ENERGY AGENCY
OF THE REPUBLIC OF SERBIA

2012 ENERGY AGENCY REPORT

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OF THE REPUBLIC OF SERBIA

2012 ENERGY AGENCY REPORT

Serbian Energy Sector Report

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Annual and Financial Report

Belgrade, April 2013

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FOREWORD

Pursuant to the provisions of the Energy Law, the Council President and members are accountable for their work and the work of the Energy Agency of the Republic of Serbia to the National Assembly of the Republic of Serbia. At least once a year, a report on the Agency's activities is submitted to the National Assembly as it is hereby done by the submission of the 2012 Report. Apart from the report on the Agency's activities and its financial operation, this document also includes the report on the situation in the energy sector of the Republic of Serbia related to the jurisdiction of the Agency.

The report on the energy sector of Serbia includes the review of the state-of-play and activities in the field of natural gas and electricity markets as well as partly of oil and oil derivatives, security of electricity and natural gas supply, steps taken in the field of activities of general interest and electricity and natural gas customer protection. In terms of its structure and content, the Report is also in line with the recommendations of the Council of European Energy Regulators - CEER.

To the extent necessary to follow the content, the Report indicated the provisions of the Law and the changes in the energy sector arising from them. The provisions of the so called Second legislative package of the European Union on the common energy market, along with the expanded jurisdiction of the Agency were fully transposed into the legal system of Serbia by this Law. The idea was to make the energy sector more rational and more cost efficient, to regulate monopoly activities in a more efficient manner while enabling the functioning of the market on the national level, but first of all on the regional and PanEuropean level, providing for sustainable long-term development. The Energy Community Ministerial Council adopted a decision on the enforcement of the so called Third Package in autumn 2011. For this reason, the amendments and supplements to the Law will be made.

Since its establishment, the Agency tended to build, strengthen and keep a high level of its professional capacities. This is ever more important today, bearing in mind the necessity to face the challenges and jurisdiction prescribed in the new Law, as well as the international commitments as efficiently as possible.

In 2012, the Agency complied with all the obligations which are prescribed by the Law and important for the envisaged dynamics of energy market opening in Serbia. The Agency played an important role in the work of the Energy Community institutions and provided support to other institutions within the activities on the national and international level.

Pursuant to the Law, all the decisions on the issues within the jurisdiction of the Agency are adopted by the Agency Council. In 2012, the Council held 32 sessions during which the decisions, approvals, certificates and other documents in the field of pricing regulation, energy market establishment and monitoring, licence issuance and withdrawal, internal organisation and working methods of the Agency and other issues within the competence of the Council were adopted

With the exception of February, the security of electricity, natural gas and oil derivatives supply in 2012 was on a satisfactory level. In February, the Serbian Government introduced protection measures due to disturbed security of electricity supply caused by extremely low temperatures lasting for several days, as well as due to long drought period and reduced generation in hydro power plants. The operation of the thermal power plants was reliable, thus providing high annual capacity use. For this reason, electricity import was on the same level as last year, despite lower production in hydro power plants. Electricity consumption reduced by 2.2% in Serbia, while the transit via Serbia was decreased by 3%. Security in natural gas supply was, to a great extent, made possible by an increased capacity of the underground storage. Natural gas consumption was decreased by 13.3%, mostly due to industrial consumption drop.

The Agency Council considered the following three groups of issues extremely important for the future of the Serbian energy sector: the opening of the electricity and natural gas markets, establishment of a reliable pricing policy in the long run and the provision of a long-term security of energy supply.

In 2012, important steps were made towards ***the opening of electricity and natural gas markets and more efficient regulation of monopoly activities***. However, irrationalities in the energy sector proved not to be removed in a manner efficient enough. In addition, the delays in the compliance with commitments jeopardise the deadlines set by the Law.

By the end of 2012 and on the very beginning of 2013, all important regulatory conditions for electricity customers connected to the transmission grid to face the market were met. By the Agency's approval to the Electricity Market Rules in December 2012, the conditions for the implementation of the balancing mechanism were met.

The preparation of energy companies and electricity customers who are obliged to enter the open market as of January 2014 (all customers except households and small customers) is very important.

The preparations for legal unbundling of distribution system operator and electricity supply from other activities were made and thereby, the conditions for the compliance with this obligation in 2013 were created.

