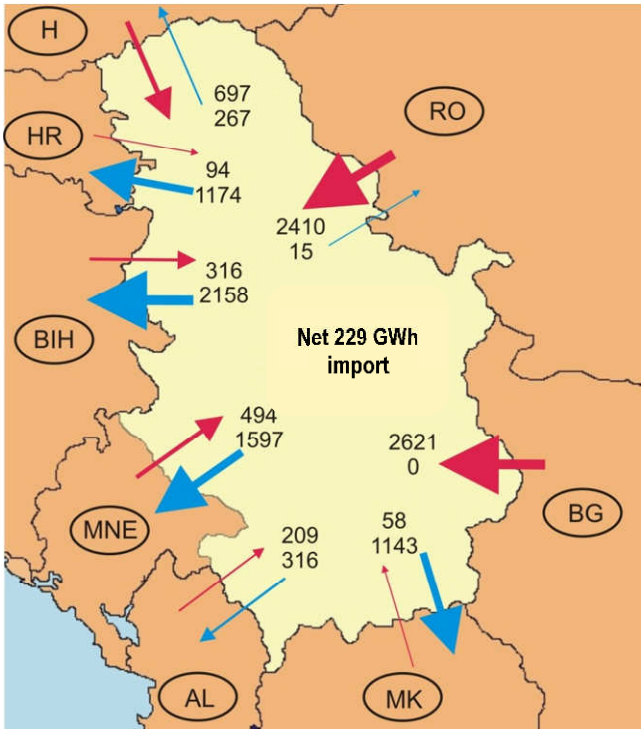

Figure 3-5: Physical flows – electricity exchange on the borders of the control area of the Republic of Serbia in 2011 (GWh)

The difference between commercial and physical flows is similar to the generation volume of HPP Piva.

3.3.6 Balancing

Being transmission system operator, PE EMS is responsible for power system balancing in the Republic of Serbia.

Technical balancing aspects are defined in the Transmission System Code. Commercial balancing aspects will be defined by the Market Code.

In technical terms, balancing is realised based on the Transmission System Code and the “Contract on System Services, Procurement and Delivery of Emergency and Balance Electricity” for 2011 which was concluded with the PE

EPS through secondary regulation and by activating the order for the engagement of tertiary regulation, in line with the engagement list.

At the moment (until the adoption of the Market Code), tertiary regulation is activated in line with the schedule for the engagement of generation capacities submitted by PE EPS to the transmission system operator (PE EMS). Emergency exchange is organised in line with the contracts concluded between PE EMS and neighbouring transmission system operators. Balancing costs are compensated to PE EMS based on the "Methodology for Setting Tariff Elements for the Calculation of the Price of Access and Use of the Electricity Transmission System".

In accordance with the obligation of all electricity market players to keep their electricity generation, consumption and exchange balanced, PE EMS realised forced balancing of those market players whose daily operations plan was still imbalanced even following the harmonisation process. Thus, PE EMS delivered 260 MWh to market players while 20 MWh were received by PE EMS in 2011.

3.4 Regulation of the distribution system operator

PE EPS acts as distribution system operator. Daughter companies within EPS are holding licences for the performance of electricity distribution and distribution system management.

Transmission system operator is responsible for:

- safe and reliable distribution system operations and the quality of electricity delivery;
- distribution system management;
- non-discriminatory and economical access to the distribution system;
- distribution system development providing for long-term capability of the distribution system to comply with rational requirements in terms of electricity distribution;
- determination of technical and technological requirements for connection of power facilities, devices and plants into a common system;
- provision of the information relevant for an efficient access to the distribution system to energy entities and distribution system users, based on principles of transparency and non-discrimination and
- accuracy and reliability of electricity measurements on delivery points from and into the distribution system

and is obliged to:

- maintain and develop distribution network;
- adopt distribution system code;
- adopt distribution system development plan for at least ten years, harmonised with transmission system development plan, other distribution systems plans and requrements in terms of connection of generation and customers facilities;
- adopt a plan for taking over metering devices, switchboards, connection lines, installation and equipment in the switchboard and other devices within the connection in the facilities of existing customers or producers;
- adopt a programme for securing non-discriminatory environment which includes measures which prevent discrimination, defines obligations of the personnel and code of conduct, appoints a person responsible for monitoring this programme realisation and reports on the implementation of adopted measures on regular basis;
- submit the data which are to be incorporated into the report on security of supply to the Ministry;
- adopt a decision on the price of the access to the distribution system in compliance with the Law;
- publish connection pricess;
- adopt a plan for system loss reduction if losses exceed the level which is justified in technical terms;
- procure energy to recover losses within the distribution network based on priciples of minimum expenses, transparency and non-discrimination;
- not to discriminate distribution system users or system user groups;
- provide the information on efficient access to the system to distribution system users, based on principles of transparency and non-discrimination;
- secure confidentiality of commercially-sensitive information obtained during operations while publish the information by which advantage could be gained in the market in a non-discriminatory way;
- collect and publish the data and information relevant for compliance with prescribed commitments in terms of transparency and electricity market monitoring;
- verify and submit the data relevant for electricity market administation to the transmission system operator, pursuant to the electricity market code;
- perform exploitation of distribution facilities and the facilities belonging to distribution system users in line with prescribed conditions;
- take prescribed safety measures during the use of distribution system and other capacities which operate within the distribution system;
- take measures aimed at energy efficiency increase and environment protection;

- submit the data and documentation necessary for price regulation to the Agency;
- submit all the data on electricity produced in facilities for which guarantee of origin is issued to the transmission system operator and
- regulate other issues relevant for distribution system operations.

Distribution System Operator Development Plan is approved by the Agency, as of 2012.

Pursuant to the Law, distribution system operator is obliged to take over metering devices, switchboards, connection lines, installation and equipment in the switchboard and other devices within the connection in the facilities of existing customers or producers since these devices and equipment are part of the distribution system. The plan for taking them over will be adopted by the operator upon making analysis of the situation with metering devices, switchboards, connection lines, installation and equipment in the switchboard and upon determining necessity to replace them or adjust them to the requirements stipulated by technical regulations and distribution system code.

Distribution system operator is entitled to relocate the metering point pursuant to technical conditions as defined by the code of the system to which the facility is connected, while the relocation costs are borne by the operator.

In 2011, energy distribution entities still performed retail for the purpose of tariff customers' supply, while they concluded the contracts with tariff customers they supply.

3.4.1 Distribution System Code

The Agency approved the Distribution System Code on December 25, 2009 for all five companies for electricity distribution within PE EPS and the Code has been implemented since the first quarter of 2010. The Code regulates technical conditions for connection of customers to the system, technical and other conditions for safe operation of the distribution system and for the provision of reliable and continuous delivery of electricity to customers, procedures in case of crisis, rules on third party access to the distribution system, functional requirements and the category of measuring devices, electricity measuring method and other conditions.

3.4.2 Regulation of the price of access to the electricity distribution system

In 2009, distribution companies submitted the proposal of distribution system charges to the Agency for the first time and the corrections were awarded with a favourable opinion. Upon the approval of the Government, these prices have been applied since March 1, 2010. The implementation of these tariffs enables the customers connected to the distribution network to select another supplier if they wish to and buy electricity from the supplier in the open market. The present prices for the use of distribution network are available on the Agency website (www.aers.rs).

Pursuant to the Law, the Agency prepared a new Methodology on Setting Costs for Connection to the Electricity Distribution System. Expert debate with operators and system users was held. The Methodology will be adopted in 2012.

3.4.3 Harmonisation with the EU directives

Methodologies and tariff systems are applied by distribution system operators. In addition, they adopted their code. In 2011, distribution companies did not adopt development plan. Pursuant to the Law, as of 2012, they are obliged to adopt a distribution system development plan for at least ten years' time which should be harmonised with the development plans of the transmission system, other distribution systems and applications for the connection of producers' and customers' facilities to the system.

Distribution system operations are harmonised with the Directive 2003/54/EC, as given in Table 3-23.

Table 3-23: Harmonisation of distribution companies operations with the requirements of the Article 14 of the Directive 2003/54/EC

System operator obligations (Article 9 of Directive 2003/54/EC)	Tariff system	Methodology (connection prices)	Code	Development plan
Maintain a secure, reliable and efficient electricity distribution system	YES	YES	YES	NO
Non-discriminate between system users (or classes of system users)	YES	-	YES	NO
Provide system users with the information they need for efficient access to the system	-	-	YES	-
Procure the energy they use to cover energy losses according to transparent, non-discriminatory and market-based procedures	-	-	YES	-
Non-discriminate between system users or classes of system users, particularly in favour of its related undertakings	YES	YES	YES	-

3.4.4 Distributed electricity quantities

The electricity delivered to customers through the distribution system is almost fully withdrawn from the electricity transmission system. Only a small portion of it is provided from the power plants connected to the distribution system.

Table 3-24: Electricity quantities distributed in 2005 – 2011

GWh, %

	2005*	2006*	2007*	2008	2009	2010	2011
Total electricity withdrawn by the distribution system	28,556	29,030	29,355	29,942	29,970	30,453	30,604
Withdrawn from the transmission grid (excluding customers connected to 110 kV)	28,499	28,977	29,315	29,902	29,922	30,392	30,558
Distribution power plants generation	57	53	40	40	48	61	46
Total delivered electricity quantities (excluding customers connected to 110 kV)	24,331	24,596	24,772	25,271	25,106	25,496	25,797
Distribution system losses	4,225	4,434	4,583	4,671	4,864	4,957	4,747
Distribution system losses (as% of total withdrawn energy)	14.8	15.3	15.6	15.6	16.2	16.3	15.5

Electricity losses within the distribution system exceed the technically justified ones, which is primarily due to unauthorized connections to the distribution network and unauthorized withdrawal (theft) of electricity. In addition, losses are increased due to long-term low investments into the distribution network. Another problem includes a big delay in terms of replacement of meters. Distribution system operators intensified their activities on losses reduction in 2011, mainly by greater control of metering points so as electricity theft could be identified. Some results can be seen. Namely, the losses in 2011 were reduced for over 200 GWh and they amounted to 15.5% of total withdrawn energy quantities.

3.5 Regulation of prices for regulated electricity supply

Pursuant to the 2004 Law, regulated electricity prices for final customers were applied on January 1, 2008 for the first time, upon the approval given by the Government of the Republic of Serbia.

Figure 3-6 indicates the structure of the regulated electricity price for final customers, which are applied as of April 1, 2011.

Present regulated electricity prices for final customers are available on the Agency website (www.aers.rs).

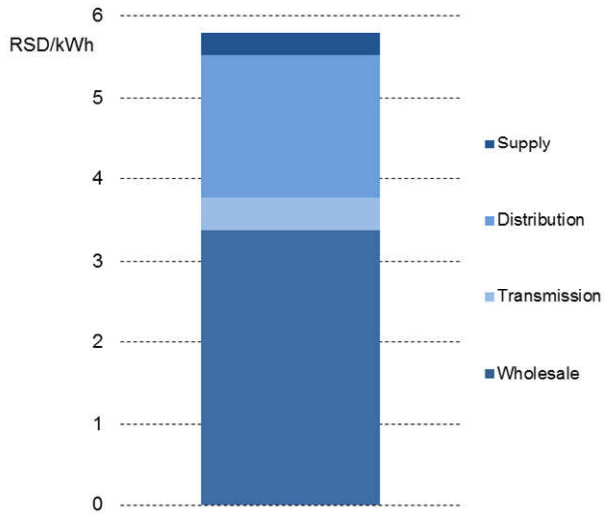

Figure 3-6: Structure of average retail regulated electricity price for final customers

Figures 3-7 and 3-8 indicate comparative review of electricity prices for standard customers for households and industry in Serbia, EU countries and the region in the second half of 2011. They are calculated in line with EUROSTAT methodology. The prices in Serbia for both customer categories were the lowest ones in this period.

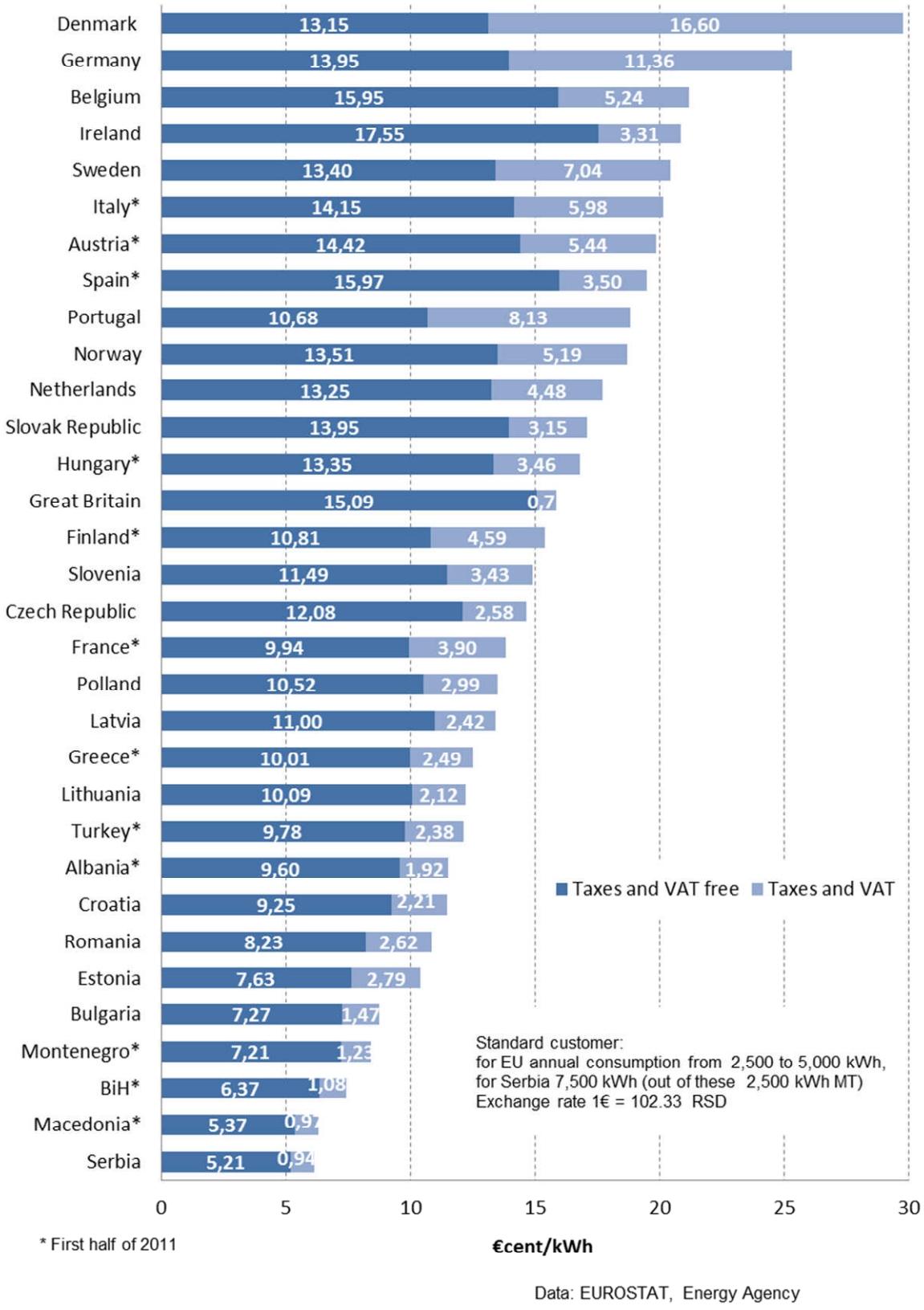

Figure 3-7: Electricity prices for households – second half of 2011

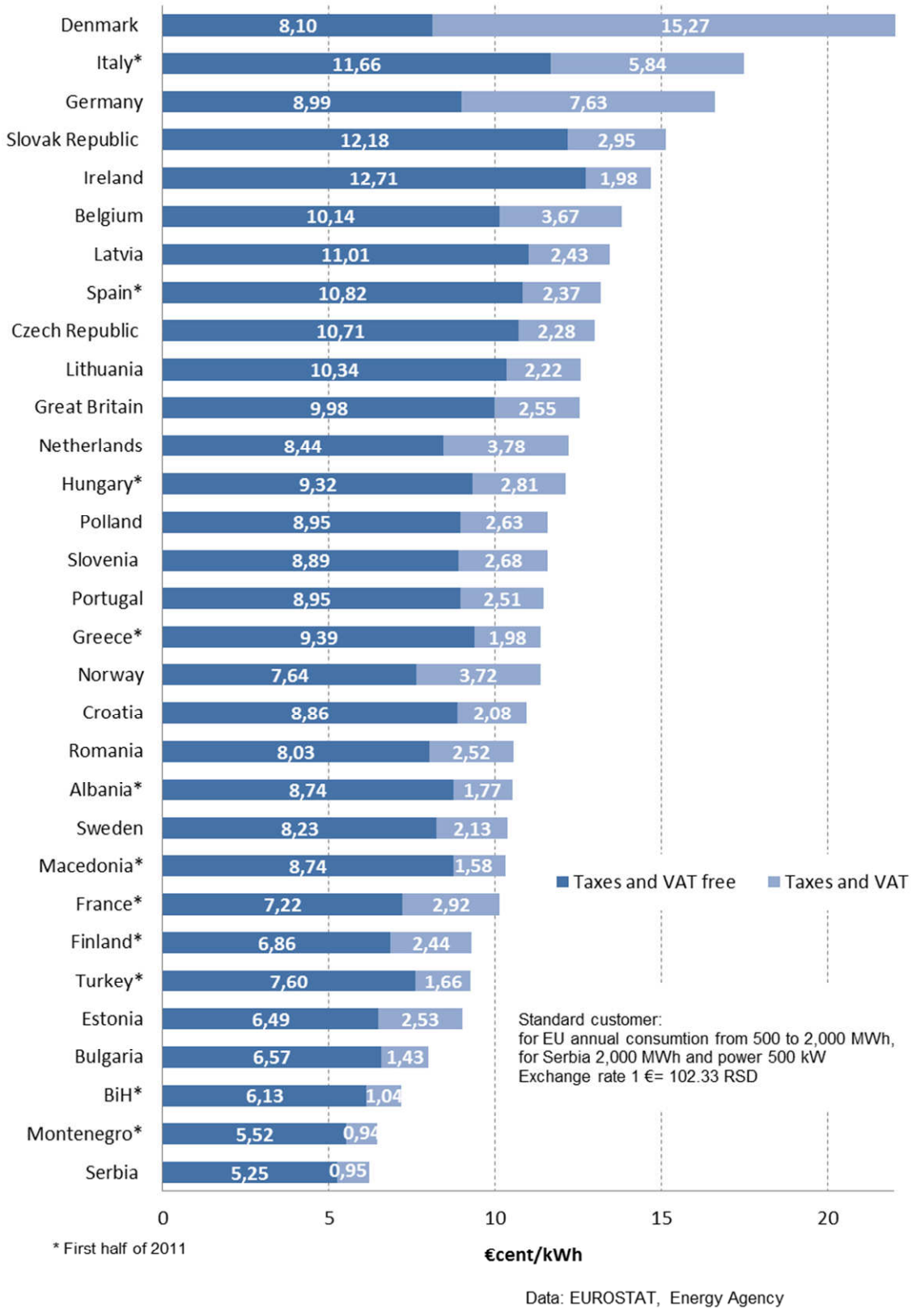

Figure 3-8: Electricity prices for industry – second half of 2011

3.6 Electricity market

Electricity market in Serbia includes two segments – regulated, securing tariff customers demand, and free market, where market players agree on transactions at free prices.

By the end of 2011, in terms of regulation of wholesale for tariff customers, the 2004 Law was still applied (as it is defined by the transitional provisions of the new Law). By the 2004 Law, wholesale for tariff customers was entrusted by the Government of the Republic of Serbia to the PE EPS via a contract. PE EPS was obligated to procure electricity primarily from local producers at regulated prices while it was possible to procure the missing quantities in the open market and sell it to the retailers for tariff customers at regulated prices. Electricity quantities meant for tariff customers' supply are defined by the annual plan. When total power plants generation of PE EPS exceeds the contracted sale to tariff customers, PE EPS sells electricity in the open market.

Open wholesale electricity **market** is based on bilateral contracts between producers, traders and suppliers. There are almost no independent electricity producers at all, although there is electricity deficit in the region which is, in medium-terms expected in Serbia as well. The activities of the traders in the open market are mostly concerned with the use of cross-border capacities, mostly for transit through Serbia due to the central position of the power system in the region.

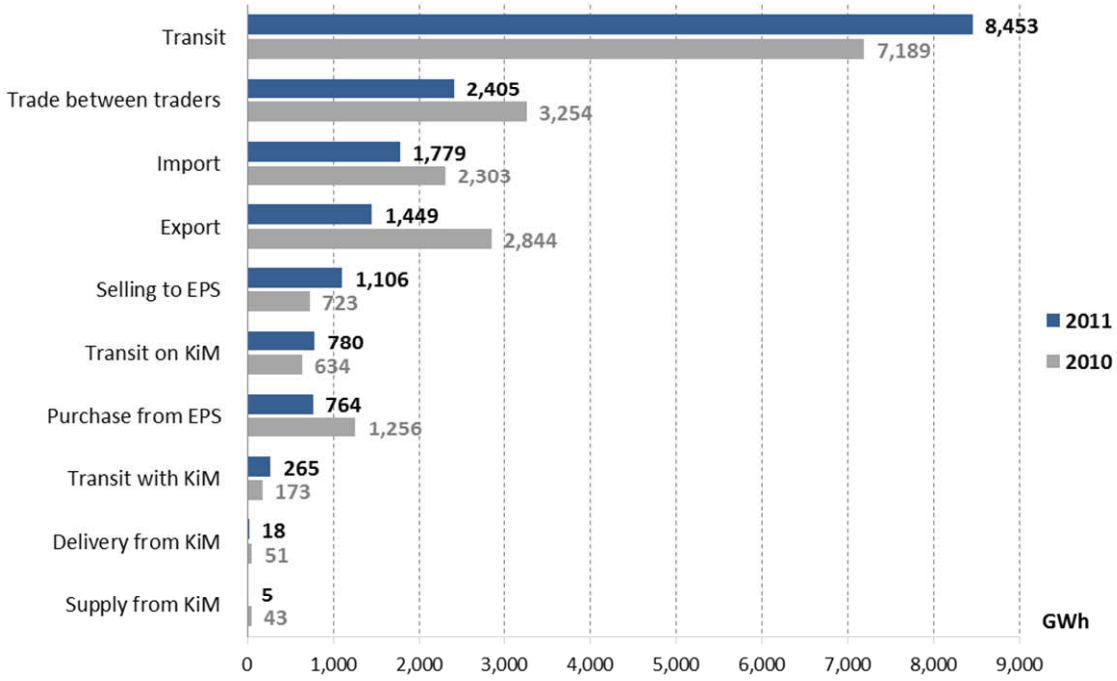

Figure 3-9: Electricity quantities per each trading activity in 2010 and 2011

Relevant indicators of development level and electricity market concentration in Serbia in 2011 are given in Table 3-25. In addition, the change in values of these indicators is given in percentages in comparison to their values in 2010. The following data are given for each of indicated trader activities:

- number of traders;
- electricity share traded by three traders with the biggest scale of trade activities in total electricity quantity per each activity;
- value of Herfindahl-Hirschman Index (HHI), indicating realised level of market concentration[3] and
- evaluation of market concentration level per individual activities[4].