In 2012, a considerable progress was made in the manner of exercising rights to electricity transmission cross-border capacities. In addition to common auctions of available cross-border capacities on the border with Hungary, upon the Agency's approval to the Rules on Allocation of Cross-Border Transmission Capacities on Serbian-Romanian Border, common auctions became feasible on this border as well, i.e. in 2013.

The activities within the Energy Community on the development of regional electricity market were continued.

The level of electricity market concentration in Serbia, in terms of realized trade, was still high or moderate high in 2012.

Electricity losses in the distribution network are still slightly dropping, although they are still very high in comparison to the technically justified level. Electricity theft is not prevented efficiently enough. Investments in distribution network and more efficient replacement of meters should be intensified.

Over the past several years, there has been a slight increase in electricity consumption in households during winter period. The Agency will follow this situation and, if it proves to be necessary, the Agency will modify the relations and tariff limits so as to destimulate irrational electricity consumption for heating purposes.

Even prior to being obliged pursuant to the Law, in several phases since 2019, the Agency has established the rules for the supervision of technical and commercial indicators of quality of electricity delivery and supply. In 2012, a considerable progress was made in terms of the feedback from distribution companies to the Agency's request for regular submission of data on commercial quality. The indicators of the continuity in delivery are on the regional level, but they are many times worse compared to the European average. A four years' experience is a very good basis for the preparation of the Rules on Delivery and Supply Quality which will be adopted by the Agency in 2013.

In addition, basic conditions for customers connected to the natural gas transmission system to enter the natural gas market were created. This sector has had certain practice in open market operations since 2009.

The Gas Transmission System Code, which is adopted by the PE Srbijagas, is being finalised and the Agency's approval of it are expected by mid-2013.

Legal unbundling of the transmission system operator in vertically integrated companies in the gas sector (PE Srbijagas and JSC Yugorosgaz), from natural gas supply and other activities is under preparation in order to meet the unbundling goal in 2013.

Gas sector is characterized by a low level of household gasification (around 10%) and distribution system fragmentation. The procurement and installation of adequate measuring instruments is extremely important for further gas market development.

The first drafts of ten-year plans for the development of electricity transmission and distribution and natural gas transmission were made and mutually harmonised to the extent necessary. Hereby, the conditions were created for the submission of these documents in 2013 to the Agency for approval purposes.

Electricity and natural gas pricing policy are one of the most complex current issues in the energy sector with multiple consequences. Rationalization of costs in energy companies operations is one of its important components.

The current electricity prices level is below the economically justified level, which limits the development of the power sector to a great extent since it does not enable local fund reserves for investments, it destimulates both other investors and energy consumption rationalization.

Approved purchase natural gas price was lower than the agreed purchase price from 2010 till the end of 2012. For this reason, PE Srbijagas faced a deficit in the field of tariff customers' supply. 2013 will be a follow up.

The best solutions which ***provide for the long term security of supply*** need to be searched promptly. Uncertainty in economic growth tempo makes the consumption forecast more difficult and increases the risk for potential investors. For the period until 2025, less than 1% of electricity consumption growth annually is expected in the Republic of Serbia. Future demand will be covered by the extension of the lifetime of existing power plants and by the construction of new power plants, including the power plants using renewable energy sources.

The most critical issue is the implementation of the EU Large Combustion Plants Directive, i.e. the ruling national regulation on the emission of sulphur and nytrogene oxides, which prescribes that all the units in thermal power plants which do not comply with their provisions, should be shut down after 2017. In such a way, PE EPS could fall short by over 1,100 MW, which provide more than 15% of power generation at the moment. This issue has both regional and EU dimensions and well argumented suggestions will be very important for the harmonisation and adoption of sustainable solutions on the regional level, i.e. within the EnC and on the national level.

The most important conditions for the long-term security of natural gas supply are the construction of the South Stream and connection with the Bulgarian gas pipeline Niš-Sofija.

New Energy Sector Strategy should make the conditions for long-term energy stability and the principles of harmonisation of the Serbian energy sector with the global and EU requirements more certain in a way that will be the most favourable for customers and which will contribute to the economic development of the state. Energy companies have to adopt development plans based on this as soon as possible.

Hereby, it will be possible to establish a more long-term pricing policy, remove the current imbalances and provide the environment which will be stable enough and stimulating for investments. The most important precondition is the foundation of a more efficient mechanism for the protection of socially vulnerable energy customers, which was prepared in 2012 and adopted in the beginning of 2013.

The Council of the Energy Agency of the Republic of Serbia

April 2013

SERBIAN ENERGY SECTOR REPORT

1. SERBIAN ENERGY SECTOR REPORT

1.1 Energy demand in Serbia

Annual demand in primary energy in Serbia without the Autonomous Province of Kosovo and Metohija (APKM) amount to around 16 million tons of oil equivalent (mtoe). It is characteristic of Serbia to have a high share of coal, primarily lignite with low calorific value in the total primary energy (over 50%) which is dominantly used for electricity production. A high share of local lignite enables a relatively high energy independence of the country, in comparison to other countries. On the other hand, it decreases the efficiency of energy transformations and increases their impact to the environment and, in the long run, increases the risk of growth of costs in terms of carbon dioxide emission, i.e. the greenhouse gases in Serbia.

This chapter includes the latest published data on total consumption of primary and final energy as well as other important data linked with the energy sector, as well as the comparisons with the European Union.

The energy net import dependence of Serbia recorded 30.3% in 2011. In 2012, the costs of net energy imports amounted to € 2,280 million, which presents even 38.4% of the total import and export bill of the Republic.

Table 1-1: Energy sector of Serbia (without APKM) – some indicators for 2010 and 2011

	Measurement unit	Year	
		2010	2011
Population (number)	thousands	7,279	7,241
GDP per capita, per spending power parity	Fixed US$ from 2005	9,597	9,830
Primary energy consumption	Million toe	15.53	16.19
Final energy consumption	Million toe	8.89	9.25
Import dependence	%	33.5	30.3
RES share in gross final consumption	%	21.0	17.8

Data: RZS, World Bank, MERZZS, AERS

Compared to the European Union, gross domestic product of Serbia per spending power parity (which reflects the development and standard level in a more realistic manner) in 2010 was on the level of 35%, consumption of total primary energy per capita – 63% and electricity consumption – 70%. Energy intensity, i.e. total primary energy consumption per domestic product unit was on the level of the countries in the region, but it was 1.8 times higher than the European average. A greater energy intensity is partly a consequence of inevitable technical losses in the process of transformation of lignite into electricity (two thirds of electricity production is based on lignite). However, it is primarily due to irrationality, i.e. low efficiency in consumption in households, industry, due to low rate of capacity use and old technology, as well as in other sectors. Gas consumption per capita amounts to only 29% of the EU and therefore, this sector has a high growth potential.

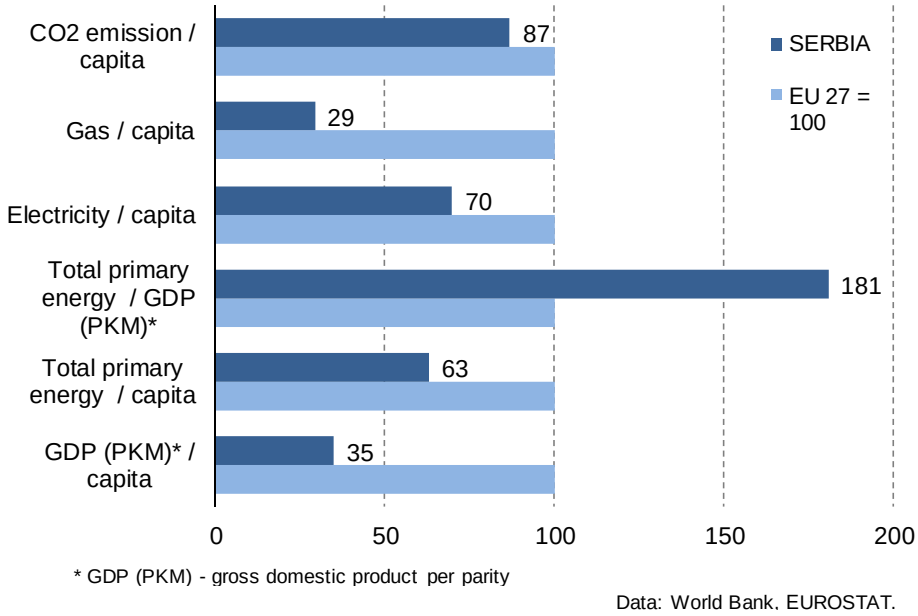

Figure 1-1: Comparative indicators of Serbia and the European Union in 2010

Import dependence in the fields of oil and natural gas was reduced in the past two years, but it is still high.