Indicated data present market concentration level as moderate to extremely high, indicating the presence of dominant traders in all trading activities in Serbia in 2010. The given data prove that there was an increase in the number of active traders in all trading activities in 2011, especially in electricity import which was increased by 40%. An increase of active traders' number had a positive effect to market concentration indicator. Therefore, there was a decrease in

[3] Herfindahl-Hirschman Index is defined as the sum of squares of share of a single company in the market. The lower the value, the more developed is market competition.

[4] Market concentration limits are the following:

HHI < 1000 – not concentrated

1001 < HHI < 1800 - moderately concentrated

HHI >1801 - highly concentrated market

HHI index in most trading activities, which proves an increased liberalisation of electricity wholesale in 2011. Despite all this, market concentration level is still between moderate and highly concentrated in all market segments.

This indicates the presence of dominant traders in all trading activities in Serbia even during 2011, especially in electricity trade to PE EPS, where we see an increase of HHI index, despite the increase of the number of traders who soled electricity to PE EPS in comparison to 2010.

Table 3-25: Electricity market concentration level in Serbia in 2011

Trading activity	No. of traders		Share of three traders with the greatest trade scale [%]		HHI		Level of market concentration
	2011	2011/2010 %	2011	2011/2010	2011	2011/2010 %	2011
Trade with PE EPS							
Selling to EPS	9	28.6	73	2.8	2,460	9.7	High
Purchase from EPS	**17**	**13.3**	**56**	**1.0**	**1,540**	**-1.9**	**Moderately high**
Wholesale between traders in the electricity market							
Sales	25	31.6	48	-13.3	1,121	-35.8	Moderately high
Purchase	20	5.3	50	4.3	1,146	-7.7	Moderately high
Import and export of electricity							
Import	21	40.0	56	-18.1	1,409	-41.2	Moderately high
Export	21	10.5	58	-2.0	1,838	14.5	High
Transit							
transit	20	17.6	60	-16.5			

Total scale of cross-border electricity exchange on each border and direction in 2011 is indicated in Figure 3-10.

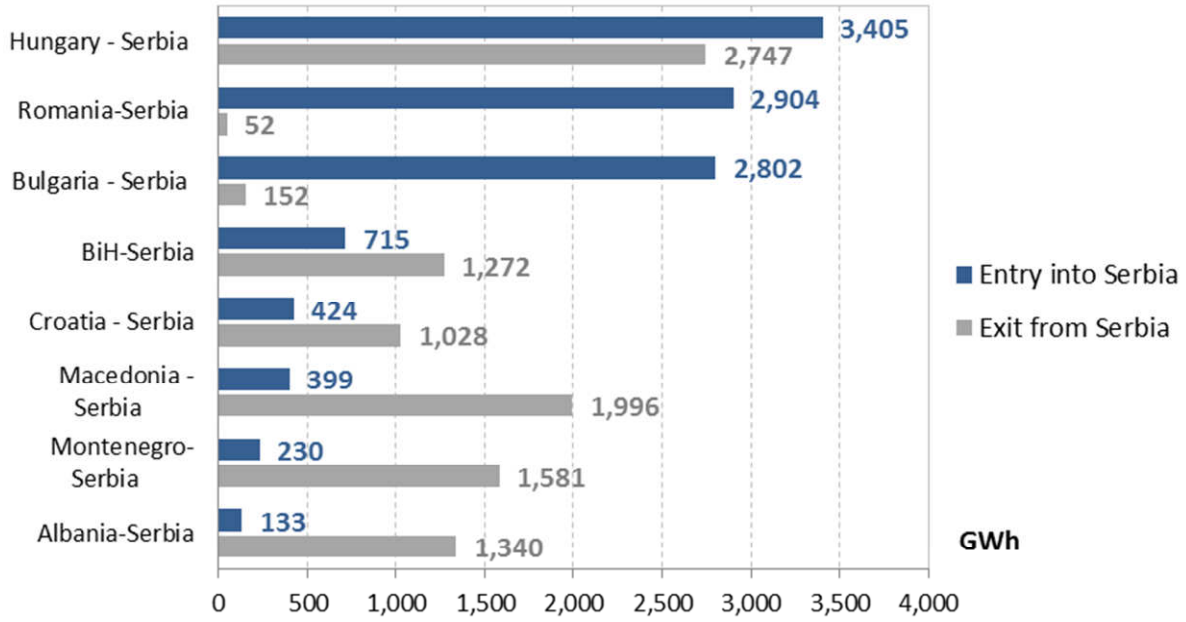

Figure 3-10: Cross-border electricity exchange

Total electricity import nominated by the electricity trader and confirmed by PE EMS on all borders amounted to 11,012 GWh, while the nominated and confirmed export amounted to 10,168 GWh. The greatest number of import transactions were made from Hungary, Romania and Bulgaria. Export transactions were more balanced in terms of direction. The greatest quantities were exported towards Hungary and Macedonia; very small quantities were nominated to Romania and Bulgaria, while the export was balanced to all other borders.

3.6.1.1 Common activities on regional market development

A set of activities relevant for the whole region are organised within EnC, with active participation of the Agency representatives. The most important of them are given in following categories:

Wholesale market

In 2011, the results of the study financed by the World Bank, on electricity market opening the in the Southeast Europe, including analyses of the new EnC Contracting Parties, Moldova and Ukraine.

Upon the initiative of the EnC Regulatory Board (ECRB), in cooperation with the regional group for the Southeast Europe ENTSO-E, in 2011, a draft of the Regional Action Plan for Electricity Market Opening in the Southeast Europe was prepared. The draft is fully harmonised with European regional initiatives, European market model with the deadline for market opening until 2015, as well as with the procedures in line with which the Agency for the Cooperation of Energy Regulators (ACER) will adopt European framework guidelines and grid code. The Plan strictly defines the deadlines and commitments of all market players. In 2011, the Regional Action Plan was approved by the EnC Regulatory Board, regional group for the Southeast Europe ENTSO-E, as well as by the Permanent High Level Group. Thereby, the Plan was supported and accepted by the most important actors responsible for electricity market opening in the Southeast Europe region. At the same time, each Contracting Party to the EnC was entrusted with a task to make local action plans with the EnC Secretariat assistance, as soon as possible. The duly preparation of the plans is the precondition for compliance with the requirements given in the Regional Action Plan.

Within ACER, drafting the quarterly report was introduced. Thereby, the implementation of the plans for market opening in existing European regions could be monitored. In these regions, congestion management will be implemented. The report will give an opportunity to identify all the obstacles to market opening and remove them in the most efficient way. Within the cooperation between the ECRB and ACER, for the first time, the official quarterly ACER report for the last quarter of 2011 includes the report on the progress of the eighth region on compliance with the regional action plan in terms of cross-border issues.

In 2011, on the regional level, the activities on the appointment of the Project Team were continued. The Project Team will establish the Auction Office for Coordinated Allocation of Cross-Border Capacities in the Southeast Europe which will be based on available transmission capacity. Headquarters of the Office will be in Podgorica (Montenegro) and it will be founded by the end of 2012. Most of regional transmission system operators will participate in the work of the Office.

Multi-year Pan European Agreement between transmission system operators on mutual cost compensation for the use of neighbouring transmission networks (ITC Agreement) was signed on 09/02/2011 by 40 transmission system operators from 34 countries. One of them is the Serbian Transmission System Operator – PE EMS. There is an indefinite validity date of this multi-year agreement and it is in line with Guidelines for Inter-TSO Compensation.

Market of balancing energy

In 2011, ECRB prepared a report on current balancing mechanisms which were applied in the Southeast Europe countries. ECRB also started working on a dictionary of balancing terminology so as balancing terminology could be harmonised between the members of the region, which is one of preconditions for the establishment of the regional market of balancing energy.

Market monitoring

In 2011, ECRB initiated drafting of the Guidelines for regulatory monitoring of the Southeast Europe market monitoring. The Guidelines include detailed description of indicators which serve as a basis for the assessment on whether the market functions in line with the existing rules and with the principles of transparency and non-discrimination. The following procedures were established: procedure for the collection of relevant data, procedure for the calculation of relevant values, analysis of results and criteria for recognition of electricity market disruption and the possibilities for regulator's work. As a start, these guidelines will only include the recommendations to the regional regulators on collection of relevant groups of data for cross-border parameters monitoring in the region. In further stages, these recommendations would also include other parameters for market monitoring, in line with the level of market openness and market development as well as with data availability. The application of these guidelines aims at the establishment of a harmonised approach to regulatory tasks and the introduction of regional market monitoring. These guidelines would not be legally binding. In 2011, the consultant initiated design and demonstration of the software based on the use of Internet which will serve for the purpose of market monitoring on national level, but also for regional monitoring, for different time horizons.

Quality of service – electricity delivery and supply

In 2011, ECRB initiated working on the improvement of the regulatory framework for the collection and monitoring the data on quality of service in terms of electricity delivery and supply. The report on the quality of supply in the Contracting Parties to the EnC was published within the benchmarking report of CEER on quality supply. In 2011, EnC also published the results of the study on recommendations for collection, reporting and audit of the data on the quality of service in EnC.

In 2011, within the working group for customer protection of the EnC Regulatory Board (ECRB WG-C), the activities on the upgrade of the regulatory framework for collection and monitoring of the data on quality of services – electricity

delivery and supply were initiated. The report on the quality of supply in the Contracting Parties to the EnC was published within benchmarking[5] report of CEER on quality of supply. In 2011, EnC also published the results of the study on recommendations for collection, reporting and audit of the data on quality of service in the EnC countries.

3.6.2 Retail market

3.6.2.1 Electricity quantities delivered to final customers

In total, 28,609 GWh were sold and delivered to final customers in 2011. In comparison to 2010, the consumption was 2% higher. The greatest share of energy – 90.4% was delivered from distribution systems, while only 9.6% were delivered to the customers with facilities connected to the transmission system.

The companies licenced for electricity trade in the electricity market (in the end of 2011, there were 52 of them) are not active in the retail market, since the customers did not show interest for purchasing electricity at market price.

Table 3-26 indicates electricity consumption in Serbia (without KiM) in 2005-2011, including electricity withdrawn by the very producers so as to meet their own demand.

Table 3-26: Structure of electricity consumption in 2005-2011

GWh

Consumption category	2005.	2006.	2007.	2008.	2009.	2010.	2011.	2011/2005 (%)
Households	14,407	14,276	14,145	14,313	14,412	14,645	14,666	101.8
Other customers connected to low voltage (0,4 kV)	4,957	5,195	5,379	5,614	5,567	5,534	5,640	113.8
Total connected to low voltage (0,4 kV)	19,364	19,471	19,524	19,927	19,979	20,179	20,305	104.9
Customers connected to medium voltage(10, 20 and 35 kV)	4,967	5,125	5,247	5,345	5,127	5,317	5,553	111.8
Customers connected to high voltage (110 kV)	2,183	2,337	2,430	2,570	2,216	2,555	2,751	126.0
Delivered to final customers	26,514	26,933	27,201	27,842	27,322	28,051	28,609	107.9
TPP and HPP consumption to cover their own demand	521	662	447	431	492	436	476	91.4
Total consumption	27,035	27,595	27,648	28,273	27,814	28,487	29,085	107.6

Since 2005, total electricity consumption has been increased by 7.6%. The greatest growth is seen with high voltage (HV) – by 26%, customers connected to low voltage except households and medium voltage, which indicates an increased operations level of industry. Power plants both increased the generation and reduced energy consumption in the generation process as a result of increase of efficiency of the power plants operations.

[5] Common term for comparative analysis of similar (indicators, companies, activities, etc.)

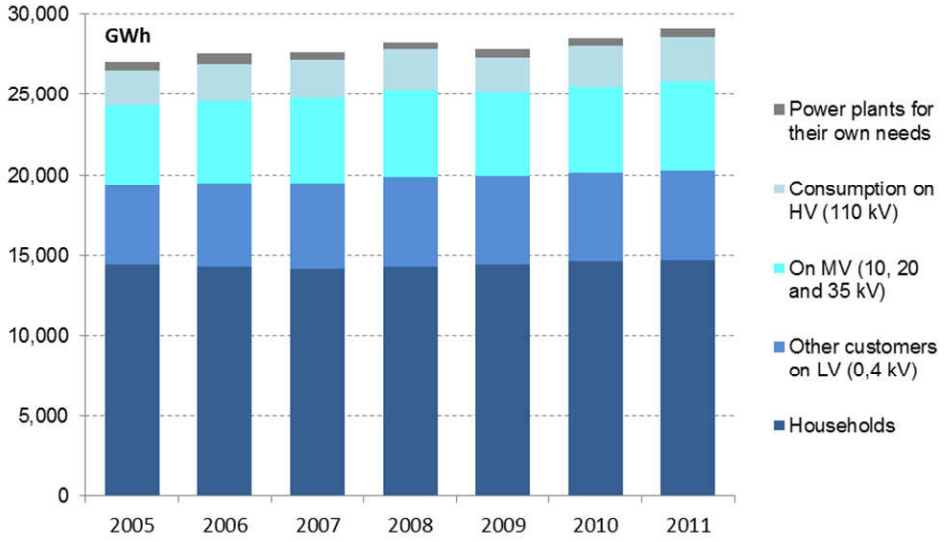

Figure 3-11: Electricity consumption structure in Serbia in 2005-2011 (without KiM)

Total number of metering points for customer delivery in Serbia without KiM (without Železnice Srbije/Serbian Railway) in the end of 2011 amounted to 3,539,645. Compared to 2010, the number was increased by 1.15%.

Table 3-27: Number of metering points in 2010 and 2011

Consumption category	2010	2011	2011/2010 %
Households	3,122,675	3,152,940	101.0
Other customers connected to low voltage (0,4 kV)	372,758	382,553	102.6
Other customers connected to medium voltage (10, 20 и 35 kV)	3,970	4,124	103.9
Customers connected to medium voltage (110 kV)	29	28	96.6
Total number of metering points	**3,499,435**	**3,539,645**	**101.1**

3.6.2.2 Monitoring and regulating quality of delivery and supply

The Energy Agency of the Republic of Serbia established the rules for monitoring quality of electricity delivery from transmission and distribution systems which are valid as of January 1, 2009. The rules were defined based on international experience and existing practice in companies in terms of data collection. The system for monitoring quality of electricity delivery is being introduced in stages, so as the necessary meter-reading, information and organisational infrastructure in transmission and distribution companies could be adjusted to the needs of the users and requirements of the Agency.

The rules for monitoring quality of delivery define the type, scale and format of the data on technical and commercial aspects of quality which have to be collected by the transmission company PE EMS and companies for electricity distribution within PE EPS. The rules also stipulate the deadlines for the data submission to the Agency. Based on the collected data, indicators of technical and commercial aspects of quality in electricity delivery and supply are calculated. Technical aspects of quality include monitoring quality of voltage on the delivery point and continuity of supply, i.e. number and duration of interrupted electricity deliveries. Commercial aspects enable one to assume the quality of relations between the energy entity performing transmission, i.e. distribution and system users in the following situations: connection, invoicing, collection, removal of technical problems with delivery, addressing questions and requirements of the users, interruptions and disconnections.

So as to monitor the continuity of delivery, pursuant to the existing rules, as of 2009, the companies regularly submitted monthly reports on long-term interruptions to the Agency. These interruptions which are reported on are longer than 3 minutes. The data were submitted on the beginning, termination and duration, voltage level of the interruption point and power element which was interrupted, cause (operator/other energy entity/third party/force majeure/unknown/other) for each individual long-term interruption. The report also included the data on type of interruption, i.e. whether it was planned or not. Planned interruption is the one the customer was informed on at least 24 hours before the interruption, either by mass media or through some other channels.

The data on the interruptions registered by transmission and distribution system operators in the period 2009 – 2011 served as the basis for calculation of annual indicators of discontinuity of supply in transmission and distribution network, both for unplanned and planned interruptions.

Quality indicators in the transmission network

Indicators of discontinuity of delivery in the transmission network are the following:

- Power failure – undelivered power [MW] – total failed power on all measuring points where supply was interrupted;
- ENS [MWh] – total undelivered electricity which amounts to total undelivered electricity during all interruptions;
- ENS [%] – a share of undelivered electricity in total delivered electricity (quotient of undelivered and delivered electricity during all interruptions);
- AIT [min] – average interruption duration in minutes, a quotient of undelivered electricity and average power. Average power (MW) is calculated as a quotient of delivered electricity and the reporting period given in minutes. The reporting period is one calendar year.

Indicators of discontinuity in delivery within the transmission network calculated in such a manner are given in Table 3-28.

Table 3-28: Indicators of discontinuity in delivery within the transmission network for 2009, 2010 and 2011

Interruptions		Power failure – undelivered power	ENS	ENS
		MW	MWh	%
2009				
	Planned	189	984	0.00245%
	Unplanned	3,589	1,525	0.00380%
	Total	3,778	2,509	0.00626%
2010				
	Planned	131	473	0.00118%
	Unplanned	2,790	1,418	0.00353%
	Total	2,921	1,891	0.00471%
2011				
	Planned	392	1,875	0.00451%
	Unplanned	3,212	3,364	0.00809%
	Total	3,604	5,239	0.01260%

The values of the most frequent indicator of discontinuity within the transmission network AIT are given in Figure 3-12, separately for planned and unplanned interruptions and in total.

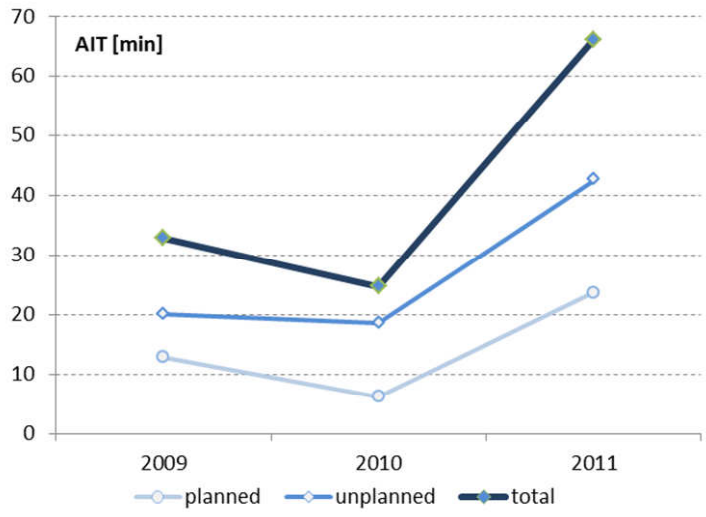

Figure 3-12: Average interruption duration (in minutes)

Based on given values of discontinuity indicators, one can notice that after slight improvements in indicators in 2010 when compared to those in 2009, in 2011, there was a big increase in average duration of interruption. The increase of the value of indicators for unplanned interruptions was caused by an increased number of interruptions due to force majeure. In particular, this was due to an accident caused by storm in June 2011 when undelivered electricity was estimated at 1,821 MWh. It amounts to 54% of total undelivered electricity in 2011. Longer halts due to investments in transmission network influenced a growth of values of discontinuity indicators, i.e. of the number and duration of planned interruptions. Realisation of these investments is expected to have a positive effect to discontinuity indicators in the future.

Quality indicators in the distribution network

The most common indicators for the estimation of discontinuity of delivery in the distribution network are the following:

- SAIFI [number of interruptions/user] – average frequence of interruptions per each user, calculated as a quotient of the cummulative number of interruptions and total number of users and
- SAIDI [min/user] – average duration of interruptions in minutes per user, calculated as a quotient of cumulative duration of interruption and total number of users.

Indicators of discontinuity of delivery in the distribution network for 2009, 2010 and 2011, calculated in this manner, are given in Figure 3-13, both for planned and unplanned interruptions and in total:

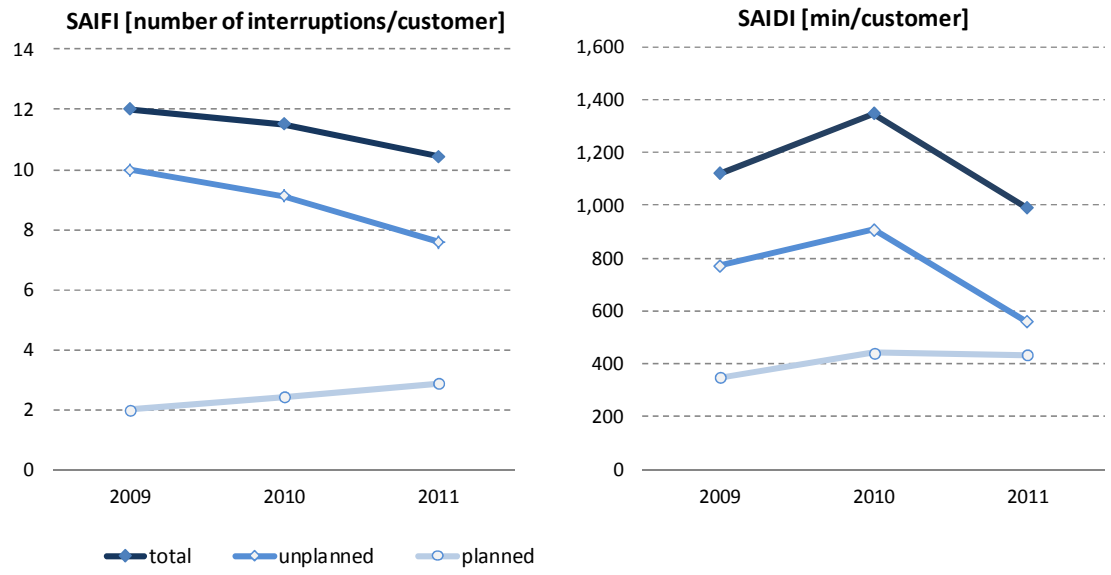

Figure 3-13: SAIFI and SAIDI for 2009, 2010 and 2011

Due to insufficient technical, information and human resources, some of distribution companies were not in a position to submit all the data pursuant to the requirements arising from the rules for monitoring quality, primarily in terms of the number of users with interrupted supply. Therefore, the given data for 2009 do not include the data on interruptions for one distribution company, while some of the data for all the three years were collected based on assumptions and calculations made by the very distribution company.

Based on the given data, one can notice reduced values of reliability indicator, i.e. the number and duration of failures for unplanned interruptions in 2011 in comparison to previous two years. However, these figures are still high in comparison to the figures of continuity indicators in other EU and EnC countries which were presented in the "5th CEER Benchmarking Report on the Quality of Electricity Supply"[6] which includes benchmarking report on the quality of supply of EnC countries for the first time. In addition, there is very high share of interruptions due to force majeure and interruptions with unknown cause in total number and duration of interruptions. In some distributions, the share exceeds 30% of the total number and duration of interruptions. There was a slight increase in the values of continuity indicators, i.e. a slight increase in the number and duration of planned interruptions due to prolonged halts caused by the process of realisation of distribution network investments. The effects of these should have a positive effect on continuity indicators in the future.