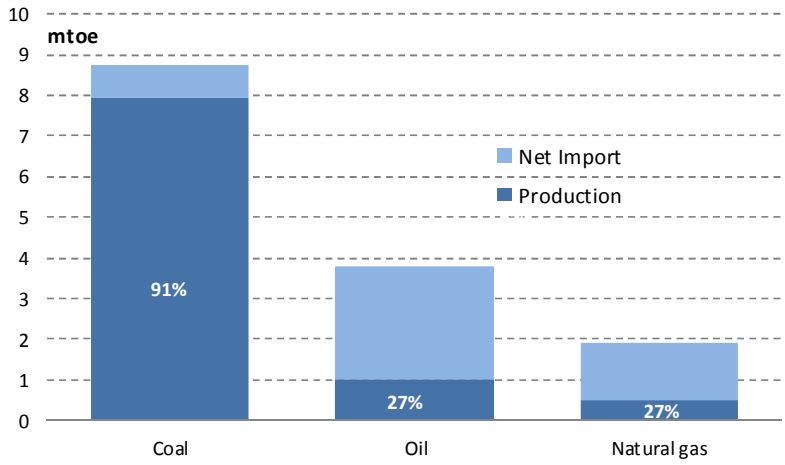

Figure 1-2: Consumption and the share of local primary energy production in 2011

Total final energy consumption in Serbia, without non-energy-related consumption in 2011 amounted to 9.3 billion toe, while the 2012 estimated level recorded 9.5 million toe. Households, industry and transport have the biggest share in final energy consumption.

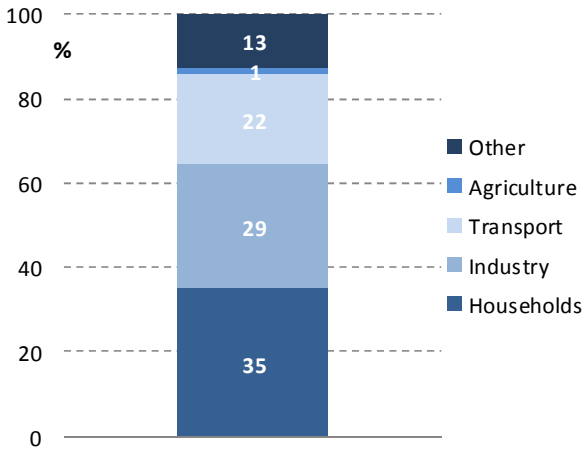

Figure 1-3: Final energy consumption structure (without non-energy-related consumption) in 2011

2. ELECTRICITY AND NATURAL GAS MARKETS IN 2012

In 2012, the competent institutions and energy companies either completed or were preparing the regulations which enable the enforcement of the Energy Law ("Official Gazette of RS", No. 57/11, 80/11 – corr., 93/12 and 124/12) and, among other things, they worked on the accelerated energy market opening. All electricity and natural gas customers, except households had the right to purchase on the open market in 2012. The households will be able to do so as of January 2015. Although there is a great number of suppliers in the open market, i.e. even 60 of them for electricity and 21 of them for natural gas, there were no important activities in final customers supply in 2012.

Prepared bylaws enabled market opening in early 2013 for all customers who lose the rights to public supply, pursuant to the Law, i.e. for those customers whose facilities are connected either to the electricity or natural gas transmission systems.

2.1 Expected tempo of electricity and natural gas market opening

As early as in 2008, 43% of electricity market and almost 90% of natural gas market was opened potentially. However, in 2012, all electricity and natural gas customers were still entitled to the supply at regulated prices.

Seven big customers purchased gas at contracted prices from two traders, mostly from PE Srbijagas as an open market trader. This was also possible even when the regulation was incomplete since there was a small number of customers and since PE Srbijagas temporarily regulated the allocation of authority within the public enterprise among energy activities and the relations with the other trader in the open market and, thereby, overcame the fact that there is no transmission system code and market rules within it. At the prices established in the free market, 16% of total natural gas consumption quantities were purchased in 2012.

The tempo for further market opening is defined by the Law. It is done by limiting the right of customers to public supply. 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;
- as of January 1, 2014, only households and small electricity customers[1] and;
- 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 1, 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 to the customer.

Figure 2-1 indicates the realized and planned openness of the electricity and natural gas markets in period 2010-2016. As of 2015, both markets will be 100% open, but the households and small customers will be also entitled to use regulated public supply.

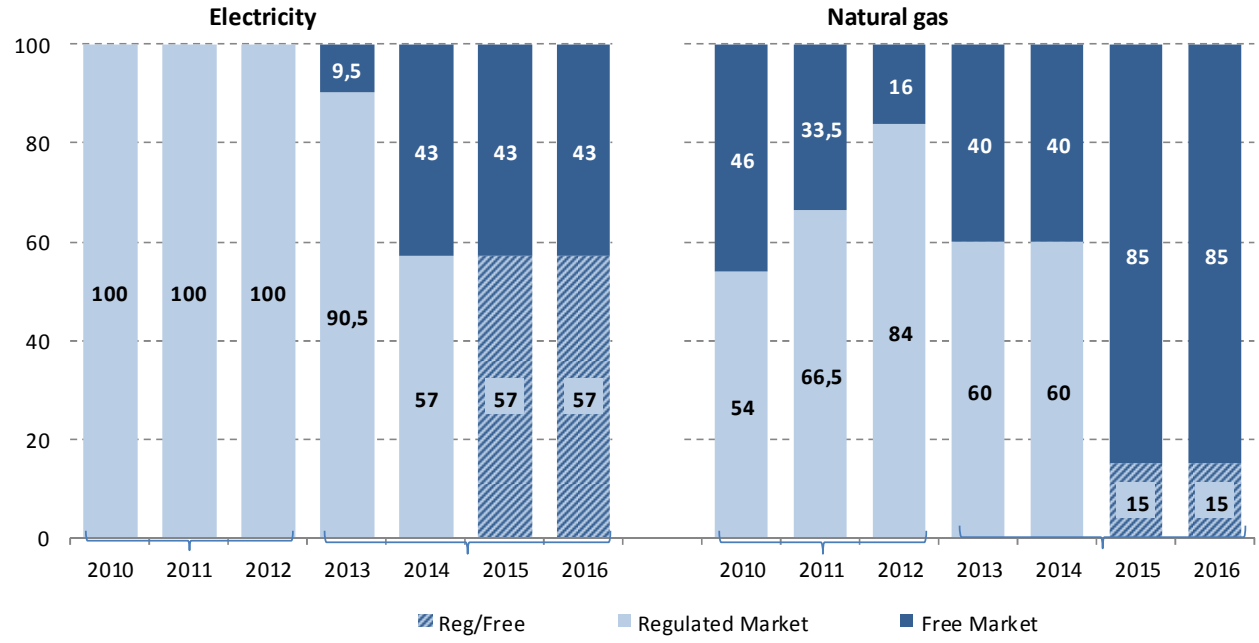

Figure 2-1: Electricity and natural gas market opening

2.2 Conditions for market functioning

A great number of documents necessary for market functioning have already been adopted. However, in 2012, previously adopted bylaws were harmonised with the new Law. Therefore, the following bylaws are in force:

- Decree on conditions for electricity and natural gas supply – it will be harmonised with the new Law in 2013;
- Rules on conditions for issuance, modification and withdrawal of the energy licence – they will be harmonised with the new Law in 2013;
- Rules on transmission system operations (applied as of 2008) and on distribution system operations (applied as of 2010) – there will be additional harmonisation with the Law;

[1] 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.

- Rules on allocation of cross-border transmission capacity – adopted on annual basis, applied as of 2012 (so far interim rules were adopted every year);
- Electricity Market Rules;
- Rules on Supplier Switch;
- methodologies for setting electricity, i.e. natural gas transmission and distribution use-of-system charges;
- methodologies for setting public supply electricity and natural gas prices;
- methodologies for setting electricity, i.e. natural gas transmission and distribution connection charges;

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 rules and methodologies which will enable compliance with the conditions for smooth market functioning are being prepared:

- natural gas transmission system code, including necessary natural gas market rules and
- natural gas distribution system code.

The former Law did not prescribe the deadlines for the adoption of certain acts and the energy entities did not adopt them.

In addition, the following document will be adopted:

- rules on monitoring technical and commercial indicators and on electricity and natural gas supply and delivery quality regulation.