[6] http://www.energy-community.org/pls/portal/docs/1522177.pdf

3.6.2.3 Commercial quality

So as commercial quality could be monitored, as of 2009, the companies started submitting quarterly reports to the Agency with the data relevant for the calculation of the indicators of commercial quality in the provision of following services: connections, halts, interruptions, measuring, calculation, removal of technical supply problems, addressing the issues and demand of concern for customers in customer and call centers. Due to discrepancies between the scale of required data with technical, information, organisational and human resources, some distribution companies were not in a position to submit all the data pursuant to the rules on quality monitoring. In particular, the data on monitoring operations of call centers, due to lack of relevant information support as well as due to the fact that there are no call centers in most distribution companies. It was also noticed that certain data which should be submitted should be defined more precisely and that they should be harmonised with the practice and potential within distribution companies.

In organisational terms, there are difficulties in coupling the data on the level of individual distribution companies due to disharmony between different organisational units within those companies, as well as the difficulties in forwarding collected data to the Agency. So as to become aware and remove given deficiencies and problems, a set of meetings was held with the representatives of all distribution companies in 2010 and 2011. Some changes were made in terms of rules for data collection. Difficulties in registration, coupling, monitoring and comparison of the data on commercial quality are also seen on the EnC level. Drafting the 5th Benchmarking Report on Quality of Supply implied collecting data on commercial quality for 2008 and 2009 from EnC contracting parties. Since our region is still in the first phase of monitoring commercial quality, the collected data were not complete, consistent and comparative enough. Therefore, benchmarking report does not include the comparison of realised indicator values.

The results of all national and international activities in the field of service quality indicate the need for further upgrade of the regulatory framework and practice in terms of monitoring and regulation of quality so as the quality of service could be improved. The quality of electricity delivery, i.e. the quality of access to the transmission system is assessed based on duration and frequency of interrupted access from the aspect of voltage, frequency and duration of electricity delivery interruptions, in line with the provisions of the Transmission System Code.

3.7 Security of electricity supply

It is generally accepted that the security of supply in 2011 was adequate.

Electricity is provided mainly from local sources. In long-terms, with expected electricity consumption growth and uncertain effects of the energy efficiency increase, a problem of a lack of generation capacities becomes obvious. The oldest thermal power plants will be shut down while there are no new capacities to replace them. Documentation on the construction of planned new generation capacities is being prepared.

Since 2000, from increased revenue collected by energy entities and with considerable financial support of the international community, reliability and efficiency of the facilities in thermal power plants and lignite mines which supply thermal power plants with fuel, and to some extent, in hydro power plants and transmission network, were increased. Reliability of thermal power plants in 2011 reached the level of 95.4% which can be compared to the reliability of such plants in the EU. The level was 2.2% higher than in 2010, while it was 18% higher than in 2000. Ever since, it has been growing. Thereby, without new generation capacities being built, security of electricity supply has been considerably increased. Import dependence was reduced. Namely, electricity is imported only at times of lowest temperatures.

In the beginning of the last decade, net import amounted to around 7% of annual demand. In 2011, import was inevitable in January, February and from October till the end of the year. The import in the end of the year exceeded the quantities indicated in the balance sheet due to extremely inadequate hydrological circumstances almost all year long. In the first two months of 2011, import amounted to 256 GWh, while in the last two months it amounted to 850 GWh (1106 GWh in total). Total electricity export in 2011 reached the level of 764 GWh, while 85% of it was exported from March to June.

Transmission network did not a limiting factor in terms of security of supply, but it is necessary to develop it further. Modernisation and increase of capacity and efficiency of the transmission system is also important for the security of supply of other countries, taking into consideration the central position of the power system of Serbia in the region.

On lower voltage levels, within the distribution network, there are low voltage situations from time to time and relatively frequent delivery interruptions. It is necessary to have greater investments in distribution systems in the years to come, since there was an insufficient level of investments in the distribution network in the last decade. For this reason, beside some others as well, if one takes into consideration its performance, this segment of the power system is lagging significantly in comparison to other segments.

Energy facilities are constructed upon the award of the energy permit. The permit is issued by the ministry responsible for energy, which prescribes the requirements for the issuance of the energy permit in more details, the content of the application depending on the type and purpose of the energy facility, the issuance procedure and the content of the registry of issued permits and registry of invalid permits, as well as more detailed requirements for giving approval for energy facilities for electricity generation for which energy permit is not issued. Energy permit is issued to local and

foreign legal or natural persons or entrepreneurs under the same conditions, with full compliance with the principles of non-discrimination and criteria which should be unbiased and public.

PE EPS and the companies within it did not adopt development plans and they should adopt them as soon as possible in line with the law. For this reason, the given data on future development are based on the information submitted by PE EPS.

3.7.1 Consumption forecast

Until 2025, one can expect electricity consumption growth in Serbia of between 1.3% and 1.5% by average per year. These assumptions take into account consumption growth in the industrial sector as well as the implementation of measures for energy efficiency increase in all consumption sectors.

3.7.2 Generation adequacy forecast

PE EPS plans imply rehabilitation and modernisation of a set of existing power plants and the construction of new ones, either financed by PE EPS only or in cooperation with strategic partners. The construction of new power plants is necessary so as to cover electricity consumption growth and replace the power plants which, due to their long lifetime and inability to comply with environment protection requirements, will be shut down. No big new capacities are expected to be commissioned until 2014.

As of 2017, all thermal power plants which do not comply with the EU standards on emission of sulphur and nitrogen oxides have to be shut down. Thereby, PE EPS will shut down the oldest inefficient power plants where desulphurisation equipment installation is not viable. New generation capacities are planned to be constructed so as to meet electricity demand and replace old and inefficient thermal power plants using old-fashioned technology. Electricity consumption and decommission of old power plants will be covered by the construction of new thermal power plants and power plants using renewable energy sources. Bearing in mind the current estimations, new 1,700 MW will be commissioned until 2025.

Thermal power plants

Revitalisation and modernisation of the following thermal units is planned:

- TENT B1, 620 MW, 2012 - 2014
- TENT A5, 320 MW, IN 2012
- TE Kostolac B1, 320 MW, 2012 – 2014.

The oldest thermal power plants Kolubara A1, A2 and A4, of total installed capacity of 96 MW will be decommissioned after 2012 due to their age, low efficiency, high generation costs and environment protection.

Power plants coal supply in Kolubara Basin is the greatest problem within the thermal energy sector in the years to come.

In the end of 2011, collecting bids and selection of a strategic partner for the construction of thermal power plant-district heating company Novi Sad with gas-steam combined cycle with the 450 MW capacity was in the final phase. The plant is expected to be constructed in 2015.

There are ongoing activities related to the provision of funds for the projects on construction of thermal power plants Kolubara B (2x375 MW), Nikola Tesla B3 (new unit of 740 MW) and new unit in TPP Kostolac B3. These plants will be local lignite-fired, thus implying opening new and replacement of open pits.

The position of these power plants in the energy market will be greatly affected by the costs and commitments in terms of reduction of carbon-dioxide emission and natural gas prices.

Hydro power plants

Revitalisation and modernisation of existing hydro power plants is either planned or already initiated:

- revitalisation of HPP Đerdap 1, with 1 058 MW capacity, which implies the increase of installed capacity from 176 MW to 205 MW in each of 6 units and extended lifetime for another 30 years; the revitalisation is planned to be completed in 2016;
- revitalisation of HPP Bajina Bašta, 364 MW, plant lifetime is to be expanded for another 30 years, with an increase in installed capacity of 28 MW; revitalisation is planned to be finalised by the end of 2013;
- revitalisation of HPP Zvornik, 96 MW, and other hydro power plants as well.

3.7.3 Use of renewable energy sources

In 2009, the Government adopted a Decree on incentive measures for electricity generation through the use of renewable energy sources and combined electricity and heat energy generation, which prescribes the incentive measures for electricity generation through the use of renewable energy sources and for energy purchase – feed-in tariff in more detail. Incentive measures include setting procurement prices based on power plant type where electricity is produced through the use of renewable energy sources and based on installed capacity.

The conditions for obtaining the privileged producer status are prescribed in the Decree on conditions for obtaining the privileged electricity producer status and criteria for evaluation of these conditions, adopted by the Government in 2009. The implementation of the given decrees in in the jurisdiction of the ministry in charge of energy issues.

Purchase prices for privileged electricity producers are given in Table 3-29. These prices are implemented by the end of 2012.

Table 3-29: Purchase prices for privileged electricity producers

No.	Type of power plant	Installed capacity (MW)	Incentive measure – purchase price (c€/kWh)
1	**Hydro power plants**		
1.1		up to 0.5 MW	9.7
1.2		from 0.5 MW to2 MW	10.316 – 1.233*P
1.3		from 2 MW to 10 MW	7.85
1.4	Existing infrastructure	up to 2 MW	7.35
1.4	Existing infrastructure	from 2 MW to 10 MW	5.9
2	**Biomass fired power plants**		
2.1		up to 0.5 MW	13.6
2.2		from 0.5 MW to 5 MW	13.845 – 0.489*P
2.3		from 5 MW to 10 MW	11.4
3.	**Biogas fired power plants**		
3.1		up to 0.2 MW	16.0
3.2		from 0.2 MW to 2 MW	16.444 – 2.222*P
3.3		over 2 MW	12.0
4.	**Power plants fired by landfill gas from plants for municipal waste water treatment**		6.7
5.	**Wind to energy power plants**		9.5
6.	**Solar to energy power plants**		23
7.	**Geothermal energy to power plants**		7.5
8.	**Combined cycle power plants fired by fossil fuels**		
8.1		up to 0.2 MW	C_0 =10.4
8.2		from 0.2 MW to 2 MW	C_0 = 10.667–1.333*P
8.3		from 2 MW to 10 MW	C_0 = 8.2
8.4	Existing infrastructure	up to 10 MW	C_0 = 7.6
9.	**Waste to energy plants**		
9.1		up to 1 MW	9.2
9.2		from 1 MW to 10 MW	8.5
	Correction of purchase price for CHP plants fired by natural gas	$C = C_o$ *(0.7* G/27.83 + 0.3) C – new purchase price of electricity Co – reference purchase price set based on natural gas price for energy entities dealing in natural gas retail for tariff customers purposes which does not include the charge for PE "Srbijagas" Novi Sad natural gas transmission system in line with the tariff rate "energy carrier" amounting to 27.83 RSD/ m^3 G (RSD/ m^3) – new natural gas price for energy entities dealing with natural gas retail for tariff customers purposes which does not include the charge for PE "Srbijagas" Novi Sad natural gas transmission system in line with the tariff rate "energy carrier"	

For wind plants, there is a limited capacity which will be stimulated by the Decree – 450 MW, 5 MW for solar plants.

Electricity quantities withdrawn from privileged producers in 2011 are indicated in Table 3-30.

Table 3-30: Electricity withdrawn from privileged producers in 2011

Renewable energy sources/ Fuel for combined generation	Purchased energy kWh
Water flow	8,789,951
Fossil fuels (coal, fuel oil and natural gas) – combined cycle	4,848,496
Biogas	118,022
Unaccumulated solar energy	1,339
Solar photo-voltaic system	0
TOTAL	**13,757,808**

In 2012, target binding percentage for the increase in renewable energy share in gross final energy consumption until 2020 is expected to be set within the Treaty establishing the Energy Community.

The Agency does not have any specific authority in the field of renewable energy sources, except for licence issuance for the facilities with installed capacity of 1 MW or more.

3.7.4 Construction of new transmission capacities

Transmission system operator adopts a transmission system development plan every year for the following five-year period (as of 2012, they will adopt 10-year plans). The aim is to increase the security of supply in the local market, increase the availability and security in terms of use of cross-border transmission capacities and enable market operations. Except for the construction of energy facilities, the plan also includes the investments in information technologies and electronic communications. The plan is adopted in cooperation with distribution system operators and system operators from neighbouring countries in terms of necessity of construction of new interconnectors. The position of the Serbian transmission system within a synchronized area of "Continental Europe" is considered and there is active participation in the preparation of a 10-year plan for the construction of new cross-border transmission capacities within ENTSO-E.

In 2011, the following works within the transmission system were either completed or initiated:

- On overhead lines (OHL):
  - Completed works on: construction of OHL 400 kV TS Leskovac 2 –border with Macedonia; adaptation of OHL 220 kV Belgrade 5 – Obrenovac and repair of one tower on OHL 110 kV Bor 2 – Bor 3;
  - Initiated works on: repair of OHL 2x110 kV Valjevo – Zvornik and repair of one tower on OHL 110 kV No. 121/1+1180 B Belgrade 2 – Belgrade 22;
  - Works were contracted for: adaptation of OHL 220 kV Kruševac 1 – Podujevo, adaptation of OHL 220 kV Belgrade 5 – Obrenovac; introduction to Inđija - 2 OHL 2x110 kV Inđija – Stara Pazova and introduction to TS NIS - OHL 220 kV No. 253/2 TS Pančevo 2 – Chemical Industry Pančevo.
- On transformer stations (TS):
  - the following planned reconstruction and adaptation works were completed: TS 400/110 kV Kragujevac 2 – replacement of transformer T1 with new transformer of 300 MVA; TS 400/220/110 kV Pančevo 2 – replacement of HV equipment in 10 bays 110 kV; Switching station 400 kV Đerdap 1 – replacement of circuit breaker and disconnector 400 kV in transformer bay No.6.; TS 110/35 kV Belgrade 6 – installation of elevator – platform for load; TS 110/35 kV Petrovac – repair of concrete portal tower; TS 110/35 kV Smederevo 1 – repair of concrete portal towers; TS 110/35 kV Šabac 1 – repair of concrete portal towers and TS 110/35 kV Smederevska Palanka – adaptation of control room;

  Construction or reconstruction works were completed: TS 400/110 kV Belgrade 20 – construction works and connection road; TS 400/220 kV Obrenovac – bay reconstruction 400 and 220 kV; Switching station 400 kV Đerdap – replacement of circuit breaker; TS 220/35 kV Bajina Bašta – 6 220 kV overhead line bays were reconstructed and new transformer was installed 220/35 kV 31,5 MVA; TS 220/110/35 kV Belgrade 5 – reconstruction; TS 220/110 kV Beograd 3 and TS 110/ 35 kV Zaječar 2 – new transformer with 110 kV bay was installed.

Analyzing the state of play in the transmission network within the Transmission System Development Plan, taking into consideration consumption forecast and expected commission of new generation units, PE EMS proposed the construction of new elements of transmission network, i.e. rehabilitation or upgrade of existing ones. Thereby, existing and expected congestions could be removed and the efficiency of transmission system operations could be increased.

A list of investments in 400 kV and 220 kV transmission network for the following five ears was made. In addition, PE EMS made a strategic decision to gradually remove the 220 kV voltage level in the future. Development plan implies investments in 110 kV transmission network in those segments of the system where security of electricity supply is endangered. First of all, these segments include the area of south Banat and Raška, overhead line intersections necessary for connection of new transmission facilities, such as in Belgrade and Niš. Installed capacity is planned to be increase in the following TS: 400/110 kV Jagodina 4, 220/110 kV Zrenjanjin 2, 220/110 kV Kruševac 1, 400/220/110 kV Leskovac 2 and 400/110 kV Bor 2.

3.7.4.1 Construction of interconnection lines

The construction of interconnection overhead line of 400 kV between Serbia and Macedonia (Niš 2 – Skoplje) was initiated in 2008 and a segment from TS Leskovac up to the border with Macedonia was completed in 2011. The two-direction overhead line of 400 kV between Romania and Serbia TS Rešica (Sokol) – TS Pančevo 2 is planned.

3.7.5 Distribution system operators' measures

In line with the new Energy Law, distribution system operator will adopt ten-year development plans, harmonised with the transmission system development plan and connection requirements. In order to compensate for the delay in investments, remove the drawbacks and improve system operations, a set of measure for an increase of security of energy supply of customers connected to the distribution network are planned. First of all, these measures include the completion of initiated investments and new investments in network expansion, revitalisation or replacement of existing old-fashioned equipment in the distribution network as well as other activities in terms of modernisation of operations and functions.

In 2011, the following works were either completed or initiated:

- On OHL:
  - Construction and reconstruction of a set of OHL within the distribution network;
  - Construction of low voltage network, in line with the local growth in electricity consumption and transmission capacities development as well as with the need to upgrade quality of supply;
- On TS:
  - Completed or imitated construction of 12 new TS 110/x κV, 8 new TS of 35/10 κV, as well as the expansion of some of existing TSs;
  - Taking TSs of 110/x κV over which are currently owned by PE EMS, in line with the Law;
- Metering and management:
  - Upgrade of metering devices and further development and introduction of remote reading system;
  - Follow-up of distribution management system development.

In addition, a set of activities were initiated so as to reduce electricity losses in the distribution network and increase the collection rate for delivered electricity.

3.7.5.1 Smart grids

There is an ongoing replacement of measurement devices in the distribution companies with more modern models. PE EPS established an expert group for the development of "Smart Grids". The task of the expert team is to design a profitable project on the modernisation of the system for electricity distribution and supply so as to provide monitoring, protection and automatised optimisation of the work of all system segments and installations between system users, power plants, network and connected facilities. In 2011, a credit was approved for the realisation of this task. The tender for the procurement of necessary equipment, primarily new meters was being prepared. It was also decided to replace the meters in those areas with significant level of losses in electricity distribution first.

Well advanced network and measurement systems will enable high reliability and quality level of delivered electricity. They will stimulate better consumption management and more dynamic electricity market, as well as considerate reduction of technical and commercial losses.

3.7.5.2 Reduction of electricity losses in the distribution network

A set of measures for electricity loss reduction in the distribution network:

- construction of new network facilities, overhead lines and transformer stations;
- procurement and installation of new 2,400,000 meters;
- modernisation of the remote measuring system and consumption management;
- improvement of technical and business system for calculation and collection of electricity bills and
- activating existing devices and construction of new ones for reactive power compensation.

4. NATURAL GAS

4.1 Organisational and ownership structure of the natural gas sector

The existing structure of the natural gas sector of Serbia is established upon the adoption of the Energy Law in 2004 and division of the Public Enterprise Petroleum Industry of Serbia (Naftna industrija Srbije) into three companies. Gas sector structure in the end of 2011 is given in Figure 4-1. Since the new Law was adopted in August 2011, some of 2011 operations were performed in line with the former Law, pursuant to the transitional provisions of the new Law. Thus, the Figure reflects such state of play.

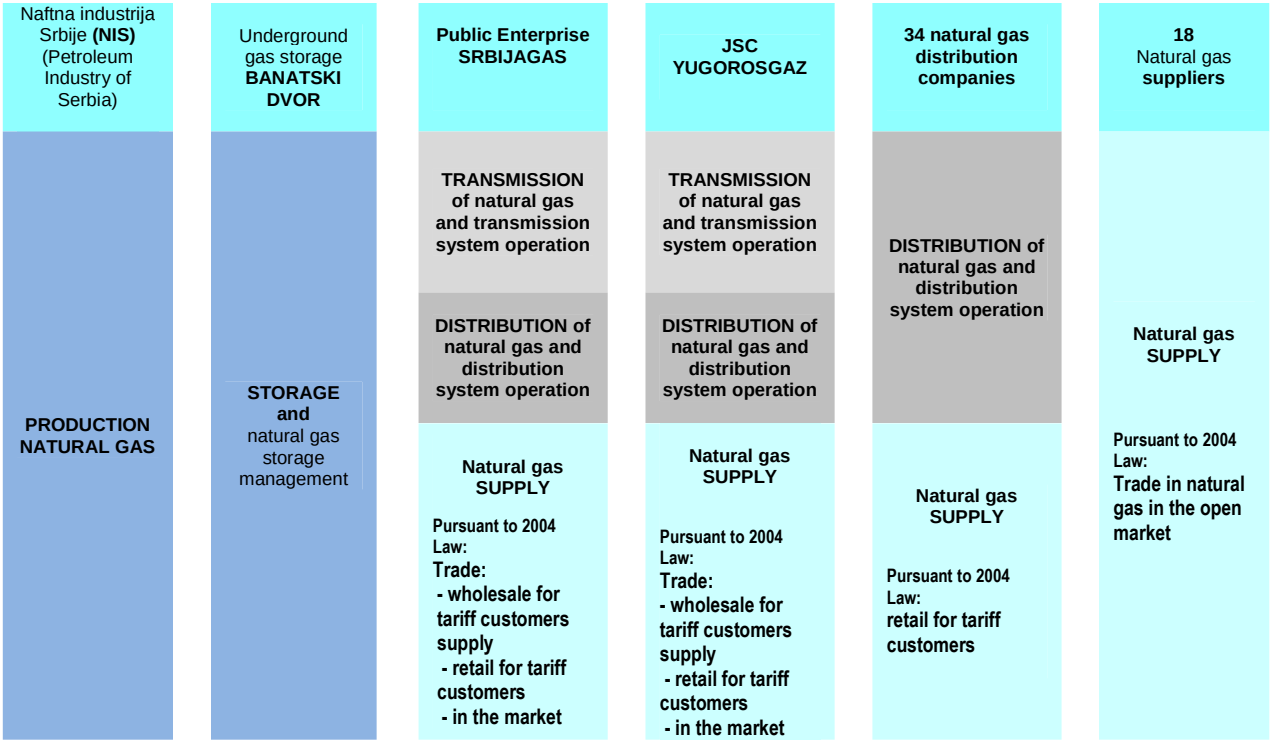

Figure 4-1: Organisational structure of the natural gas sector

Natural gas production, which is not a regulated activity, is performed solely by NIS JSC. Major NIS owner is the Russian company Gaspromnjeft, while other shareholders represent both the Republic of Serbia and a great number of small shareholders.

Natural gas transmission and transmission system operations are performed by PE Srbijagas and Yugorosgaz JSC.

Distribution and distribution system operations are performed by PE Srbijagas, Yugorosgaz JSC and another 34 companies. Most of them are owned by municipalities and towns, some of them are public-private partnership, and some of them are private companies. All distribution companies have less than 100,000 customers, and therefore, they are not obliged to unbundle system operator and supplier in legal terms (pursuant to the Directive 2003/55).

Natural gas storing is performed by the company Underground Gas Storage Banatski Dvor, LLC established by PE Srbijagas (49%) and Gazprom Germania (51%) pursuant to the interstate Agreement on Cooperation in Oil and Natural Gas Field, which was concluded by the governments of the Republic of Serbia and Russian Federation on January 25, 2008. The agreement on the realisation of the joint project was signed in October 2009.

Yugorosgaz JSC was established in 1996. Yugorosgaz JSC activities include procurement of natural gas from Gazprom for all customers in Serbia, as well as natural gas transmission, distribution and supply. Current shareholders are Gazprom Moskva - 50%, PE Srbijagas - 25% and Central ME Energy and Gas, Vienna - 25%.

There are 20 energy entities holding licences for trade in the open market, but only two of them were active in 2010 and 2011 – PE Srbijagas and Russian – Serbian Trading Company, PCT.

PE Srbijagas is the dominant market player with 76% of share in total natural gas sales in 2011.

Until October 2012, the Government of the Republic of Serbia plans to entrust public supply as an all-purpose service at regulated prices to interested legal persons complying with the requirements stipulated by the Law. Distribution companies which have dealt in retail for tariff customers until the adoption of the Law are expected to apply for public supplier option on the area where they cover distribution operations. Interested distribution companies have to submit

an application for an amendment of the act on entrusting operations of general interest until July 1, 2012 and a request to the Agency for licence operations amendment.

For the period until 2016, those customers who did not select a supplier will be temporarily supplied by the natural gas supplier of the last resort selected by the Government. Supply of the last resort is not an energy activity, but one of activities of the supplier in the open market who is selected by the Government by tender. The Government has to adopt the decision on public suppliers and suppliers of the last resort at the latest until October 1, 2012.

4.2 Unbundling energy activities and operator's independence

Changes in terms of different energy activities introduced by the new Law include the following:

- activities which used to be unbundled are now joined:
  - transmission and transmission system operation;
  - distribution and distribution system operation and
  - storing and natural gas storage system operation.
- trade, a former activity, is no longer recognised. Traders are recognised both as customers and as sellers-suppliers of final customers and other suppliers. Trading licences were valid until the end of 2011 pursuant to the 2004 Law (in line with transitional provisions of the Law).

Unbundling network activities of natural gas transmission and distribution and storage, which represent natural monopolies, from production and supply (trade), which are market activities by nature, is one of key elements of market reforms.

All distribution companies in Serbia unbundled distribution, supply and other energy related or non-energy related activities in terms of accounting.

If a system operator operates within a vertically-integrated company, they are obliged to adopt a Programme for Non-Discrimination and appoint a person responsible for monitoring of this Programme. The content of the Programme is stipulated by the Law. The Programme is approved by the Agency.

Table 4-1: Unbundling energy activities

	Transmission/ Production	Transmission/ Supply	Transmission/ Supply
Ownership unbundling	YES	NO	NO
Unbundling in terms of legal form	YES	NO	NO
Separate headquarters	YES	NO	NO
Separate website	YES	NO	NO
Unbundled accounts	-	YES	YES
Audit of unbundled accounts	-	YES	YES
Publishing separate financial reports	-	NO	NO
Separate management bodies without managers from other energy activities	-	NO	NO

4.3 Natural gas transmission, distribution and storing capacities

Natural gas transmission and distribution systems are developed pursuant to the "Serbian Energy Sector Development Strategy until 2015" and other strategic documents and programmes.

4.3.1 Transmission

Around 5 million people live in areas with transmission network, which provides for the potential for further gas system development and natural gas consumption growth.

In the end of 2011, the length of the transmission system of PE Srbijagas amounted to 2, 203 km in north and central Serbia, while the length of the Yugorosgaz JSC transmission system amounted to 118 km in southern Serbia (table 4-2). PE Srbijagas owns 95% of the gas transmission network, while Yugorosgaz JSC owns the remaining 5% of gas transmission lines.

Table 4-2: Length of the transmission network in Serbia in 2010 and 2011

Yera	2010	2011
Length of network (km)	2,258	2,321

Table 4-3 indicates the most important technical characteristics of transmission systems of PE Srbijagas and Yugorosgaz JSC.

Table 4-3: Important technical characteristics of the transmission system

Important technical characteristics of the transmission system	PE Srbijagas	Yugorosgaz JSC
Capacity	≈ 18 mil m^3 / day	≈ 2.19 mil m^3 / day
Pressure	16 - 75 bar	16 - 55 bar
Length	2,203 km	118 km
Diameter	DN 150 - DN 750	DN 168 - DN 530
Lifetime – average	30 years	10 years
Compressor station, power	4,4 MW	-
Number of entries into the transmission system	**16**	**1**
From another transmission system	1	1
From production deposits – local gas	14	-
From the storage	1	
Number of exits from the transmission system	**160**	**-**
Metering and regulating stations on transmission system exit	158	4
Exchange stations	2	-
Entry into Yugorosgaz transmission system	1	-
Interconnector towards Bosnia and Herzegovina	1	-

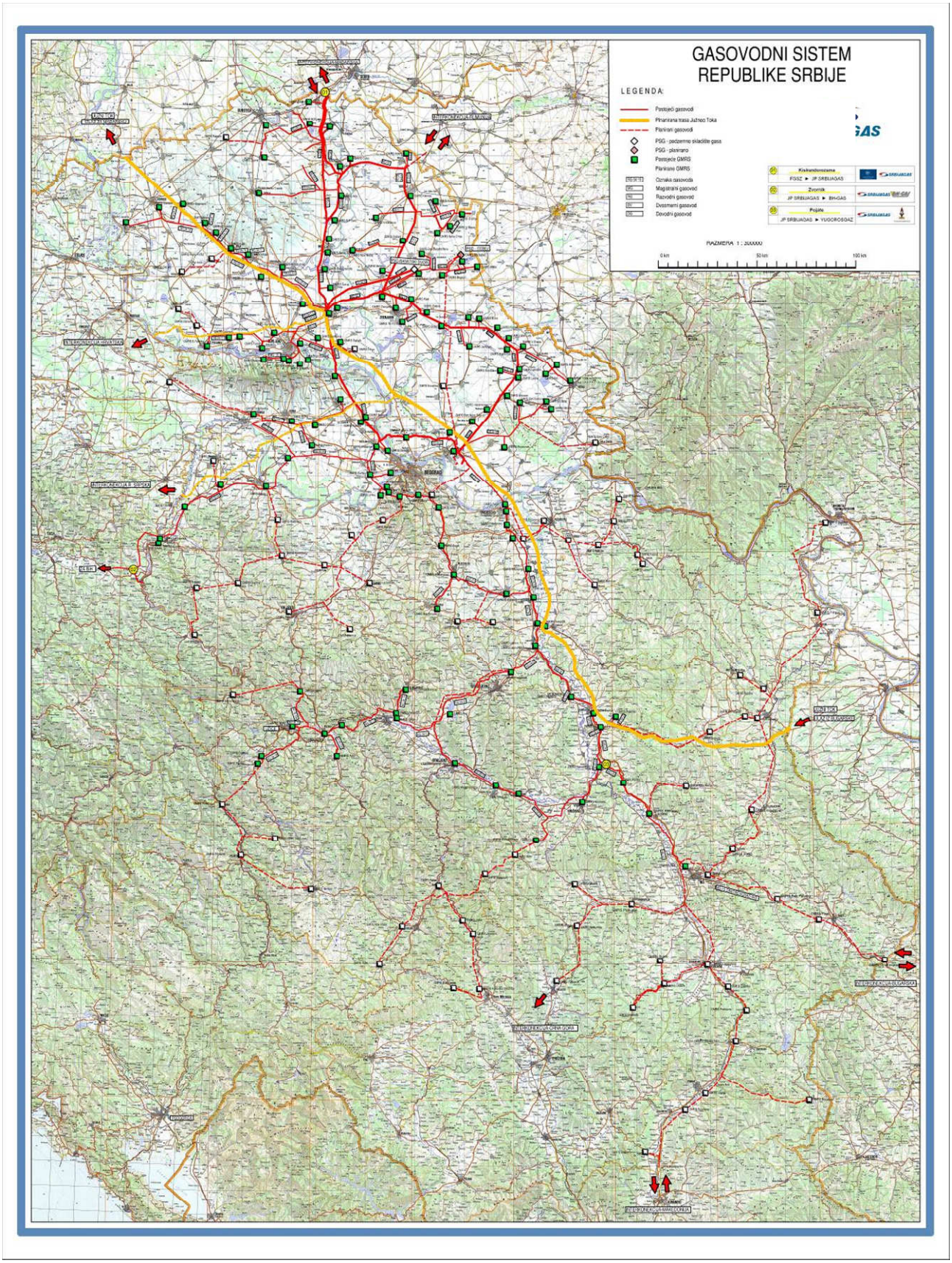

Figure 4-2: Natural gas transmission system of the Republic of Serbia

4.3.2 Distribution

The length of the distribution network has increased from 2005 to 2011 by 45%, i.e. 14,628 km thus creating the conditions for the connection of new customers.

Table 4-4: Length of the distribution network in Serbia in 2010 and 2011

	2010	2011
Length of distribution network (km)	14,299	14,628

Total length of the distribution network (without connections) in the end of 2011 amounted to 14,628 km. There are over 257, 000 of active connections (Tables 4-4 and 4-5).

Table 4-5: Length of distribution networks and number of delivery points on December 31, 2011

No.	Natural gas distributer	Legal form	Distribution network length (m)	No. of active connections
1	7. Oktobar, Novi Kneževac	PUC	49,652	1,617
2	Beogas, Belgrade	LLC	210,029	8,209
3	Beogradske elektrane, Novi Beograd	PUC	330,710	3,798
4	Boss petrol, Trstenik	LLC	24,084	21
5	Čoka, Čoka	PUC	27,195	805
6	Drugi oktobar, Vršac	C	198,040	12,432
7	Ekos, Žitište	PUC	261,549	4,180
8	Elgas, Senta	PE	64,100	1,747
9	Gas – Feromont, Stara Pazova	JSC	553,003	16,040
10	Gas – Ruma, Ruma	PE	444,939	6,917
11	Gas, Bečej	LLC	192,840	1,635
12	Gas, Temerin	PE	266,500	6,559
13	Graditelj, Srbobran	PUC	150,200	2,298
14	Grejanje, Zrenjanin	C	509,287	20,547
15	Ingas, Inđija	PE	353,523	9,012
16	Interklima, Vrnjačka Banja	LLC	103,050	934
17	Komunalac, Novi Bečej	PE	116,500	2,305
18	Kovin – Gas, Kovin	PE	307,029	4,109
19	Loznica - Gas, Loznica	LLC	121,840	1,168
20	LP - Gas, Belgrade	LLC	51,386	1,393
21	Novi Sad – Gas,Novi Sad	C	2,362,175	43,948
22	Polet, Plandište	PUC	239,300	3,631
23	Resava Gas, Svilajnac	LLC	44,854	285
24	Rodgas, Bačka Topola	JSC	185,884	1,222
25	Sigas, Požega	LLC	19,977	271
26	Sloga, Kanjiža	JSC	171,300	3,993
27	Sombor – Gas, Sombor	LLC	170,550	1,638
28	Srbijagas, Novi Sad	PE	5,707,676	77,309
29	Srem - Gas, Sremska Mitrovica	PE	259,924	4,596
30	Standard, Ada	PUC	75,850	1,015
31	Suboticagas, Subotica	PUC	398,080	8,555
32	Tehnoenergetika, Kruševac	LLC	33,971	524
33	Toplana – Šabac, Šabac	PUC	159,454	2,170
34	Užice – gas, Užice	LLC	91,899	92
35	Vrbas – Gas, Vrbas	PE	181,158	1,614
36	Yugorosgaz, Beograd	JSC	216,483	556
	TOTAL		**14,628,704**	**257,145**

The share of the distribution network of PE Srbijagas in total length of distribution network amounts to 39%.

4.3.3 Storage

Underground gas storage Banatski Dvor is located on the exhausted gas deposit whose capacity used to amount to 3.3 billion cubic meters of natural gas. Total are of the storage amounts to around 54 square kilometers. There is currently 450 million cubic meters of available capacity while maximum productivity in the withdrawal process amounts to 5 million cubic meters per day. After the second phase of construction is completed, the storage will have the capacity of 800 million cubic meters of gas. Banatski Dvor is 22 km east to the Zrenjanin city and 44 km from the main gas main junction gas pipeline point in Gospođinci. The underground storage is connected by two gas pipelines to the gas junction point in Elemir.

Banatski Dvor storage was comissioned in November 2011. It is planned to increase its capacity to 800 million m^3 until the heating season 2014/2015.

Two-direction gas pipeline Gospođinci – Banatski Dvor enables unhindered and full connection of the underground gas storage with the transmission system. The basic data on this gas pipeline are the following:

- length 42,5 km
- nominal diameter DN 500
- maximum working pressure pmax=75 bar
- maximum gas flow:
  - withdrawal UGS B. Dvor Q=415,000 S m^3/h (10 million S m^3/day)
  - injection UGS B.Dvor Q=230,000 S m^3/h (5,5 million S m^3/дан)

This storage contributes to security of natural gas supply in Serbia. In 2011, 183 million m^3 were injected from the transmission system into the storage while 33 million m^3 of natural gas were withdrawn from the storage into the transmission system.

Banatski Dvor storage is being built in line with the interstate Agreement on Cooperation in the Oil and Gas Field, concluded between the governments of the Republic of Serbia and the Russian Federation on January 25, 2008. The contract on the realisation of the joint project was signed in October 2009. “Gasprom” has 51% of shares while “Srbijagas” has 49% of shares in the joint company.

4.4 Natural gas consumption and supply sources

In 2011, 2,343 million m^3 of natural gas were available from import, local production and underground storage. Local production amounted to 462 million m^3. It was 31% higher than in 2010 and its share in total consumption amounted to 19%. NIS used for its own operations 18 million m^3 while the remaining quantities were delivered to the natural gas trader for tariff customers’ supply.

Most of natural gas quantities are provided through import from the Russian Federation based on the long-term contract. Annexes are added to the contract every year. In 2011, natural gas import amounted to 1, 675 billion m³, out of which 1,407 billion m³ from the Russian Federation, while 51 million m³ were imported from Hungary.

Based on commercial data, in 2011, 72 million m³ were injected in underground natural gas storage for pillow and commercial gas and 206 million m³ were withdrawn from the storage and delivered to customers.

Table 4-6: Natural gas supply sources and consumption in 2010 and 2011

	2010 million m^3	**2011** million m^3	**2011/2010** %
Production injected into transmission system	331	441	33%
Production injected into distribution system	21	21	0%
Total production	352	462	31%
Import from the Russian Federation	1,785	1,624	-9%
Import from other sources	183	51	-72%
Total import	1,968	1,675	-15%
Quanities withdrawn from the underground storage	29	206	610%
TOTAL AVAILABLE QUANTITIES	2,349	2,343	0%
Natural gas producers’ demand	34	18	-47%
Gross consumption	**2,315**	**2,325**	**0%**
Transmission system losses and consumption within it	3	2	-33%
Distribution network losses	21	21	-0%
For final consumption	2,234	2,302	3%

Bearing in mind energy entities demand, non-energy related consumption and different gas quantities in line pack, 2,312 million m^3 were sold to natural gas customers in total.

Consumption structure for three customer categories: households, district heating companies, industry and other is given in Table 4-7.

Table 4-7: Consumption structure in 2010 and 2011

Consumption category	2010 Thousands m^3	2011 Thousands m^3	2011/2010 %
Households	268,797	264,696	-2%
District heating companies	464,768	539,390	+16%
Industry and other	1,500,015	1,508,063	+1%
Total	2,233,580	2,312,149	+4%

Number of natural gas customers in 2011 was increased by over 5,000 in comparison to 2010 and in the end of 2011, it amounted to 257,145. 244,281 or 94.9% are householeds while households consumption accounts for only 11.4% of final consumption in 2011. Disctrict heating companies consumption accounted for 23.3%, while industry and other customers covered 65.2%.

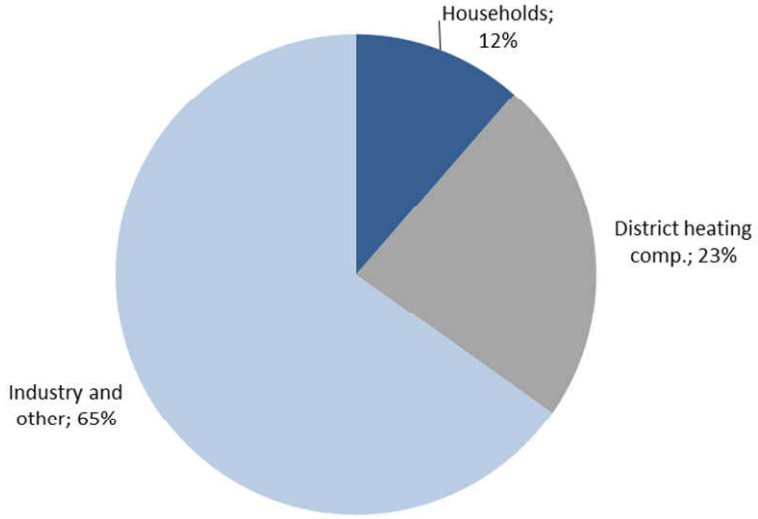

Figure 4-3: Structure of natural gas consumption in Serbia in 2011

4.5 Regulation of transmission system operator

PE Srbijagas and Yugorosgaz JSC are transmission system operators holding the licence for transmission and transmission system operation.

Transmission system operator is responsible for:

- secure and reliable transmission system operations and the quality of natural gas delivery;
- safe transmission system operations;
- transmission system management;
- transmission system development providing for long-term capability of the transmission system to comply with rational requirements in terms of natural gas transmission;
- coordinated operations of the transmission system with other transmission systems, i.e. with distribution systems and natural gas storage;
- system balancing;
- non-discriminatory access to the transmission sytem;
- accuracy and reliability of natural gas metering on delivery points from and into the transmission system;
- organisation and administration of natural gas market.

and is obliged to:

- maintain and develop transmission system;
- adopt transmission system code;
- adopt transmission system development plan for at least ten years, harmonised with development plans of systems connected to it and with requrements in terms of connection of production and customers facilities;
- adopt a programme for securing non-discriminatory environment which includes measures which prevent discrimination, defines obligations of the personnel and code of conduct, appoints a person responsible for monitoring this programme realisation and reports on the implementation of adopted measures on regular basis;

- procure natural gas for balancing purposes and so as to provide for secure system operations and for recovery of losses within transmission network based on priciples of minimum expenses, transparency and non-discrimination;
- work on system balancing in line with priciples of minimum expenses, transparency and non-discrimination;
- take prescribed safety measures during transmission system operations and oprations of other capacities within the transmission system;
- adopt a decision on the price of the access to the transmission system;
- establish natural gas price for system balancing in line with the transmission system code;
- not to discriminate transmission system users or system user groups, in particular not to give preference to energy entities connected to it;
- provide transmission system users with the information on efficient access to the system, based on principles of transparency and non-discrimination;
- secure confidentiality of commercially-sensitive information obtained during operations while publish the information by which advantage could be gained in the market in a non-discriminatory way;
- collect and publish the data and information necessary for the compliance with commitments in terms of transparency and natural gas monitoring in line with the Natural Gas Transmission System Code;
- determine technical and technological requirements for the conncection of power facilities, devices and plants into a common system;
- monitor security of supply and submit the data which are to be incorporated into the report on security of supply to the Ministry;
- take measures aimed at energy efficiency increase and environment protection;
- exchange information necessary for safe and secure operations of the system with other system operators;
- submit the data and documentation necessary for price regulation to the Agency and
- regulate other issues relevant for transmission system operations.

As of 2012, natural gas transmission system operator is obliged to submit the development plan to the Agency every year. The plan is approved by the Agency.

4.5.1 Transmission System Code

Transmission System Code was not submitted to the Agency, not even in 2011. In cooperation with the consultant, PE Srbijagas prepares the draft of the Transmission System Code. This code will also include the relevant natural gas market code.

4.5.2 Regulation of price of access to the transmission system

Regulated prices of access to, i.e. use of transmission system have been applied for the first time since October 15, 2008.

In 2011, the Agency adopted an opinion to new prices proposed by energy entities. In October 2011, the Government of the Republic of Serbia approved the proposed prices of the use of the transmission system which were submitted by PE Srbijagas. In November 2011, the prices of the use of the transmission system of Yugorosgaz JSC were approved. The prices are given in Table 4-8.

Table 4-8: Prices of use of transmission system

Natural gas transmission operator	Tariff rate		
	Fuel RSD/m^3	**Capacity** RSD/m^3/day/year	**Fuel** for system operation RSD/m^3
PE Srbijagas, Novi Sad	0.79	54.98	0.00
Yugorosgaz, JSC, Belgrade	1.13	75.52	0.00

Pursuant to the Law, the Agency drafted a new Methodology for Setting Costs for Connection to Natural Gas Transmission and Distribution System. Expert debate was held with system operators and users and in 2012, this Methodology will be adopted.

4.5.3 Harmonisation with the EU directives

Transmission system operator's activities are harmonised with the Directive 2003/55/EC, as indicated in table 4-9.

Table 4-9: Harmonisation of PE Srbijagas and Yugorosgaz JSC activities with requirements of Article 9 of Directive 2003/55/EC

Obligations of the system operator (Article 8 of Directive 2003/55/EC)	Tariff system	Methodology (connection price)	Code	Development plan
Operate, maintain and develop under economic conditions secure, reliable and efficient plants, with due regard to the environment	-	-	NO	NO
Refrain from discriminating between system users and classes of system users, particularly in favour of its related undertakings	YES	YES	NO	-
Provide any other transmission system operator, distribution system operator or storage operator with sufficient information to ensure that the transmission and storing of natural gas may take place in a manner compatible with the secure and efficient operation of the interconnected system	-	-	NO	-
Provide system users with the information they need for efficient access to the system.	-	-	NO	-

4.5.4 Transmitted natural gas quantities

In 2011, Srbijagas transmission system withdrew 2,788 million m^3 of natural gas. These quantities were transmitted so as to meet the demand on the side: customers, transit for Bosnia and Herzegovina, storing, transmission and distribution system operators for gas losses recovery and compressor operations. Transmission was reliable and safe, with remote control and control of parameters of transmission system situation from control centers which are in Belgrade and Novi Sad.

Transmitted quantities[7] are given in Table 4-10.

Table 4-10: Transmitted natural gas quantities in 2010 and 2011

	2010	2011	2011/2010
	million m^3	million m^3	(%)
Production	331	441	33.2
Entry into Serbia from Hungary to meet Serbia's demand	1,968	2,031	3.2
Entry into Serbia to meet Bosnia and Herzegovina's demand	249	283	13.7
Total	2,548	2,755	8.1
From storage	29	33	10.3
Transmitted quantities	2,577	2,788	8.1

4.5.5 Use of cross-border transmission capacities

The Republic of Serbia has two interconnections with other gas pipeline systems (one entry and exit point):

- Hungary – Serbia (Kiskundorozsma) – entry point
- Serbia – Bosnia and Herzegovina (Zvornik) – exit point.

Both interconnections are a segment of Srbijagas transmission system, while there are no gas pipelines connected with the transmission systems of neighbouring countries within the Yugorosgaz JSC transmission system.

4.5.5.1 Rules on the allocation of cross-border transmission capacities

Srbijagas Transmission System Code will include the Rules for the Allocation of Cross-Border Transmission Capacities and Congestion Management. The mechanism for the allocation of capacities on interconnection lines will be also included.

[7] Total gas quantities withdrawn into the transmission system – the quantities differ from available quantities since total quantities include both those transmitted to the storage and from the storage to customers.

4.5.5.2 Allocation of capacity on interconnection lines and congestion management

Being transmission system operator interconnected with other countries, PE Srbijagas is entitled to award capacities on interconnection gas pipelines. In 2011, capacities were allocated on the entry point Hungary – Serbia (Kiskundorozma) so as to meet the demand of PE Srbijagas, Russian – Serbian Trading Company, PCT and the Company for gas production and transmission BH – Gas LLC Sarajevo. Exit capacity towards Bosnia and Herzegovina was allocated only so as to meet the demand of BH Gas. There were no congestion problems.