The PE Srbijagas submitted the draft natural gas transmission system code to the Agency. Upon harmonisation process, the code will be published so as to go through the public hearing among experts and it is expected to be adopted in the first half of 2013, upon the Agency's approval. Afterwards, the natural gas distribution system code will be prepared. The first draft is expected to be prepared by the distribution system operator – PE Srbijagas, and the other operators are expected to follow.

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

The market operator will adopt the Rules on organised electricity market operations, upon the Agency's approval once the Government of RS regulates the market operator organisation and functioning, conditions and the manner of operation of organised market players and other conditions in line with the Law in more detail.

2.3 Rules on supplier switch

The Agency adopted the Rules on supplier switch in September 2012, and the same rules are applied to electricity and natural gas. These rules are very important for market development and they represent an innovation in our practice. They relate to supply based on a contract on full supply and they proclaim that the customer need not bear any costs arising from the supplier switch.

The rules include the cases of supplier switch upon customer's request, as well as the switch to the last resort or to public supply when the customer is entitled to it by the Law, as well as the procedure during supplier switch in case a purchase contract is terminated due to unpayment.

Figure 2-2 indicates the scheme for supplier switch upon customer's request.

A supplier may be switched upon a customer's request if the customer is entitled to the free choice of supplier pursuant to the Law and if the customer has settled all the liabilities towards the current supplier. When the customer selects a new supplier and submits a request for supplier switch, along with the certificate on settled financial liabilities towards the current supplier, all further steps are made by the new supplier an the system operator to which the customer is connected to. Defined procedure phases are time limited and the whole procedure cannot last longer than 21 day, including the day of request submission. This is especially important in cases when the new supplier is selected due to the fact that the contract with the current supplier is close to termination. In each of the phases of the procedure, the data and inromation validity is checked and, if necessary, corrections are made. Once all the deficiencies are removed the system operator reads the meter and the supplier is switched on that day, while the balance responsibility for exchange point of the customer is transferred to the new supplier.

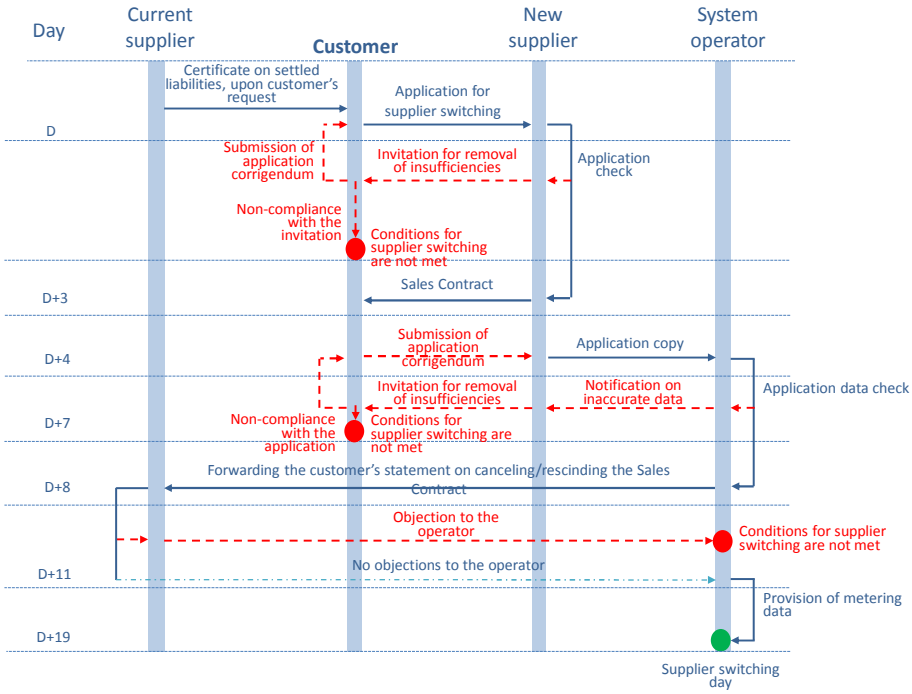

Figure 2-2: Supplier switch scheme upon customer's request

2.4 Regulated and free prices of energy and energy sources

Although there is a great number of companies licenced for electricity and natural gas wholesale, there was no increase in the interest for the open market. In wholesale markets, in terms of the customers' demand in Serbia, there are two dominating public enterprises: PE EPS and PE Srbijagas.