In 2011, the utilisation rate of the entry continuous capacity on Serbian-Hungarian border amounted to 59% with 540,000 m^3/hour (13 million m^3/day). In 2010, it amounted to 47%, but it is important to bear in mind that natural gas consumption depends on the season and therefore, it is unbalanced. For this reason, capacity utilisation is considerably lower during summer. The highest daily quantity withdrawn into the transmission system on the Serbian-Hungarian border in 2011 amounted to 12.7 million m^3/day. 11.2 million m^3/day were used by customers in Serbia, while 1.6 million m^3/day were intended for Bosnia and Herzegovina. Bearing in mind the available interconnector capacity for natural gas customers in Serbia of 11 million m^3/day and interconnector utilisation rate of 90%, it is possible to have 3.6 billion m^3 imported which is over 50% higher than annual import in 2005-2011.

4.5.6 Balancing

Pursuant to the Law, transmission system operators are responsible for natural gas system balancing in the Republic of Serbia. The operator is obliged to procure gas for balancing purposes and so as to provide secure system operations and recover losses in the transmission system, in line with the principles of minimum costs, transparency and non-discrimination.

System balancing is realised by changing nominated imported gas quantities and by using the system capacity during the day, using stored gas and suspending natural gas delivery to those customers who can switch to alternative fuels at times of peak load, when the demand exceeds the capacities of interconnection with Hungary and when it is not possible to use stored gas.

Natural gas market players have to regulate their balancing responsibility by conclusion of a transmission contract which defines financial responsibility for the discrepancy between natural gas quantities sold at points of entry into the transmission system and quantities withdrawn on points of exit from the transmission system. Natural gas transmission system operator is responsible for the establishment and realisation of balancing responsibility of market players and for keeping balancing responsibility registry, in line with the transmission system code and supplier switching rules.

4.6 Regulation of distribution system operator

In 2011, 36 companies held licence for distribution and distribution system operation. Natural gas distribution sector has one dominant feature, i.e. great network fragmentation. For this reason, there is no economy of scale and therefore, customers pay higher network charges. In some cases, PE Srbijagas bought some small distribution companies which could not survive, but the initiatives to that end are not strong enough. One should pay attention to this when network permits are issued in those cities which are either not gasified at all of which are not gasified to an acceptable level. Upon price regulation, developed European countries faced reduction of number of distribution companies, especially in natural gas sector, but this was not the case in Serbia.

Such a great number of small distribution companies with low personnel capacity takes huge time and engagement of the Agency in terms of data preparation and control so as methodologies and tariff system could be implemented.

Natural gas distribution system operator is responsible for:

- secure and reliable distribution system operations and the quality of natural gas delivery;
- safe operations of the natural gas distribution system;
- distribution system development providing for long-term capability of the distribution system to comply with rational requirements in terms of natural gas distribution in a way which is justified in economic terms;
- non-discriminatory access to the distribution system;
- distribution system management;
- accuracy and reliability of natural gas measurements

and is obliged to:

- maintain and develop distribution system;
- adopt distribution system code;
- adopt distribution system development plan for at least five years, harmonised with development plan of other systems connected to it and with requirements in terms of connection of production and customers facilities;
- adopt a programme for securing non-discriminatory environment which includes measures which prevent discrimination, defines obligations of the personnel and code of conduct, appoints a person responsible for monitoring this programme realisation and reports on the implementation of adopted measures on regular basis;
- submit the data which are to be incorporated into the report on security of supply to the Ministry;

- adopt a decision on the price of the access to the distribution system;
- publish connection pricess;
- adopt a plan for system loss reduction if losses exceed the level which is justified in technical terms;
- procure natural gas to recover losses within the distribution network based on priciples of minimum expenses, transparency and non-discrimination;
- not to discriminate distribution system users or system user groups, in particular not to give preference to energy entities connected to it;
- provide the information on efficient access to the system to distribution system users, based on principles of transparency and non-discrimination;
- secure confidentiality of commercially-sensitive information obtained during operations while publish the information by which advantage could be gained in the market in a non-discriminatory way;
- verify and submit the data relevant for electricity market administation to the transmission system operator, pursuant to the natural gas market code;
- take prescribed safety measures during the use of distribution system;
- exchange information necessary for safe and secure operations of the system with other system operators;
- submit the data and documentation necessary for price regulation to the Agency;
- take measures aimed at energy efficiency increase and environment protection;
- regulate other issues relevant for distribution system operations.

Pursuant to the Law, the Agency drafted a new Methodology for Setting Costs for Connection to Natural Gas Transmission and Distribution System.

4.6.1 Distribution System Code

In 2011, not one natural gas distributer submited the Code to the Agency for approval. The deadline prescribed by the Law for the submission of the Code is six months upon publishing transmission system code. It is expected that at least PE Srbijagas will submit the draft code in the first half of 2013.

4.6.2 Regulation of price of access to the distribution system

Prices of access to, i.e. utilisation of the distribution system are established based on ruling methodologies and tariff systems and they have been applied since October 15, 2008 for those customers connected to PE Srbijagas network, while they have been applied to most of other customers since the first half of 2009.

Upon the opinion in favour issued by the Agency, on November 1, 2011, the Government of the Republic of Serbia approves the proposed distribution network prices submitted by PE Srbijagas and other natural gas distributers. The Government approved the prices proposed by PE Srbijagas on October 19, 2011, and those by other distributers on November 4, 2011. The ruling prices for the use of natural gas distribution system are available on the Agency website (www.aers.rs).

4.6.3 Harmonisation with the EU directives

Table 4-11 indicates the level of harmonisation of distribution companies with the requirements arising from the Article 12 of the Directive 2003/55/EC.

Table 4-11: Level of harmonisation of distribution companies with the requirements arising from the Article 12 of the Directive 2003/55/EC

System operator obligations (Article 12 Directive 2003/55/EC)	Tariff system	Methodology (connection prices)	Code
Secure, reliable and efficient operation of the distribution system	YES	YES	NO
Non-discrimination between system users (or classes of system users)	YES	YES	NO
Provision of sufficient level of information to system users necessary for an efficient system access	-	-	NO
Exchange of information with other transmission and distribution operators and storage operator so as to provide a safe and efficient work of the interconnected system	-	-	NO

4.6.4 Distributed natural gas quantities

Distributed natural gas quantities are withdrawn into the distribution systems mostly from the natural gas transmission system. Certain natural gas quantities are withdrawn from the distribution system of Srbijagas to other distributers. Only small quantities are provided from natural gas production facilities connected to the distribution system. Table 4-12 indicates natural gas quantities distributed to natural gas distribution in 2011.

Table 4-12: Distributed natural gas quantities in 2011

	million m^3
Total distributed quantities	1,413
withdrawn from the transmission system	1,392
from distribution systems	97
from production facilities	21.4
losses	21
	1.5%

4.6.5 Regulation of prices for regulated natural gas supply

Regulated prices for tariff natural gas customers were applied as of October 2008 for PE Srbijagas customers, while these were applied for other customers as of the first half of 2009. The ruling prices have been applied since November 1, 2011[8].

Natural gas purchase price has the greatest share in total retail gas price for final customers. Figure 4-4 illustrates an example of the structure of average retail natural gas price for final customers of PE Srbijagas, applied as of November 1, 2011.

The ruling regulated prices for final customers are available on the Agency website (www.aers.rs).

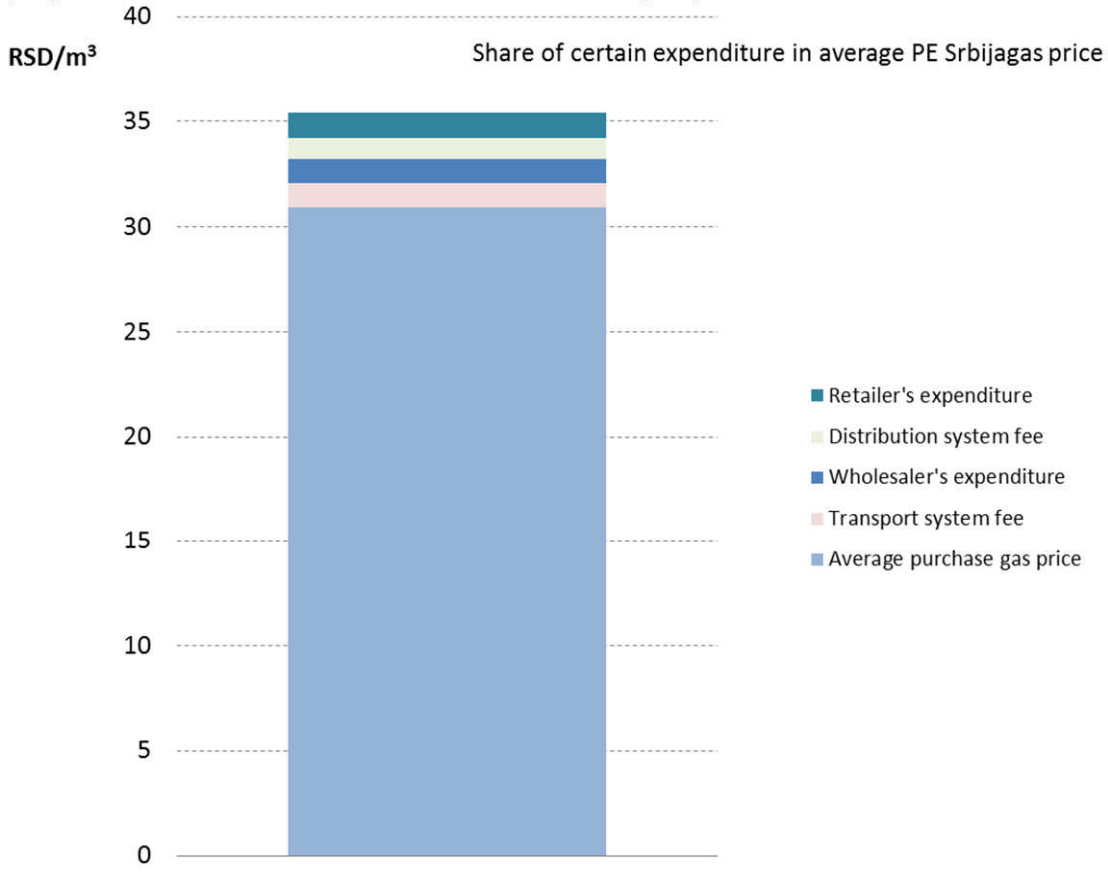

Figure 4-4: Structure of average retail natural gas price for PE Srbijagas tariff customers

Figure 4-5 indicates the comparison between PE Srbijagas prices and those from other countries of the EU or from the region for standard customer from household category in the second half of 2011. The prices were calculated in line with the EUROSTAT methodology. If prices for households in Serbia are compared with other countries, one can conclude that only households in Romania and Croatia pay lower price than those in Serbia. These two countries have local gas share of more than 50% within the source structure.

[8] For gas customers connected to the network of distribution companies Boss Petrol, Trstenik, Loznica – Gas, Loznica, LP – Gas, Belgrade, Toplana – Šabac, Šabac, gas is invoiced in line with Srbijagas tariffs since the conditions for approval of their prices were not met.

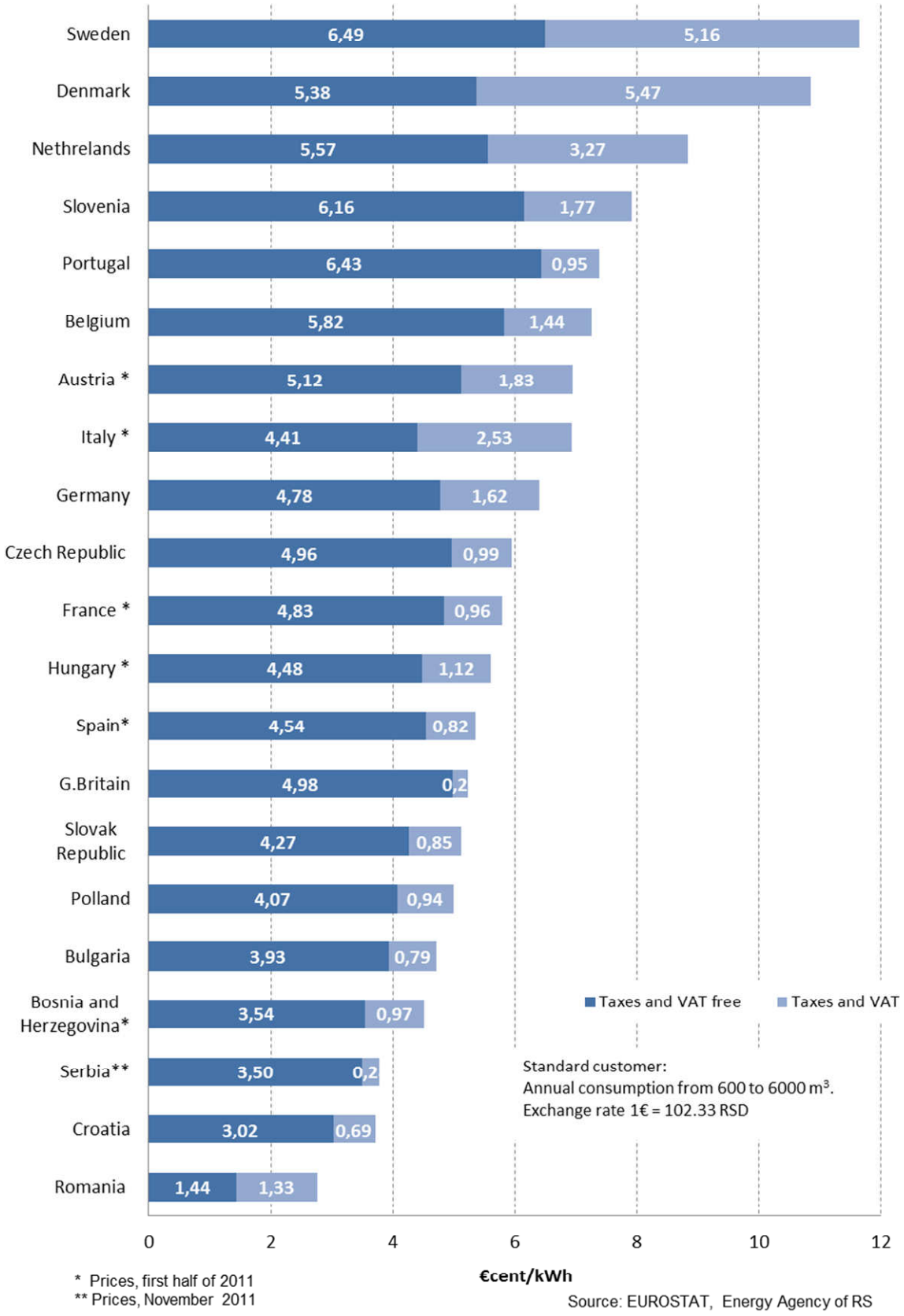

Figure 4-5: Natural gas prices for households – the second half of 2011

Figure 4-6 indicates the comparison of PE Srbijagas prices and those in other countries in the EU or in the region for standard customer from the industry category in the second half of 2011. In comparison to those in Serbia, lower prices are paid by industry in Romania, Great Britain, Italy and Spain. It is mainly due to the fact that they have their own natural gas sources available and other suppliers as well (from the North Sea, gas from Africa, etc.).

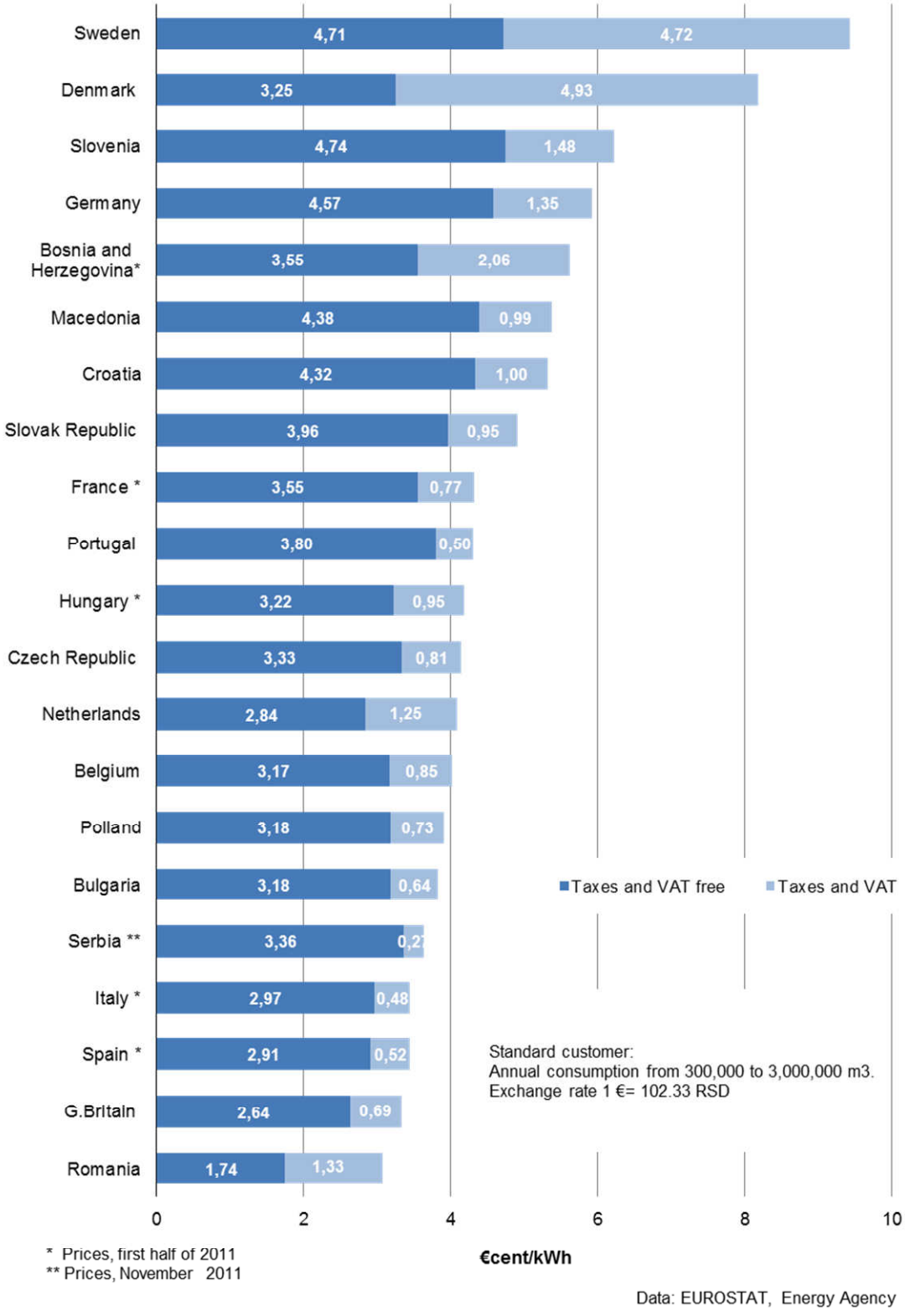

Figure 4-6: Natural gas prices for industry – the second half of 2011

4.7 Natural gas market

4.7.1 Wholesale market

Purchase price changes and US dollar exchange rate have the greatest influence on natural gas wholesale market. Based on the long-term contract with Gasprom as a dominant supplier, the purchase prices are established based on a formula which includes as basic elements three oil derivatives whose prices are established on the international market (one takes into consideration average price in nine months). Local gas price is connected to imported gas price.

In 2011, imported gas price was increased by 43%.

4.7.1.1 Joint activities on regional market development

Development of the regional "Gas Ring" is the most important joint initiative for gas sector within EnC. It is aimed at connection gas infrastructure in the region in a ring structure, bearing in mind natural gas demand in the region and the existing and planned infrastructure in the countries of the region, liquefied natural gas terminals and natural gas storages which can be connected into the gas ring. The realisation of the gas ring would provide for market expansion and improve security of supply, not only in the countries in the region but in the countries upstream or downstream to the region as well.

Common activities which were realised in 2011 imply estimation of existing regulatory framework for investment promotion, bearing in mind the need to establish common and harmonised regulatory rules for the projects important for the region, such as the gas ring. ECRB Gas Working Group selected two concrete segments of the gas ring which were considered during 2011 in terms of analyzing regulatory requirements for the construction of this infrastructure.

In 2011, the Study on Recommendations for Funding Investments in the Energy Community Gas Ring was completed. Further regulators activities selected gas ring routes are expected in 2012.

4.7.2 Retail market

4.7.2.1 Natural gas quantities delivered to final customers

In 2011, ten big customers procured gas in the open market. 775 million m^3 were delivered to those customers, i.e. 33.5% of total gas quantities delivered to final customers. In 2010, seven customers exercised their eligible customer status and 1,059 million m^3 of gas were delivered to them, i.e. 46.4% of total gas quantities. Despite the incomplete regulation, this was viable since there was a small number of customers and only two traders in the open market. Thus, PE Srbijagas made an agreement on procedure and allocation of jurisdiction within the public enterprise.

In 2011, tariff customers were supplied by 36 distributers holing licence for natural gas trade for tariff customers.

Table 4-13: Structure of natural gas sales in the open and regulated market

	2010 million m^3	**2011** million m^3	**2011/2010** (%)
Sold in the open market	1,059	775	-27
Sold in the regulated market	1,223	1,537	+26

In 2011, customers connected to the transmission system withdrew around 41% of total natural gas quantities sold to final customers. Remaining quantities were sold to the customers connected to the distribution system.

In 2011, only 4 distributers delivered more than 30 million m^3 to tariff customers, while 23 of them less than 10 million m^3.

The greatest share of natural gas, i.e. over 1,753 million m^3 or around 76% of total quantities was sold to customers by PE Srbijagas in 2011. The second greatest share was sold by Russian-Serbian Company for Trade (RCT) whose quantizes amounted to over 162 million m^3 while Novi Sad Gas sold slightly less than 80 million m^3 of gas which amounts to around 3% of total quantities in 2011. Individual share of other traders amounts to below 2% of total quantities.

The number of distribution companies is irrationally high in comparison to the number of customers and the scale of gas consumption in Serbia. Under these conditions, the economy of scale is not applicable. It would be rational to merge and reduce the number of distribution companies.