In 2012, a small number of customers exercised the right to purchase in the open market and therefore, only 16% of natural gas was purchased at contracted prices, with only two suppliers involved. Electricity market was 100% regulated.

2.5 Security of electricity and natural gas supply

The security of electricity and natural gas supply was on an acceptable level in 2012, except in February. This is when the Government of the Republic of Serbia introduced protection measures due to endangered security of electricity supply, due to several days' period of extremely low temperatures and long drought and low electricity production in hydro power plants. Disruptions in the electricity market were present in the whole region. The measures which were taken by the Government of RS so as to reduce the risk of load shedding to households in extremely unfavourable weather conditions and protect the integrity of the system were directed to the provision of capacities for additional electricity import and rational and reduced use of energy.

The security of natural gas supply was drastically increased by commissioning the underground storage Banatski Dvor with the withdrawal capacity of 5 million m^3/day.

Generally speaking, there were better conditions for safe supply in the field of electricity since it is produced from local resources and a very low amount of it is imported during the periods of the lowest temperatures. Gas demand is mostly covered by import and only via one connection through Hungary.

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.

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 of RS 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 of RS 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 basic structure of the electricity sector was established in 2005 upon the adoption of the Energy Law in 2004 ("Official Gazette of RS", No. 84/04) by unbundling and internal reorganisation of a common vertically integrated PE EPS. The structure of the electricity sector in the end of 2012 is indicated in Figure 3-1.

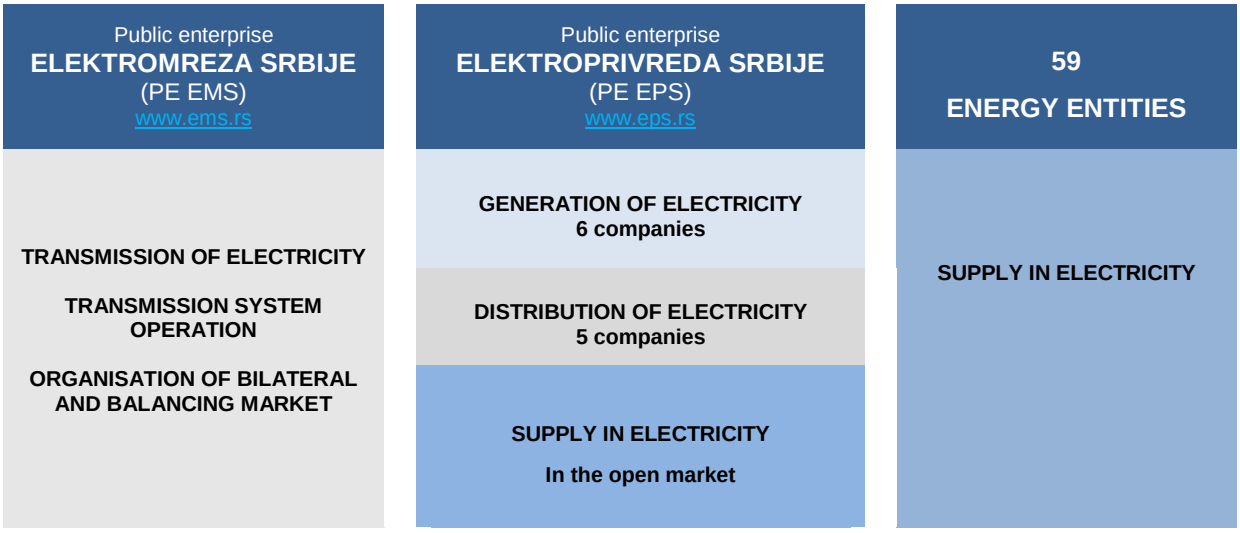

Figure 3-1: Ogranisational structure of the electricity sector

Public enterprises PE EMS and PE EPS were established on July 1, 2005 by the decision of the Government of the Republic of Serbia and both of them are 100% state-owned.

Since 1999, a part of the power system on the territory of the APKM has been under UNMIK management.

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

The Government of RS made preparations for the establishment of the daughter company (PD) "Supplier" ("Snabdevač") within PE EPS which will perform the duties of the public supply and supply in the open market. This supplier will temporarily perform the supply of the last resort until the Government of RS selects the supplier of the last resort within the tender procedure, as defined by the Law.

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, legal unbundling between public supply and distribution system operation is prepared. The deadline was October 1, 2012, but the unbundling is being performed in 2013.