Table 4-14: Natural gas sales to final customers in 2010 and 2011

No.	Trader	2010				2011			000 m^3	2011/2010 (%)			
		House holds	District heating companies	Industry and other	Total	House holds	District heating companies	Industry and other	Total	House holds	District heating companies	Industry and other	Total
1	7. Oktobar, Novi Kneževac	889	0	429	1,318	845	0	530	1,375	-5	0	+24	+4
2	Beogas, Belgrade	13,454	0	1,483	14,937	13,142	0	1,601	14,743	-2	0	+8	-1
3	Beogr. elektrane, Belgrade	3,522	0	902	4,424	3,579	0	1,090	4,669	+2	0	+21	+6
4	Boss petrol, Trstenik	1	0	1,259	1,260	5	0	930	935	+400	0	-26	-26
5	Čoka, Čoka	399	0	514	913	366	0	510	876	-8	0	-1	-4
6	Drugi oktobar, Vršac	9,609	1,540	14,820	25,969	9,644	1,843	14,067	25,554	0	+20	-5	-9
7	Ekos, Žitište	1,788	278	1,157	3,223	1,812	215	1,268	3,295	+1	-23	+10	-4
8	Elgas, Senta	1,637	0	703	2,340	1,565	0	713	2,278	-4	0	+1	-3
9	Gas – Feromont, Stara Pazova	19,594	765	6,897	27,256	19,254	787	8,137	28,178	-2	+3	+18	+3
10	Gas - Ruma, Ruma	6,479	708	7,898	15,085	6,316	760	9,454	16,530	-3	+7	+20	+10
11	Gas, Bečej	1,782	0	1,169	2,951	1,699	0	1,397	3,096	-5	0	+20	+5
12	Gas, Temerin	7,209	0	1,190	8,399	6,869	0	1,475	8,344	-5	0	+24	-1
13	Graditelj, Srbobran	1,582	0	1,221	2,803	1,459	0	1,167	2,626	-8	0	-4	-6
14	Grejanje, Zrenjanin	17,287	0	4,296	21,583	16,189	11,114	4,016	31,319	-6	0	-7	-6
15	Ingas, Inđija	9,650	0	7,159	16,809	9,233	0	8,038	17,271	-4	0	+12	+3
16	Interklima, Vrnjačka banja	1,006	0	1,576	2,582	965	0	1,669	2,634	-4	0	+6	+2
17	Komunalac, Novi Bečej	1,488	0	997	2,485	1,457	0	927	2,384	-2	0	-7	-5
18	Kovin – Gas, Kovin	3,583	1,174	5,069	9,826	3,262	1,219	7,130	11,611	-9	+4	+41	+18
19	Loznica – Gas, Loznica	1,368	998	2,113	4,480	1,443	1,551	2,415	5,409	+5	+55	+14	+21
20	LP – Gas, Belgrade	2,391	0	16	2,407	2,391	0	16	2,407	0	0	0	0
21	Novi Sad – Gas, Novi Sad	54,031	888	27,277	82,196	50,342	318	29,259	79,919	-7	-64	+7	-3
22	Polet, Plandište	2,026	0	3,545	5,571	2,032	0	2,975	5,007	0	0	-16	-10
23	Resava Gas, Svilajnac	391	0	2,234	2,624	457	0	1,582	2,039	+17	0	-29	-22
24	Rodgas, Bačka Topola	1,274	0	4,826	6,100	1,235	0	6,948	8,183	-3	0	+44	+34
25	Sigas, Požega	229	0	13	242	277	0	23	300	+21	0	+77	+24
26	Sloga, Kanjiža	2,284	0	2,442	4,726	2,084	0	2,101	4,185	-9	0	-14	-11
27	Sombor – Gas, Sombor	2,029	2,619	6,098	10,746	2,013	3,067	5,791	10,871	-1	+17	-5	+1
28	Srbijagas, Novi Sad	79,881	431,019	1,353,478	1,864,378	81,081	487,611	1,185,283	1,753,975	+2	+13	-12	-39
29	Srem-Gas, Sremska Mitrovica	6,200	262	6,604	13,066	5,702	544	10,328	16,574	-8	+108	+56	+27
30	Standard, Ada	1,076	0	821	1,897	1,024	0	950	1,974	-5	0	+16	+4
31	Suboticagas, Subotica	10,478	0	14,324	24,802	10,106	0	14,919	25,025	-4	0	+4	+1
32	Tehnoenergetika, Kruševac	676	0	53	729	770	0	70	840	+14	0	+32	+15
33	Toplana – Šabac, Šabac	1,000	0	98	1,098	3,366	0	518	3,884	+237	0	+429	+254
34	Užice-gas, Užice	20	0	62	82	58	0	905	963	+190	0	+1,360	+1,074
35	Vrbas- Gas, Vrbas	2,189	0	9,279	11,469	2,056	0	7,318	9,374	-6	0	-21	-18
36	Yugorosgas, Belgrade	296	24,517	7,992	32,805	598	30,361	9,598	40,557	+102	+24	+20	+24
37	PCT							162,945	162,945	/	/	/	/
	Total:	**268,797**	**464,768**	**1,500,015**	**2,233,580**	**264,696**	**539,390**	**1,508,063**	**2,312,149**	**-2**	**+16**	**+1**	**+4**

4.7.2.2 Monitoring and regulating quality of delivery and supply

Pursuant to the new Law, the Agency is responsible to adopt rules on monitoring technical and commercial indicators and on regulating quality of natural gas delivery and supply. The Agency has not been authorised for this so far and therefore, adoption of these rules is planned in compliance with the deadlines defined by the law.

4.8 Security of natural gas supply

Energy entities operating in the gas field have not adopted development plans and they need to adopt them as soon as possible pursuant to the law. For this reason, the data given in the text on future development are based on the information given by these companies.

4.8.1 Natural gas consumption forecast

After economic crisis consequences are mitigated, it is expected that natural gas consumption will continue to grow in the years to come. Growth rate will surely depend on gas price as well. Consumption growth will be also a result of construction of new distribution grids in those areas which have not been gasified yet. Consumption growth is expected with all customer groups: households, commercial customers, district heating systems and industry. First of all for the industries using natural gas as a raw material, but for industry with high natural gas consumption in general, consumption will depend on natural gas price and the efficiency of the industry.

Considerable consumption growth is possible in case there are new cogeneration plants constructed which would use natural gas as a fuel for combined heat and power production. The first cogeneration plant which is expected to be constructed is CHP Novi Sad of 450 MW capacity.

4.8.1.1 Projects on increased security of supply

The security of supply is considerably increased by commissioning the operation in the underground storage Banatski Dvor with withdrawal capacity of 5 million m^3/day. The construction of the South Stream gas pipeline, which is expected to be finalised by the end of 2015, may be even more important for the long-term security of natural gas supply.

In addition, connecting the transmission system of Serbia with neighbouring countries, first of all with the countries with developed gas infrastructure, i.e. Bulgaria, Romania and Croatia is important for the security of supply. A feasibility study is being drafted for the connection with Bulgaria. The project for connection with Croatia is being considered within the plans on the construction of the South Stream gas pipeline.

The Energy Community accepted the Gas Ring concept which would include the segments of national gas pipelines as well as the segments of transnational gas pipelines which go through the EnC countries. The idea is to interconnect gas infrastructure of the Energy Community countries, as well as to connect them with the neighbouring EU member states, which would contribute to gas market development. Thereby, an access to different natural gas supply sources would be provided and security of supply improved. The construction of and access to the Gas Ring should be harmonised between the EnC countries in order to attract investors for construction of the missing infrastructure. For this reason, one of key challenges is to define a harmonized regulatory approach on the regional level.

Connecting the gas pipeline system of Serbia with neighbouring countries is in line with the Gas Ring idea. The interconnection to Croatia would be a segment of the Gas Ring, while the interconnections with Bulgaria and Romania would provide for additional natural gas supply sources.

5. OIL AND OIL DERIVATIVES

5.1 Sector structure and capacities

5.1.1 Organisational and ownership structure of the oil sector

"Petroleum Industry of Serbia" (Naftna industrija Srbije, a.d.) (NIS JSC), the company dealing in oil, oil derivatives and natural gas exploration, production, processing and sales is the dominant oil and oil derivatives market player in Serbia. NIS JSC has been on the stock exchange since 2010. It is owned by the Russian company "Gaspromnjeft" with around 56% of shares, by the Republic of Serbia with around 30%, while 12% are owned by a great number of small shareholders and 2% by others. In 2011, NIS JSC provided for around 85% of total Serbian demand in oil derivatives. The company has the greatest retail network. In retail of motor fuels and other types of fuels, a considerable share is also held by Lukoil, OMV, Intermol, ECO-Serbia, Petrol, Eurogas, Europetrol, MB Gas Oil, Knez Petrol, AVIA, Intergas, etc.

Pursuant to the Law, licenced energy activities in this field include:

- oil derivatives production;
- oil transport through oil pipelines;
- oil derivatives transport through product lines;
- trade in oil, oil derivatives, biofuels and compressed natural gas;
- trade in motor fuels and other types of fuels on petrol stations;
- storing oil, oil derivatives, biofuels and compressed natural gas and
- biofuels production.

Only NIS is licenced for oil derivatives production, i.e. for refinery processing.

PE Transnafta transports oil through oil pipelines.

In Serbia, there is no infrastructure for public transport of oil products through product pipelines except in those companies which use this transport for their own purposes.

So as to overcome the consequences of economic sanctions and war destruction to oil sector, the decrees were adopted in 2001 by the Government of the Republic of Serbia. On December 31, 2010, the decrees were annulled which was very important for the liberalisation of the oil derivatives market. Pursuant to those decrees, oil derivatives prices were limited and special import, processing, distribution and trade conditions and procedures for oil, i.e. oil derivatives were introduced. There was also a minimum quantity of crude oil which NIS processed for other importers.

5.1.2 Unbundling energy activities

Oil transport by oil pipelines and oil derivatives transport by product lines, being regulated activities of general interest and separate from other energy-related and non-energy-related activities, are performed by the public enterprise "Transnafta" at regulated prices.

5.2 Production and transport capacities

5.2.1 Oil and oil derivatives production

Crude oil production, import and processing in Serbia is performed exclusively by NIS – Gaspromnjeft. Total crude oil and semi-products consumption in 2011 in Serbia amounted to 2.5 million tons. Crude oil production is performed by NIS Naftagas (daughter company of NIS – Gaspromnjeft) both in Serbia and in Angola. In 2011, 1.03 million tons (43.1%) were produced in Serbia, around 80 thousand tons were produced in Angola, 1.36 million tons (56.9%) were imported, primarily from Russia (Ural type). Crude oil processing is performed in oil refineries in Pančevo and Novi Sad.

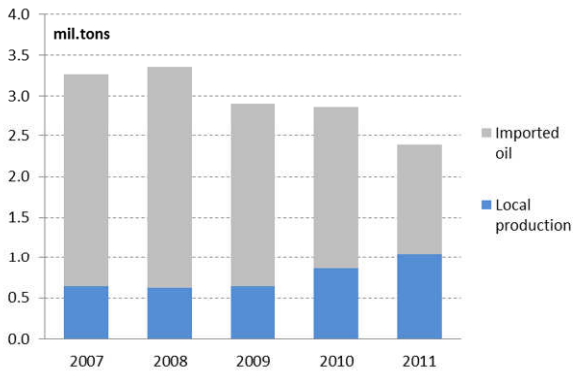

Figure 5-1: Crude oil refinery processing in Serbia in 2007-2011

Crude oil refinery processing is constantly dropping (from 2008 by 26.8%) while local production is growing (by 61.2%). Local crude oil share in total refinery processing in 2008 amounted to 18.6%, while in 2011, it amounted to around 43%. In 2011, in comparison to 2010, refinery processing was decreased by 16.5%, local oil production was increased by 19.2% and crude oil import was decreased by 31.9%.

In oil derivatives production structure, diesel production holds the domineering share with 31%, motor fuels 19%, heating oil 16%, liquid petroleum gas (LPG) 4% and other derivatives 30%.

Oil derivatives, as final products, except from refinery processing (2.33 million tons) are also imported. In 2011, around 1.59 million tons of derivatives were imported (almost 70% more than in 2010), mainly Euro diesel (EN 590) and LPG, as well as small quantities of unleaded motor fuel.

In 2005-2011, LPG consumption increased by over 20%, while motor fuels consumption in total decreased by around 5%. At the same time, unleaded motor fuels consumption increased due to lower leaded motor fuels consumption. In addition, diesel fuel consumption increased by around 3%, Euro diesel consumption increased by around 50%, while diesel D2 consumption decreased by amount 35%.

Within the oil derivatives structure, motor fuels account for 72%, fuel oil types for 16% and other derivatives for 12%.

Requirements in terms of quality of oil derivatives which are in the market, as well as the procedure for assessment of harmonisation of quality with the prescribed one are defined in the Rules on Technical Requirements and other Requirements for Liquid Fuels of Oil Origin, i.e. in the Rules on Technical Requirements and other Requirements for Liquid Petroleum Gas (“Official Gazette of RS”, No. 36/09). These Ruless also define labeling of installations used for oil derivatives trade.

5.2.2 Oil and oil derivatives transport

Oil is transported mainly through the oil pipeline between the Adriatic Sea port Omisalj to Sotin in the Republic of Croatia. The connection point of the pipeline in Serbia is in Bačko Novo Selo on the River Danube and it goes to the refinery in Pančevo through Novi Sad. The total length of the oil pipeline in the Republic of Serbia is around 150km. In 2005-2011, i.e. from the establishment of PE “Transnafta”, around 18 million tons of oil was transported in total, while only in 2011 around 550 thousand tons of local oil and 1.36 million tons of imported oil were transported. PE Transnafta is the company licenced for oil transport through oil pipelines which is a regulated energy activity. A smaller scale of imported crude oil is transported by barges by the River Danube, while the local oil is also transported by road tankers from the local fields to oil refineries (these types of transport are not licenced energy activities).

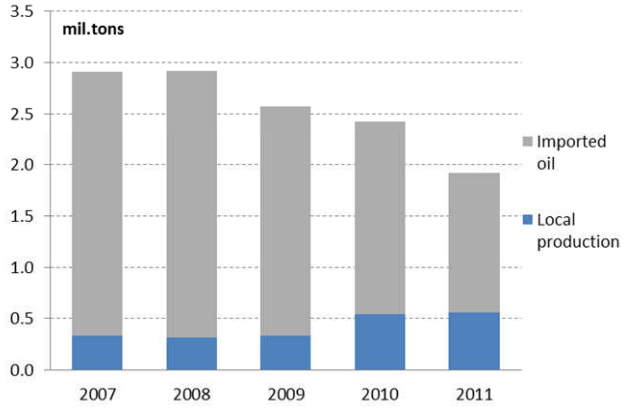

Figure 5-2: Crude oil quantities transported by oil pipeline of PE “Transnafta”

Total crude oil quantities transported in 2008-2011 (Figure 5-2) dropped by 34.1%. In addition, crude oil import drop is followed by local crude oil transport growth, as a result of local production growth in that period.

5.3 Regulation of oil and oil derivatives transport

5.3.1 Transport System Code

Transport System (TS) Code was adopted in 2010 by PE Transnafta and approved by the Agency. The Transport System Code includes: technical requirements for safe TS operations; rules for procedure in case of TS accidents; rules on TS use; metering, functional requirements and energy meters accuracy class. The Code is applied even upon the entry into force of the new Law and no considerable amendments and supplements should be made.

5.3.2 Development plan

In its five-year plan, PE Transnafta envisaged product line construction in several phases. After the completion of the final phase, oil derivatives will be transported from Novi Sad, through Pančevo and Smederevo, to Niš and possibly to Priština. International projects in this field (PEOP) are currently on hold.

5.3.3 Regulation of price of access to the transport system

Since 2007, the prices have been regulated in oil transport by oil pipelines only. Table 5-1 indicates the prices of oil transport which were valid in 2011.

Table 5-1: Prices of transmission system use in 2011

PE Transnafta, Pančevo, valid from - to	Oil pipeline branch	Tarif rate "fuel" (RSD/tons/100 km)	Government approval
29/10/2009 – 31/01/2011	Sotin – Novi Sad	179.76	"Official Gazette of RS", No. 88 as of 28/10/2009
	Novi Sad – Pančevo	122.22	
01/02/2011 – 30/11/2011	Sotin – Novi Sad	210.88	"Official Gazette of RS", No. 5 as of 01/02/2011
	Novi Sad – Pančevo	160.66	
01/12/2011*	Sotin – Novi Sad	316.05	"Official Gazette of RS", No.90 as of 30/11/2011
	Novi Sad – Pančevo	210.69	

In the period 01/12 – 31/12/2011, Transnafta approved discount of 7,34%.

Transport price growth is primarily a result of reduced oil quantities transport.

5.4 Oil and oil derivatives market

So as to overcome the consequences of economic sanctions and war destruction to the oil sector, the decrees were adopted in 2001 by the Government of the Republic of Serbia. On December 31, 2010, the decrees were annulled which was very important for the liberalisation of the oil derivatives market. Pursuant to those decrees, oil derivatives prices were limited and special import, processing, distribution and trade conditions and procedures for oil, i.e. oil derivatives were introduced. There was also a minimum quantity of crude oil which NIS processed for other importers.

There is a free oil derivatives import. The size and the necessary structure of storage capacities for each type of oil derivatives which are imported or traded in the Serbian market are defined by the regulations arising from the Trade Law. This regulation also stipulates the conditions in terms of wholesale services, i.e. oil derivatives storage and trade in motor fuels and other fuels on petrol stations. These energy activities are fully liberalized in Serbia.

Transposition and implementation of Directives 2006/67/EC and 2009/119/EC related to minimum mandatory oil and oil derivatives stock and the Directive 2009/28/EC related to obligatory content of biofuel in motor fuels, aimed at reduction of greenhouse gases emission will have a great influence on oil and oil derivatives market.

5.4.1 Wholesale market

The Law expanded the meaning of energy activity, i.e. oil and oil derivatives trade, to biofuels and compressed natural gas trade. Until the beginning of 2012, the licence for trade in oil, oil derivatives, biofuels and compressed natural gas was held by 191 energy entity, i.e. 11% less than one year ago. The main reasons for the reduction of the number of licenced energy entities for this energy activity are more strict regulations established in the 2011 autumn in the field of trade which regulate the minimum technical requirements for this activity as well as derivatives consumption drop.

In addition, oil and oil derivatives (gases, petrol, diesels and heat oil) storage activity as a service within trade activities became a licenced energy activity. The new Law expanded the scope of storing and included biofuels and compressed natural gas storing. Since 2009, there have been 13 entities holding this licence in Serbia up to the moment. Among them, NIS is the biggest one.

5.4.2 Retail market

Similar as in the case of wholesale, the Law expanded oil derivatives trade and included retail in motor fuels and other fuels on petrol stations. Except for oil derivatives, the term motor fuels also implies biofuels and compressed natural gas, while the term “other fuels” mostly relates to extra light heating oil. The consumption of this fuel increased significantly in 2011 in comparison to the times before, in proportion to diesel D2 consumption decrease.

There were 384 energy entities licenced for retail by the end of 2010, while there were 370 of them in the end of 2011. A slight decrease of the number of licenced energy entities, with practically the same number of petrol stations (around 1,450), could be the beginning of the trend of coupling retail players in the motor fuel market in Serbia.

6. ACTIVITIES OF GENERAL INTEREST AND CUSTOMER PROTECTION

6.1 Activities of general interest

Legal framework for public supply in the energy sector of Serbia is stipulated by two major laws: Law on Public Enterprises and Activities of General Interest ("Official Gazette RS", No 25/2000, 25/2002, 10772005 and 10872005) and the Energy Law.

The Law on Public Enterprises and Activities of General Interest regulates the activities of general interest in several branches of economy, energy being one of them. On the other hand, definition of an activity of general interest in the energy field and the public supply commitment are stipulated by the Energy Law, in line with the Directive of the European Parliament and Council 2003/54/EC and 2003/55/EC. The Law on Public Enterprises and Activities of General Interest defines that an activity of general interest can be performed by a public enterprise founded by the state or economic entity, i.e. some other company type, one branch of a company and entrepreneur, in line with the law regulating their legal status, when these activities are entrusted to them by the state by signing a separate agreement.

The main objective of the establishment and operation of public enterprises is to secure continuous performance of activities of general interest and to meet the demand of customers in terms of products and services, improve the performance of activities of general interest, secure technical and economic harmonisation of the system and its sustainable development, with adequate profit and gaining any other interest prescribed by the law.

On the other hand, the Energy Law defines 22 energy activities with 12 of them in the field of electricity, natural gas and oil being activities of general interest. In the field of electricity, they include the following: electricity transmission and transmission system operation, electricity distribution and distribution system operation, public supply and electricity market organisation. In the field of natural gas, they include: natural gas transmission and transmission system operation, natural gas storing and natural gas storage operation, natural gas distribution and distribution system operation and natural gas public supply. In the oil field, they include: oil transport by oil pipelines and oil derivatives transport by product lines.

Energy activities defined in the Energy Law as activities of general interest are performed pursuant to the Law regulating the status of public enterprises and performance of activities of general interest.

The Energy Law also defines electricity and natural gas public supply as an all-purpose service at regulated prices which should be provided by the public supplier to those households and small customers who do not select the supplier in the open market. Since the public supplier should be appointed by the Government, within the procedure and deadline established by the Law and since electricity and natural gas markets in the Republic of Serbia are being opened in several phases, public supply right as of 01/01/2014 will be exercised only by households and small electricity customers. As far as natural gas is concerned, only households and small natural gas customers will be entitled to public supply as of 01/01/2015.

6.2 Customer protection

In more general terms, electricity and natural gas customers' protection within services of general economic interest is enabled through the mechanisms prescribed by the Law on Customer Protection ("Official Gazette of RS", No. 73/2010).

More precisely, electricity and natural gas customers' protection is provided through the Energy Law and the bylaws regulating general terms for electricity and natural gas delivery. In particular, customer protection is provided by regulating prices of electricity transmission and distribution, i.e. natural gas transmission and distribution and the prices of public supply in electricity and natural gas. It is also provided through the decisions adopted by the Agency upon appeals of the customers against the acts adopted by system operators on both dismissal and failure to adopt the decision on submitted application for connection or access to the system. Another mechanism includes the definition of special types of protection of vulnerable customers, i.e. "energy-wise endangered customers".

The regulations on conditions for electricity and natural gas delivery and supply ("Official Gazette of RS", No. 107/2005, i.e. 47/2006 and 3/2010, pursuant to the 2004 Law, new regulations are being prepared) define the rights and obligations of customers, suppliers and energy delivery entities more closely as well as the conditions under which some customers may be disconnected from the network in case of unsettled bills.

The Law, apart from stipulating general norms related to protection of all electricity and natural gas customers, also introduces the category of the so called "energy-wise endangered customers" for the first time. The Law defines the term "energy-wise endangered customer" since "energy-wise endangered customer" does not imply the same as vulnerable customer. This term is much broader since it includes both the customers exercising rights in social care regime and those who need not belong to this category but whose life or health may be subject to danger by electricity or natural gas supply interruption. However, so as to protect those customers in a fully open market in an adequate way, the Government has to adopt bylaws which would stipulate the criteria, protection method, conditions, deadlines and procedure for the establishment of the status of this customer. These bylaws should also define the manner and sources for the provision of funds for the delivery of certain quantities of electricity and natural gas under special conditions and the procedure for keeping records on these customers.

The project on protection of energy-wise and social-wise endangered customers (customers with low income, disabled people, people facing health problems, etc.) was initiated even before the adoption of the Law, in cooperation between

several ministries, organised by the Ministry of Labour and Social Policy. The Agency participates in this project. “Comparative Analysis of Protection of “Energy-Wise Endangered Customers”” was drafted by the Agency.

Competent institutions from the EU and the EnC strive to establish some common elements which could serve as the basis for the definition of energy vulnerable customers and the ways of protection (financial support, protection from disconnection from the network due to unsettled liabilities for consumed energy in case the disconnection may affect health or survival of the customer, etc.). The protection of energy vulnerable customers will be based on the instruments acceptable for the market, while the funds for financial support will be based on the state level, not within energy entities.

One of the activities which serve as customer protection measure, and which is actively performed by the Agency includes measures and preparation activities taken with the perspective of adoption of rules on technical and commercial quality of electricity delivery. The Agency is also involved in the definition of the mandatory content of the electricity and natural gas bills which should provide all the necessary data to the customers in terms of their consumption and costs structure, as well as the instructions on how they could exercise their rights.

6.2.1 Discounts in terms of electricity billing system for vulnerable customers in Serbia

Support to the most vulnerable customers in Serbia is given based on the decision on discounts given by the public enterprise Elektroprivreda Srbije. Centers for social work determine which customers are entitled to discounts and they submit the lists to the distribution companies. The customers entitled to discount are those who are entitled to allowances as well as the customers in need of social funds (pensioners with the lowest pension level, the disabled, those under constant medical care, the poor and the families entitled to child allowance for the third and fourth child), i.e. all the customers consuming less than 350 kWh per month. As an incentive for regular collection, all customers settling their electricity bills regularly up to a certain date are entitled to discount. The discount for consumed electricity amounts to:

- 35% reduction of tariff rates for the tariff element „active energy“ for monthly electricity consumption of up to 450kWh (to the tariff customer entitled to allowance);
- 35% reduction of the tariff rate for rational consumption („green zone“) for tariff element „active energy“ for monthly electricity consumption of up to 350kWh (to a socially vulnerable tariff customer);
- 5% for regular payment of electricity bills and
- after price increase on April 1, 2011, all customers consuming less than 350 kWh are entitled to 11.89% discount for the whole bill amount.

Table 6-1: Electricity price discount in 2011

	Number of customers – months	Amount thousands RSD
Price discount 5%	15,613,895	1,509,517
Price discount 11.89%	6,050,345	781,707
MOP*	169,400	70,801
Social care allowance **	175,418	67,026
Total		**2,429,051**

* - MOP – allowances - families with no income or with income under social security level. According to the list given by social institutions, there are 885,000 customers entitled to this type of assistance, while there were around 430,000 of them on the list given by electricity distribution companies.

** - Social care allowance – individuals with the lowest pension level, foster parents, those entitled to child allowance, medical treatment and assistance provided by others.

According to both the list available in the Ministry of Labour and Social Policy and the list available in distribution companies, there are 360,000 customers entitled to this type of assistance.

One of conditions for entitlement to electricity price discount for these groups of customers is to settle their electricity bills regularly. At the same time, this is the main reason for great discrepancy between the number of persons/families entitled to the discount and those using it.

ENERGY AGENCY
ACTIVITY AND FINANCIAL REPORT

7. AGENCY'S ACTIVITY AND FINANCIAL REPORT

7.1 Agency's Activity Report

7.1.1 Basic data about the Agency

7.1.1.1 Establishment of and the scope of work of the Agency

The Energy Agency of the Republic of Serbia (Agency) was established pursuant to the Energy Law ("Official Gazette of the Republic of Serbia", No 84/04, hereafter 2004 Law), which provided for harmonisation of our legislation with the EU regulations.

The Agency was registered at the Commercial Court in Belgrade on June 16, 2005 and started working on August 1, 2005 when the conditions for financing its work were met.

Pursuant to the new Energy Law ("Official Gazette of RS", No. 57/2011, 80/11 – correction, hereafter: Law), adopted in August 2011, the Agency continued its work of a regulatory body, established so as to improve and guide energy and natural gas market development based on principles of non-discrimination and efficient competition, through the establishment of a stable regulatory framework, as well as so as to perform other activities stipulated by the law.

At the same time, the role of the Agency was strengthened and its jurisdiction was expanded. Pursuant to the Law, the Agency performs the following activities:

- adopts the following methodologies for setting:
  - price of access to electricity transmission system;
  - price of access to electricity distribution system;
  - price of access to natural gas transmission system;
  - price of access to natural gas distribution system;
  - price of access to natural gas storage;
  - price of electricity for public supply;
  - price of natural gas for public supply;
  - price of access to system for oil transport through oil pipelines and for oil derivatives through product lines;
  - costs of connection to electricity transmission and distribution system and
  - costs of connection to natural gas transmission and distribution system;
- adopts rules on:
  - supplier switching;
  - monitoring technical and commercial indicators and regulating electricity and natural gas quality of delivery and supply;
- issues liceneces for the performance of energy activities and adopts an act on licence withdrawal, under the conditions prescribed by the Law, except for the activities related to heat energy, and keeps the register of issued and withdrawn licences (entrusted procedures of the state administration, hereafter: entrusted activity);
- adopts an act defining the criteria and parameters for the definition of the licence fee;
- specifies:
  - system services prices and publishes them;
  - licence fee;
- approves:
  - electricity transmission system code;
  - rules on the allocation of cross-border transmission capacities;
  - electricity distribution system code;
  - electricity market code;
  - organised electricity market code;
  - natural gas transmission system code;
  - natural gas distribution system code;
  - natural gas storage system code;
  - oil transport (through oil pipelines) system code;
  - oil derivatives transport (through product lines) system code;
  - electricity transmission and distribution system development plan;
  - natural gas transmission system development plan;
  - programme for non-discriminatory practice;
  - approves regulated prices, as of October 1, 2012;
- adopts decisions on an appeal against:

- an act of the system operator on dismissal, i.e. failure to adopt the decision upon an application for connection to the system;
- an act of the system operator on dismissal of the access to the system;
- an act of an energy entity for oil transport through oil pipelines or an energy entity for oil derivatives transport through product lines on dismissal of the access to the system (entrusted activities);

- adopts an opinion upon application for exemption from the regulations stipulating regulated access to the system and
- decides on other issues stipulated by the law.

In addition, the Agency is authorised to:

- supervise the implementation of methodologies and approved regulated prices;
- adopt instructions and recommendations and give guidelines for the implementation of methodologies and other acts for which the Agency is responsible;
- specify the manner, procecure and deadlines for the submission of the data and documets relevant for Agency's activities;
- specify the manner, procedure and deadlines for bookkeeping aimed at regulation and implementation of the procedure for accounts unbundling and other procedures defined by the law;
- demand amendments to the system code and market code as well as to other acts in line with the Law and
- demand submission of the data and documents relevant for Agency's activities from energy entities, within the deadline which may be shorter than eight days upon the day of demand submission.

Issuance and withdrawal of licences and deciding upon appeals are entrusted activities.

The Agency provides non-discriminatory access to the systems through effective competition and efficient operations of electricity and natural gas markets.

Within its scope of work, the Agency monitors:

- efficient accounts unbundling in licenced energy entities;
- compliance with the commitments of licenced energy entities;
- application of the rules for allocation of cross-border transmission capacities in cooperation with regulatory bodies from other states;
- application of the mechanisms for removal of congestion in transmission and transport system;
- time necessary for system operators to connect an entity to the system, i.e. time for repairwork in case of interruptions;
- publishing the data on cross-border transmission capacities and on system use by transmision and transport system operator;
- system reserves use;
- conditions and costs for the connection of new electricity producers to the transmission or distribution system, so as objectivity, transparency and non-discrimination could be guaranteed, in particular having in mind the costs and benefits from different technologies for electricity production from renewable energy sources and combined electricity and heat energy production;
- manner in which system operators and energy entity dealing in oil transport through oil pipelines and oil derivatives transport through product lines perform their duties defined by the Law and
- transparency and competition level, in cooperation with the bodies authorised for competition issues.

In addition, the Agency participates in the activities of international institutions responsible for the development of regional and European electricity and natural gas market. The Agency is also responsible for the implementation of adopted recommendations and decisions.

From all the above given, the scope of work of the Agency includes the activities in four energy sectors:

- electricity,
- natural gas,
- oil and oil derivatives and
- combined electricity and heat energy production;

Regulatory activities of the Agency, determined by the Law, can be divided in five basic groups:

- price regulation;
- licencing energy entities for energy activities;
- monitoring electricity and natural gas market;
- deciding upon appeals and
- implementation of international agreements.

7.1.1.2 Organisation of the Agency

The Energy Agency of the Republic of Serbia is independent in performing organisational activities and other activities which enable the performance of the activities stipulated by the law. Pursuant to the Law, the Council of the Energy Agency (hereafter: the Council) adopts all the decisions on the issues under the jurisdiction of the Agency by majority of votes among Council members, except if it is otherwise stipulated by this law or Statute.

Within the Council, there is the President and four members. The Council President stands on behalf of the Agency and represents it, decides on the issues within the scope of work of the Agency as defined in Article 46, paragraph 1, item 8) of the Law, organizes the activities of the Agency and manages the Agency, proposes decisions and other acts adopted by the Council and monitors their implementation, has the director's authority in activities related to exercising rights and obligations of the personnel and performs other activities in line with the law, Statute and Council authorisation.

The Council adopts the Statute which regulated internal Agency organisation and procedures, Rules of Procedure and other general acts pursuant to the law. Agency Statute is approved by the National Assembly of the Republic of Serbia.

The Council President and members are responsible for their work to the National Assembly. At least once a year, the Agency submits the financial report and the report on the energy sector to the Assembly.

Organisational structure of the Agency was established based on elaborate made by the consulting house KPMG and approved by the Ministry of Mining and Energy. Organisation of the Agency is set so as to comply with the requirements in terms of efficiency and rationality in its work. To that end, Agency operates through four departments with a defined scope of work, with necessary level of coordination during the performance of complex duties for which more than one department is responsible. These departments are the following:

- Energy and Technical Department;
- Economics and Finance Department;
- Legal Department;
- Organisational and General Affairs Department.

Based on former experience, this structure provides for an efficient and rational operation within the Agency scope of work.

7.1.1.3 Independence and responsibility

Agency is an independent legal entity and its functions are independent from any state bodies or organisations and persons dealing in energy issues.

The Agency has its own financing sources, defined by the Law, separate from the state budget.

The Agency is financed from the funds provided through energy licence fees, part of price for system access as set by methodologies as well as from other revenues collected by the Agency through the performance of the activities within its scope of work. The Agency may obtain funds from grants as well, except from grants given by energy entities or persons connected to those.

In the first two years of operation, the Agency was financed from the EU funds, through the European Agency for Reconstruction, pursuant to the agreement - Grant Agreement Establishment and Operation of the Energy Regulatory Agency (grant agreement) which was concluded on July 29, 2005. This grant agreement defined the scope and the structure of Agency's expenditure in the two-year period (lease of offices, employees' costs and other costs). During the six year period, their growth was considerably lower than corresponding expenditure in the economy and the energy sector of Serbia. Even after the two-year period, the EU provided support to the Agency through grants so as to improve its professional capacities.

Pursuant to the Article 48 of the Law, the Agency adopts a financial plan defining total revenue and expenditure, including contingency funds and elements for full insight into the compensation and employment policy. The financial plan is approved by the National Assembly. The financial plan is submitted to the National Assembly at the latest by the end of October of the current year for the following year. Upon the approval of the National Assembly, it is published in the "Official Gazette of the Republic of Serbia". The Agency regularly submitted financial plans to the Assembly. The National Assembly approved the Agency Financial Plan for 2011.

Annual calculations of revenue and expenditure of the Agency are audited by an authorised auditor. If one determines that the annual revenue of the Agency exceeds total expenditure, the discrepancy amount is transferred into the financial plan as revenue for the following year. However, the sources and the amount of revenue for the following year are harmonised with realistic expenditure of the Agency for that year.

Independence of the Agency from executive authorities reflects in the fact that, pursuant to the Law, the President and members of the Agency Council are appointed by the National Assembly of the Republic of Serbia, upon a public tender. Neither the members of the parliament of the National Assembly of the Republic of Serbia, nor the members of the parliament of the autonomous province, members of the boards, other persons appointed by the state or officials of the political party bodies can be elected Council president or member. Owners or co-owners of energy entities or persons whose spouses, children or relatives of linear kinship regardless of the degree of kinship, owners or side kins up to the second degree of kinship, owners or co-owners of energy entities cannot be appointed Council president or member. In

addition, the persons who were lawfully convicted for criminal offence against official duty, corruption, fraud or other criminal offences rendering them unfit to discharge the positions they are elected to.

Pursuant to the law and other regulations, the Agency is obliged to keep commercial and other confidential business data which were submitted to it for the purpose of its scope of work as classified.

The Agency leases its offices and pays for the lease from its own funds. The Agency addressed responsible state bodies so as state-owned offices could be provided for the Agency so as to rationalize the expenditure. So far, this issue has not been settled.

7.1.2 Activities of the Agency in 2011

7.1.2.1 Price regulation

In 2011, in terms of price regulation, the Agency Council adopted the following acts:

- Decision on Amendment to the Decision on Determining Methodology for Setting Tariff Elements for Pricing Access to and Use of Natural Gas Transmission System;
- Decision on Determining Methodology for Setting Tariff Elements for Pricing Access to and Use of Electricity Transmission System;
- Decision on Amendment to the Decision on Determining the Methodology for Setting Tariff Elements for Calculating Access to and Use of System for Oil Pipeline Transportation;
- Opinion on the draft of the decision of PE "Srbijagas", Novi Sad on establishing prices of access to and use of natural gas transmission system, distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of "Yugorosgaz", JSC, Belgrade on establishing prices of access to and use of natural gas transmission system, distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC (Public Utility Company) "7. Oktobar", Novi Kneževac on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of "Beogas", LLC, Belgrade on establishing prices of access to and use of natural gas transmission system, distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC "Beogradske elektrane", Belgrade on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of "Boss petrol", LLC, Stari Trstenik on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC "Čoka", Čoka on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of "Drugi oktobar", Vršac on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC "Ekos", Žitište on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PE "Elgas", Senta on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of "Gas-Feromont", JSC, Stara Pazova on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PE "Gas-Ruma", Ruma on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of "Gas", LLC, Bečej on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PE "Gas", Temerin on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC "Graditelj", Srbobran on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC "Gradska toplana Zrenjanin", Zrenjanin on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PE "Ingas", Inđija on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of "Interklima", LLC, Vrnjačka Banja on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PE "Komunalac", Novi Bečej on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PE "Kovin-Gas", Kovin on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;

- Opinion on the draft of the decision of “Loznica-gas”, LLC, Loznica on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of “LP-Gas”, LLC in bankruptcy, Belgrade on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of “Novi Sad - Gas”, Novi Sad on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC “Polet”, Plandište on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of “Resava Gas”, LLC, Svilajnac on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of “Rodgas”, JSC, Bačka Topola on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of “Sigas”, LLC, Požega on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of “Sloga”, JSC, Kanjiža on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of “Sombor - Gas”, LLC, Sombor on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PE “Srem-Gas”, Sremska Mitrovica on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC “Standard”, Ada on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC “Suboticagas”, Subotica on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PUC “Toplana-Šabac”, Šabac on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PE “Vrbas - Gas”, Vrbas on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of “Užice - gas”, JSC, Užice on establishing prices of access to and use of natural gas distribution system and on natural gas billing for tariff customers;
- Opinion on the draft of the decision of PE “Transnafta”, Pančevo on establishing prices of access to and use of oil transport thorugh oil pipelines.

All the above given acts are available on the website of the Agency.

In the end of 2011, the Agency started drafting all the acts the Agency is obliged to adopt in line with the Law.

Permanent Agency activities include:

- cooperation with energy entities and provision of expertise in the field of impelentation of methodologies for setting prices as well as monitoring their adequate implementation;
- monitoring implementation of methodologies for setting costs for connection to electricity transmission and distribution systems, natural gas transmission and distribution systems and deciding upon customers’ appeals, thereby providing for a necessary level of customer protection and directly contributing to adequate implementation of methodologies in practice;
- cooperation with energy entities on making insight into and control of unbundling assets and costs per each activity which are included in business reports;
- monitoring and analysing the data submitted by energy entities on realised regulated prices;
- semi-year monitoring and comparison of realised electricity and natural gas prices in the region and Europe;
- monitoring costs of heating in appartments in relation with prices of fuel in the certain period of the year.

monitoring costs of appartment heating taking into account the prices of fuels in a certain period of the year.

7.1.2.2 Licencing energy entities for energy activities

Activities related to licencing energy entities for energy activities are administrative procedures, performed by the Agency as entrusted activities, pursuant to the Law. These include:

- issuing licences for energy actvities;
- amendments to issued licences;
- withdrawal, revoking and adoption of decision on withdrawal of the licence by virtue of law;
- monitoring the fullfilment of prescribed requirement by energy entities during the validity period of the licence and
- keeping registry of issued and withdrawn licences.

Requirements for issuance and withdrawal of licences and keeping registry of issued licences are prescribed by the Law and the rules regulating the conditions for issuing licences for energy entities and which is adopted by the ministry in charge of energy issues. These are the main regulations the Agency implements within the licencing procedure. The registry of issued licences is a public document and it is both available in the written form and kept in the Agency registry and in the electronic form available on the website of the Agency.

So as to perform these duties, in line with its legal authorisation, the Agency also adopts the Criteria and Standards for Determining Energy Licence Fees and sets the coefficient value for the calculation of the licence fee for each calendar year. A separate decision is adopted for this and it is published in the “Official Gazette of the Republic of Serbia”.

Upon the adoption of the Law, the Agency adopted the Criteria and Standards for Determining Energy Licence Fees (“Official Gazette of RS”, No. 76/2011) thus harmonizing the titles of energy activities with the titles stipulated by the Law.

The rules regulating the conditions for the issuance of licences for energy activities (with prescribed forms and proofs necessary for the submission of the application for issuing energy licence) is published on the Agency website, and thereby, energy entities are being informed. Submission of applications for issuance of energy licence is thus facilitated.

Within the 30 days deadline upon the submission of orderly application, within the administrative procedure, the Agency adopts a decision on issuing energy licence for a certain energy activity. Upon the moment the decision on issuing the energy licence becomes final, the Agency registers it in the licence registry.

The Agency issues licences for 19 energy entities established by the Law:

- electricity generation (electricity generation of total allowed connection power of over 1 MW);
- combined electricity and heat energy production (combined cycle - combined electricity and heat energy production in thermal power plants-district heating companies in facilities of over 1 MW of total connection power and over 1 MWh of total heat power);
- electricity transmission and transmission system management;
- electricity distribution and distribution system management;
- electricity public supply;
- electricity market organisation;
- oil derivatives production;
- oil transport through oil pipelines;
- oil derivatives transport through product lines;
- storing oil, oil derivatives and biofuels;
- trade in oil, oil derivatives, biofuels and compressed natural gas;
- trade in motor fuels and other types of fuels on petrol stations;
- natural gas transmission and transmission system operations;
- storing natural gas and natural gas storage management;
- natual gas distribution and natural gas distribution system;
- natural gas supply;
- natural gas public supply and
- biofuels production of over 1,000 t per annum.

In 2011, there were 131 applications for licence issuance submitted to the Agency. Since there were 1,243 applications in the period 2006-2010, there were 1,374 in total.

In 2011, unorderly applications from previous years and applications submitted in 2011 were processed. By the end of 2011, 63 new licences were issued. 182 issues ended in permanent withdrawal of licence, its annulment, and suspension by virtue of law or dismissal of incomplete (unorderly) application. In the end of 2011, there were 818 ruling licences in total.

During application processing, in most cases, the applications were returned to energy entities for supplements and corrections due to incomplete documentation. In some cases, applications were sent back to energy entities several times. Upon correction of deficiencies and upon completing the documentation, all applications were addressed again, so as to check the fulfillment of conditions for licence issuance. For the given reasons, there are more than 100 of applications processed at the moment.

As of 2008, there were several applications for the amendments of the decisions on issuance of energy licences, especially in the oil sector – for trade in motor fuels and other types of fuels on petrol station. Most applications were submitted due to the change of facilities where energy activity is performed. In 2011, the Agency adopted 31 decisions on amendments on decisions for the issuance of licence for this activity.

Complying with the commitments arising from the Law, in the last quarter of 2011, the Agency registered the changes of energy activities titles. So as to harmonise the titles of energy activities stipulated by the new Law, notes were attached to 576 decisions on issuing licence pursuant to the 2004 Law.

The Agency is not responsible for energy entities that did not comply with the conditions for issuing licence. However, upon the statements of responsible market inspection in 2011, pursuant to the Law, the Agency filed two complaints against economic offences against legal persons performing energy operation without licence. The list of licences issued in 2011 per each activity is given in Table 7-1.

Table 7-1: Submitted applications and approved licences in 2011 per each activity

No.	Activity	Submitted applications	Approved licences
1.	Electricity generation (electricity generation of total approved connection power of over 1 MW)	0	4
2.	Combined electricity and heat energy production (combined electricity and heat energy production in combined heat and power plants in facilities of over 1 MW of total electrical power of the connection and over 1 MWt of total heat power)	0	1
3.	Electricity transmission and transmission system management	0	0
4.	Electricity distribution and distribution system management	0	0
5.	Electricity supply	8	8
6.	Electricity public supply	0	0
7.	Electricity market organisation	0	0
8.	Oil derivatives production	0	0
9.	Oil transport through oil pipelines	0	0
10.	Oil derivatives transport through product lines	0	0
11.	Storing oil, oil derivatives and biofuels	3	
12.	Trade in oil, oil derivatives, biofuels and compressed natural gas	32	9
13.	Trade in motor fuels and other fuels on petrol stations	76	29
14.	Natural gas transmission and transmission system operations	0	0
15.	Natural gas storing and storage system management	0	1
16.	Natural gas distribution and distribution system management	2	1
17.	Natural gas supply	10	8
18.	Natural gas public supply	0	0
19.	Biofuels production of over 1000t per year	0	0
	Total	131	61*

* Total number of issued licences in 2011, there were 63 of them before the adoption of the Law, but this number was changed after 09/08/2011 in line with the titles of energy activities stipulated by the new Law which then entered into force.

7.1.2.3 Monitoring electricity and natural gas market

So as to provide for market functioning, it is necessary to adopt, i.e. harmonise with the new Law, all the codes/rules stipulated by the Law. There are 12 of them, 2 of them are adopted by the Agency, 10 of them are drafted and adopted by energy companies and approved by the Agency. The Agency adopts:

1) supplier switching rules;
2) rules on monitoring technical and commercial indicators and on regulating quality of delivery;

and approves:

1) electricity transmission system code;
2) rules for the allocation of cross-border transmission capacities;
3) natural gas transmission system code;
4) electricity distribution system code;
5) natural gas distribution system code;
6) oil transport system code for oil transport through oil pipelines;
7) oil derivatives transport system code for oil derivatives transport through product lines;
8) electricity market code;
9) organised electricity market code and
10) natural gas storage system code.

Of all the above listed rules/codes the following ones were adopted: electricity transmission system code, electricity distribution system code and oil transport system code which will be amended so as to be harmonised with the Law. The rules for the allocation of cross-border transmission capacities were adopted by PE EMS, approved by the Agency in the end of 2011 and harmonised with the Law. Oil derivatives transport system code was not adopted and will not be adopted until public product lines are constructed. Other rules are being drafted or will be drafted so as they could be adopted within the deadlines defined by the Law.

In 2011, the Agency approved the following documents:

- amendments to the Transmission System Code ("Official Gazette of RS", No. 3/2012), aimed at improving the code based on practical experience. Harmonisation with the Law will be completed in 2012;
- Rules for the Allocation of Cross-Border Transmission Capacities for 2012 ("Rules for the Allocation of Cross-Border Transmission Capacities for 2012 on the Borders of PE EMS Control Area for the Period 01/01/2012 – 31/12/2012");
- Rules for the Allocation of Cross-Border Transmission Capacities on Serbian-Hungarian Border for 2012 ("Agreement between Transmission System Operator of the Republic of Hungary – MAVIR ZRt. and Transmission System Operator of the Republic of Serbia – PE EMS on the Procedure and Manner of Allocation of Rights to Use Cross-Border Transmission Capacities and Access to Cross-Border Transmission Capacities for 2012").

In 2011, the Agency actively participated in monitoring implementation of the adopted rules/codes. The activities of the Agency primarily reflect in making analysis of initiatives for amendments and supplements of these rules through participation in the activities of the commissions in charge of monitoring these rules. The commission for monitoring transmission system was established by PE EMS, while the other commission was established by PE EPS and it stands as a joint commission for all the five distribution companies. There is one representative of the Agency in both commissions. The commission for monitoring the implementation of the rules for oil transport through oil pipelines has not been established yet.

7.1.3 Deciding upon appeals

Pursuant to the Law, deciding upon appeals (second instance administrative procedure) which is performed as entrusted activities includes deciding upon the following appeals:

- against operator's acts on dismissal, i.e. failure to adopt a decision on the application on system connection;
- against operator's acts on dismissal of access to the system;
- against acts of energy entities dealing in oil transport through oil pipelines or energy entity deling in oil derivatives transport through product lines on dismissal of access to the system.

Within the procedure of deciding upon appeals of customers, i.e. system users, a necessary level of customer protection is provided. In addition, there is direct contribution to adequate implementation of methodologies and other regulations.

In 2011, there were 159 appeals in total against the activities and behaviour of energy entities in different areas of their operations. 112 of them are under the jurisdiction of the Agency, while 47 of them are different petitions and complaints.

The Agency processed all the submitted petitions and complaints and submitted responses to the applicants while forwarding the issues to responsible state bodies for further procedure.

As far as the appeals for which the Agency is responsible within the second instance procedure are concerned, all 112 appeals submitted for reasons stipulated by the Law were processed in 2012. The appeals were submitted:

- agianst failure of a responsible energy entity within the first instance procedure upon application on connection of the facility of the customer or producer to electricity or natural gas distribution system (the so called "administrative silence") – 12 appeals;
- against decision of electricity or natural gas distribution system operator dismissing application on connection to the system – 50 appeals;
- against electricity distribution system operator's decision approving connection to the system, but customers complain against connection costs, technical conditions for connection, or against procedural decision of energy entities dealing in electricity distribution on suspension of procedure or dismissal of application – 50 appeals.

The greatest number of appeals was filed against decisions of electricity distribution companies – 11 appeals, while there were 1 of them filed against a decision adopted by a natural gas distribution company.

So as to reduce the number of appeals and harmonise the practice of electricity distribution system operators in procedures implying applications on connection of facilities of both legal and natural persons to the power grid, in the beginning of 2011, the Agency made an analysis of all appeals submitted to it and of the most common reasons for annulment of decisions on connection within the procedure related to the appeal. In 2011, so as to reduce the number of unlawful decisions adopted by electricity distribution companies, upon Agency's request, two expert meetings with these companies were held. During these meetings, the Agency identified the most common breaches of procedural and material-legal regulations which lead to adoption of unlawful decisions and stressed legally binding commitments of energy entities within connection procedure.

The appeals number growth trend was stopped in 2011. Therefore, activities concerning training experts who work for electricity and natural gas distribution operators and decide on applications on connection to the system will be continued in 2012.

7.1.4 International activities

An important segment of Agency activities implies the implementation of international agreements signed by Serbia. First of all, these refer to the participation in the work of the institutions of the Energy Community (EnC). Signing internationally legally binding "Treaty establishing the Energy Community" on October 25, 2005 in Athens, the Southeast Europe countries (and UNMIK for KiM) and the EU initiated the process of creation of the EnC aiming at the expansion of the common EU energy market to the Southeast Europe region.

The main tasks of the EnC are the following:

- establishment of a stable regulatory and market framework in the Southeast Europe and in the EU aiming at attracting investments in power and natural gas sectors, so as to enable stable energy supply crucial for economic development and social stability;
- creation of a common legal framework for electricity and natural gas trade in the Southeast Europe and in the EU;
- improvements to security of supply by creation of a stable investment climate and strengthening links with other regions of Europe, Africa and Asia;
- improvements to environment, increased energy efficiency and use of renewable energy sources in the region;
- development of a competitive energy market and using benefits from the economy of scale.

The Treaty establishing the EnC provides for the establishment of regional institutions necessary for the Pan-European energy market functioning: Ministerial Council, Permanent High Level Group, Energy Community Regulatory Board, EnC Secretariat, Electricity Forum and Gas Forum. Subsequently, Oil Forum and Social Forum were founded.

Figure 7-1: Energy Community institutions

The Agency participates in the work of the EnC Regulatory Board (advisory body to the Energy Community Ministerial Council with possible executive functions), as well as of the Electricity Forum, Gas Forum and Social Forum.

The Agency also contributes to the compliance with the obligations assumed by our country within the Stabilisation and Association Agreement and European Partnership (the chapters dealing with energy and regional cooperation).

The Agency is a full member of the Energy Regulators Regional Association (ERRA), a professional regulators association which aims at the upgrade of cooperation, exchange of experience and capacity building within member states.

7.1.4.1 Athens Process and Energy Community Regulatory Board (ECRB)

Pursuant to the commitments arising from the Treaty establishing the EnC, the Agency actively participates in the work of EnC institutions, at the same time taking into account customer interests protection, as well as the position and goals of both power and gas economy of the Republic of Serbia.

The Agency has considerably contributed to the development of organisation and procedures for the functioning of regional and Pan-European electricity and natural gas markets through an active participation in the work of EnC institutions and their expert teams. The President of the Agency Council was elected president of the EnC Regulatory Board (ECRB) in late 2008. He held the position until March 2010. An Agency representative has been the chairman of the EnC Regulatory Board Working Group for Electricity (ECRB WG-E) since the beginning of 2007.

In 2011, the Agency participated in the following activities of the EnC institutions:

Electricity

- preparation of technical, economic and legal basis for the establishment of the Coordinated Auction Office as well as for the implementation of coordinated auction mechanism for the allocation of transmission capacities on interconnection lines;
- analysis of existing balancing mechanisms in the Southeast Europe region;
- analysis of proposals for regional balancing mechanism which would optimise the procurement of balancing energy and make it more efficient, taking into consideration limited production capacities in the whole region;
- elaboration of the proposals for the organisation (design) of the regional electricity market in the Southeast Europe;

- identification of options for the simplification of the licencing regime for electricity traders in the region;
- identification of options for regulatory incentives for the construction of new transmission capacities and initiating cooperation between regulatory bodies in the region in terms of regional investment projects;
- preparation of mechanisms for electricity market monitoring in the Southeast Europe.

Natural gas

- analysis of regulatory issues important for the construction of EnC gas ring;
- analysis of investors's risks, identification of obstacles to investments and necessity to harmonise regulations and mechanisms for cross-border trade, correction measures proposals and drafting recommedation for financing infrastructure projects;
- the assessment of implementation of the EU regulations (Regulation 1775/2004/EC on on conditions for access to the natural gas transmission networks) in the Contracting Parties;
- preparation of regional studies – 'Study on the Improvement of Interconnection, Interoperability, Transparency and Harmonisation of Operational Rules for Natural Gas Transmission in the EnC' and 'A Regulatory Approach to the Development of the EnC Gas Ring'.

Protection of vulnerable customers

- participation in drafting EnC document on the position of and manner of protection of "energy-wise endangered customer", identifying legal bases, forms and procedures for protection of "energy-wise endangered customer", practice in the countries of Southeast Europe; an Agency representative is the chairman of the sub-group ECRB WG-C which deals with vulnerable customers and he actively participated in the preparation of this document;
- drafting the National Action Plan for Protection of Vulnerable Customers – participation in the work of the inter-sectoral working group which works on the plan for a set of measures mitigating negative effect of energy prices growth on vulnerable population;
- drafting a Report on Quality of Services in the Field of Electricity Delivery and Supply in EnC countries, which includes a survey of the legal framework and practice in terms of monitoring and regulation of the quality of services provided in continuity of delivery, voltage quality and commercial quality;
- drafting a report on mechanisms for the protection of vulnerable energy customers in EnC;
- drafting a comparative review of legal procedures and EnC regulatory practice in terms of deciding upon appeals and harmonisation with the EU regulations.

7.1.4.2 Energy Regulators Regional Association (ERRA)

The Agency is a full member of ERRA (Energy Regulators Regional Association), an expert association of regulators aiming at the improvement of cooperation, exchange of experience and capacity building in member states. ERRA links the regulators from Southeast and East Europe, former USSR, NARUC – USA regulators association, as well as the regulators of certain countries in Asia and Africa. In 2011, the Agency participated in the following ERRA activities:

- Licensing and Competition Committee

  The Agency has been actively participating in drafting the Committee documents (identification of the best regulatory practice in several fields of theory and practice of licencing and energy markets). An Agency representative participated in the identification of such practice in several fields:
  - regulatory aspects of advanced technologies in metering ("smart" metering);
  - opportunities for harmonisation of energy wholesale trading licencing regime;
  - guarantees of origin for renewable energy sources;
  - opportunities for efficient competition in the natural gas field;
  - incentive schemes for renewable energy sources.

  An Agency representative was elected vice president of the committee.
- Tariff/Pricing Committee

  The Agency has been actively participating in drafting the Committee documents (identification of the best regulatory practice in several fields of theory and practice of pricing regulation) as well as in the update of the data base on electricity and natural gas prices including ERRA members from Europe and Asia. An Agency representative in this ERRA Committee participated in the identification of the best practice in several fields:
  - influence of regulatory methods to investments in distribution systems;
  - setting tariffs for electricity produced from renewable energy sources;
  - price regulation with greenfield investments in distribution systems;
  - indicators of successful operations after the privatisation of distribution companies.

The Agency representative in this ERRA Committee was given a special reward for his contribution in the work of this association

- Legal Regulation Working Group

  This working group includes legal experts from ERRA members. The aim of their work is experience exchange and the improvement of licencing process, deciding upon appeals and other legal issues dealt with by regulatory bodies. An Agency representative participated in the exchange of experience and drafting documents on the following issues:

  - contracts on balancing responsibility (discussion paper was drafted by the Agency representative);
  - natural gas transit regimes;
  - methods and procedure for implementation of investments and technical support from the European Bank for Reconstruction and Development in the fields of renewable energy sources and energy efficiency;
  - regulation of renewable energy sources;
  - privatisation of distribution companies.

  The Agency representative has been the Chairman of this working group since 2008.

- Partnership with Pennsylvania Public Utility Commission

  ERRA, i.e. USAID provided for financing of the partnership program between the Agency and Pennsylvania Public Utility Commission (PA PUC) aiming at the exchange of experience, staff training and improvement of regulatory capacities of the Agency and the establishment of a long-term cooperation between the two regulatory agencies; the cooperation was initiated in 2007 and was successfully completed in 2011.

7.1.4.3 European integration

The Agency participated in several meetings on “Enhanced Permanent Dialogue with the European Union” on transport and energy, during which the Agency presented the level of implementation of commitments within its competence, related to regulatory issues in the energy sector and regional integration.

Within the subgroup for energy of the Expert group of the coordination body for the preparation and negotiations on Serbia’s accession to the European Union, the Agency contributed to the preparation of the National Program for Integration of Serbia into the European Union and participates in the Program implementation.

7.1.5 Other activities

The Agency actively participated in drafting the Law, in those segments related to regulation, market, licences and other issues in its jurisdiction. In addition, the Agency is involved in drafting bylaws relevant for the activities within its scope of work.

The Agency submitted the proposals for improvements of the drafts of the Law on Customer Protection and Law on Construction to responsible ministries. The Agency also participated in the activities related to the accession of Serbia to the World Trade Organisation.

The Agency has been actively participating in the work of inter-sectorial work group (Ministry of Labour and Social Policy, Ministry of Mining and Energy, Ministry of Finance, PE Elektroprivreda Srbije, PE Srbijagas) with a task of preparation of a set of measures which would mitigate the negative effect of electricity and natural gas price increase to vulnerable groups of population. In addition, the Agency actively participates in drafting amendments of the Law on Customer Protection.

The representatives of the Agency participated in the work of the Working Group for Analysis and Monitoring of the Situation on Security of Supply with Electricity and Energy Carriers.

The Agency is dedicated to further professional training of the Agency staff to a great extent. To that end, in 2011, there was a set of trainings in the areas which are important for further improvement of the work of the Agency in the field of price regulation and energy market establishment.

The implementation and new technical assistance project in the Agency which is financed by the EU (IPA Program) aimed at further capacity building of the Agency in line with the expected expansion of competence (new Energy Law, implementation of the Treaty establishing the EnC) and improvement of regulatory mechanisms related to price regulation, market monitoring and security of supply has been successfully completed.

7.2 Agency's Financial Report

Financial operations of the Agency in 2011 were in line with the financial plan. The financial plan defines total revenues and expenditures of the Agency and contingency reserves as well as the elements for comprehensive insight into the income and employment policy. The Agency's financial plan for 2011 was submitted to the National Assembly in due time and approved by the National Assembly. Both the approval and the plan were published ("Official Gazette of RS", No. 99/11 as of 27/12/2011).

This report illustrates the utilisation of funds per each purpose from the revenue base on licence fee, part of tariff for access to and use of the system, grants and reimbursements. The funds are used in line with the Law and financial plan.

Table 7-2: Total Agency's revenue in 2011

RSD

No.	Revenue	Plan for 2011	Realised in 2011
1	Revenue from licences in 2011	20,131,944	26,064,919
2	Revenue from 2010 - Deferred revenue from licences	35,038,000	35,075,207
3	Revenue from regulatory fee	101,800,800	83,294,584
4	Revenue from grants and reimbursements	2,393,353	1,902,510
5	Financial revenues and other revenues	3,147,468	2,386,206
	TOTAL REVENUE	**162,511,565**	**148,723,426**

Notes related to Table 7-2:

In 2011, the licences were issued in line with the 2004 Law and bylaws on licences with the 10 year validity period. However, the Criteria and Standards for Setting Energy Licence Fee the fee for the 12 month period upon its issuance define the amount for each year. Therefore, in line with international accounting standards, based on the data of their issuance, it is necessary to defer the relevant revenue to the one originating from the current year and the one from the previous year. The licence fee (line 1) amounting to 26.064,919 RSD includes proportional part of the licence fee for 2011. The same method was used for calculating the revenue for 2010 (line 2) amounting to 35,075,207 RSD, as the part transferred to 2011.

The revenue from the regulatory fee, i.e. from the part of tariff for access to and use of electricity and natural gas transmission system (line 3) amounting to 83,294,584 RSD is calculated quarterly and it depends on the amount of maximum allowed revenue of energy entities and the date when, pursuant to the Government decision, the decision on prices established by energy entities is applicable. Greater discrepancies between these revenues and planned amount (index 82) is affected, apart from other things, by the decision of the Council on the reduction of the coefficient which serves as a basis for calculation of this revenue, so as total revenues could be harmonised with expenditures in 2011.

Revenues from grants and reimbursements (line 4) amount to expenditures. In this case, they amount to the value of estimated costs of depreciation of equipment financed from grant funds for 2011, which debits purchase value of equipment obtained from the grant in 2005 and 2006, both to the level of reimbursed funds , i.e. from reimbursements of a part of expenses for business trips abroad from the EnC Secretariat (pursuant to the Treaty establishing the EnC), i.e. from ERRA (which covers accommodation and travel costs for the participants of certain meetings of this association). Since the grant funds are mostly depreciated, the share of depreciation of these funds in revenues is reduced to a great extent. Therefore, the revenues in these terms are lower than the previous year and lower than those given in the Plan.

Financial revenues and other revenues include the revenue from interest rate, positive exchange differentials as other non-business and extraordinary revenues. In 2011, these revenues amounted to 2,386,206 RSD. Pursuant to the Law, extra revenue in accounting 2011 is transferred to 2012. Table 7-3 indicates total expenditure which is given as contingency expenditure and equipment procurement – unappropriated funds so as to register it and compare it with the plan.

Table 7-3: Total Agency expenditure in 2011

RSD

No.	Expenditure	Plan for 2011	Realised in 2011
1	**Material**	**2,667,149**	**1,961,640**
1.1	- material (operating cost, office, miscellaneous)	1,446,035	884,167
1.2	- fuel and energy	1,221,114	1,077,472
2	**Salaries and allowances**	**110,555,049**	**101,552,299**
2.1	- salaries and allowances (gross)	88,801,143	79,561,848
2.2	- levies paid by employer	14,633,426	13,517,923
2.3	- fees in line with other contracts	1,466,237	1,131,465
2.4	- other personal expenditure and fees	5,654,243	7,341,063
3	**Production services**	**25,375,308**	**24,638,465**
3.1	- transport	1,595,870	1,817,884
3.2	- maintenance	1,474,768	1,631,830
3.3	- lease	20,069,949	18,910,669
3.4	- marketing and propaganda	349,117	444,358
3.5	- other services	1,885,604	1,833,725
4	**Depreciation and reserves**	**3,234,989**	**4,211,356**
5	**Non-material expenditure**	**6,001,787**	**3,713,858**
5.1	- non-production services	3,752,099	2,000,252
5.2	- costs of representation	304,041	309,366
5.3	- insurance premium	193,308	381,607
5.4	- payment operations	205,428	174,707
5.5	- membership	387,152	361,721
5.6	- other non-material expenditure	1,159,759	486,205
6	**Contingency reserves and equipment procurement – UNAPPROPRIATED FUNDS 2011**	**10,416,083**	**1,692,982**
7	**Financial expenditure and other expenditure**	**4,261,200**	**10,952,827**
	TOTAL EXPENDITURE	**162,511,565**	**148,723,426**

Notes related to Table 7-3:

In 2011 reporting year, total expenditure was covered by revenue and they coincide with total planned expenditure for 2011.

All main items of expenditure either coincide with the planned level or did not reach it at all. There were some bigger discrepancies between the amounts given in the line representing personal expenditure and fees, in terms of business trips. This discrepancy arose primarily due to unplanned involvement of Agency employees in negotiations for the EU accession and in discussions on the status of Kosovo and Metohija. If one takes into consideration that a part of these costs was covered by reimbursements given in the revenue section, amounting to 1,424,011 RSD, one may conclude that the expenditure almost reaches the planned level. Although production services expenditure is lower than the planned one, there was a growth in transport costs, maintenance, marketing and propaganda. Maintenance costs were increased mainly due to expanded demand in terms of computer maintenance since these are close to their depreciation life time. Transport costs (Internet, post office, mobile phones) also exceeded the planned level. However, since the employees themselves refunded for the overrun of limit for mobile phone bill, and these funds amounted to 277,075 RSD, these costs are lower than the planned ones. Marketing and propaganda costs exceeded the planned level since a multi-year report on Agency's activities and Serbia's energy sector for the period 2005-2010 was published in 2011.

Non-material costs present the greatest discrepancy, i.e. non-production services (53% of planned values were realised). It is due to the engagement of a consultant financed by the EU (IPA 2007) and therefore, these funds were not used from the Agency. Although 62% of planned non-material costs were realised, one can notice considerable growth in some of

the items, mainly insurance premia (97%) due to total car insurance, travel insurance and collective insurance for employees.

In addition, depreciation costs also differ from the planned ones (30% higher than the planned ones). The changes in these expenditures occurred due to writedown of considerable number of fixed assets in the previous period (which served as a plan basis) and procurement of underlying assists during 2011 so as to replace those which were written down.

Financial expenditure and other types of expenditure are greatly increased in comparison to the plan. The main reason for this is the correction of unsettled liabilities in terms of licences and regulatory fee (unsettled liabilities for more than 60 days). This is mostly due to financial crisis effects and considerable fluctuation of energy entities (around 200 energy entities stopped operating or their licence was temporarily or permanently withdrawn due to unpayment).

Total liabilities of the Agency on all bases on December 31, 2011 amount to 40,715,740 RSD. 28,036,240 RSD are liabilities for issued licences, 11, 861,841 RSD for regulatory fee and 817,659 for sick leaves. Based on the Rules on Accounting and Accounting Policies, taking into consideration the analysis based on age and historical experience, liabilities amount was corrected for 10,583,200 RSD on December 31, 2011. This correction includes correction of 17% for licences, i.e. 7% of total revenue. These data indicate that there is considerable risk in collecting liabilities and one can expect that this will be the case in the future as well. Therefore, so as to provide for unhindered and reliable operations of the Agency, it is necessary to make an adequate reserve which would serve not only for replacement of fixed assets but to provide for additional safeguard basis for Agency's activities when there are no other financing sources to be provided within legal framework in the future.

The Agency procured equipment from its own funds in the period 2007 – 2010 as indicated in Table 7-4. In addition, procurements were made in 2011 from contingency funds and equipment procurement section, in line with public procurement plan. This was done mainly so as to write down fixed assets, first of all computer equipment and cars.

Table 7-4: Purchase value of fixed assets of the Agency

RSD

	2005 - 2006	2007 - 2009	2010	2011	Total 2005 - 2011
Cars	4,114,190	0	1,893,554	3,019,655	9,027,399
Computer equipment, software, network	6,340,087	3,706,112	2,720,731	5,228,694	17,995,624
Office furniture and equipment	1,201,784	1,672,714	64,883	414,978	3,354,359
Telephone devices, telephone switchboard	339,556	318,339	224,090	337,582	1,219,567
Video surveillance, network		1,060,207	0	0	1,060,207
TOTAL	**11,995,617**	**6,757,372**	**4,903,258**	**9,000,909**	**32,657,156**

The value of assets which were not written down until December 31, 2011 amount to 12,630,222 RSD, i.e. 39% of gross purchase value of assets, which indicates a high level of write-down and need to replace the fixed assets.

8. Tables

9. Figures

10. Abbreviations

ACER	Европска агенција за сарадњу енергетских регулатора (Agency for the Cooperation of Energy Regulators)
Benchmarking	Comparative analysis of similar (indicators, companies, activities, etc.)
CEER	Council of European Energy Regulators
DAMAS	Information system in PE EMS
ECRB	EnC Regulatory Board
ECRB WG	EnC Regulatory Board - Working Groups
HHI	Herfindahl-Hirschman Index – indicator of market concentration level
ITC Agreement	Multi-year Pan-European agreement between transmission system operators on compensation of costs for the utilisation of neighbouring transmission networks
mtoe	million tons of equivalent oil
NTC	Net Transfer Capacities
Smart Grid	“Smart” power grid with digital meters, remote collection and distribution of data and information on the behaviour of all system users and with management system, so as to improve system reliability and efficiency
BiH	Bosnia and Herzegovina
EnC	Energy Community
PE EMS	Public Enterprise Electromreža Srbije
PE EPS	Public Enterprise Elektroprivreda Srbije
KiM	Kosovo and Metohija
NIS JSC	Petroleum Industry of Serbia
RST	Russian – Serbian Trading Company

11000 Belgrade
5/V, Terazije St.
Tel: + 381 11 3037184;
Fax: + 381 11 3225780
E mail: aers@aers.rs
www.aers.rs