Within the sector of electricity generation, a company "Renewable Energy Sources" ("Obnovljivi izvori energije") has been established, which will be dealing in modernization of existing small HPPs owned by PE EPS as well as in the construction of new small HPPs, wind power plants and plants for communal waste combustion, for which potential locations are being analysed.

The activities related to environment protection, human resources management and internal audit and control of the business system are performed by a single unit for the whole PE EPS, i.e. for all companies.

3.1.2 Unbundling electricity operations and operator's independence

Separation of 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, thereby realizing ownership unbundling between the transmission system operator from the vertically integrated PE EPS.

Within PE EPS, electricity generation is separated into five companies.

Electricity distribution is also performed in five daughter companies which (up to the establishment of the Public Supplier), in addition, perform electricity supply for tariff customers. The decisions on unbundling these activities in terms of their legal form were prepared in line with the Law. Therefore, it is expected that the unbundling will be completed in 2013 and that the distribution system operators will be legally unbundled from other activities including supply, in a manner defined by the Law.

The method used for unbundling accounts between the energy entities performing electricity distribution and distribution system operation and electricity supply does not comply with the requirements arising from the Article 19 of the Energy Law. Namely, the energy entities which submitted a request for making assessment and issuing an opinion on the distribution use-of-system charges to the Agency prepared balance sheets and income statements per each activity based on ex post unbundling accounting activities on a single account of the company, not based on ex ante accounting unbundling. Therefore, accounting unbundling was not performed in the manner prescribed by the law, i.e. as if these activities had been performed by separate companies. Once the Agency insisted on unbundling in line with the Law, this obligation was partially complied with in two out of five distribution companies.

The Law also defined a set of measures which will enable the independence of the distribution system operator, especially in terms of adoption of decisions on the funds necessary for operation. The parent company will be in a position only to approve annual financial plans and set the debt-level limits to the system operator but it will not be in a position to give guidance for everyday operations.

The system operator which operates within the vertically integrated company has to adopt a Program for the provision of non-discriminatory behaviour, the content of which is set by the Law and to appoint a person responsible for the supervision of the Program. The approval to the Program is given by the Agency. The distribution system operators, who have such an obligation, are currently preparing the modifications of the ogranisational structure and distribution unbundling into a separate legal entity, thereby complying with the provisions of the Law on unbundling energy activities. For this reason, the programs for the provision of non-discriminatory behaviour were not adopted in 2012.

In 2012, electricity trade in the open market was dealt with the parent company 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
Legal unbundling	YES	YES	NO
Separate headquarters	YES	YES	NO
Separate website	YES	YES	NO
Separate accounts	-*	-**	Incomplete
Audit of separate accounts	-*	NO	NO
Publishing separate financial reports	-*	YES	NO
Separate management bodies without managers from other energy operations	YES	YES	NO
Program for the provision of non-discriminatory behaviour	-*	NO	NO
Person appointed for Program implementation	-*	NO	NO
Annual report on Program implementation	-*	NO	NO

* Transmission system operator is unbundled in terms of ownership from generation and supply
** Distribution system operator is legally unbundled from generation and supply

3.1.3 Generation, transmission and distribution capacities

3.1.3.1 Generation

The 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 APKM, 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.

The total net installed capacity of the power plants within PE EPS without those on APKM, including small hydro power plants amounts to 7,204 MW (table 3-2), with the structure 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 the 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.

These capacities are licenced in five daughter companies: Hidroelektrane Đerdap 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 (HPP Piva and HPP Gazivode) which are not owned by PE EPS with total capacity of 374 MW. There are also 36 small power plants connected to power distribution companies with total installed capacity of 59.6 MW which are also not owned by PE EPS.

Table 3-2: Electricity generation capacities in 2012 (without APKM)

Technology	Installed capacity MW
Hydro power plants	2,835
Thermal power plants (coal)	3,936
Combined heat and power plants (gas, mazoute)	353
Gas fired power plants	-
Nuclear power plants	-
Other sources (renewable sources) – small PE EPS power plants	20
Small power plants – independent producers	60
TOTAL INSTALLED CAPACITY	**7,204**

Licence holders for electricity generation include companies for electricity distribution: Elektrosrbija llc, Jugoistok llc and the company Milan Blagojević – Namenska JSC Lučani, 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.

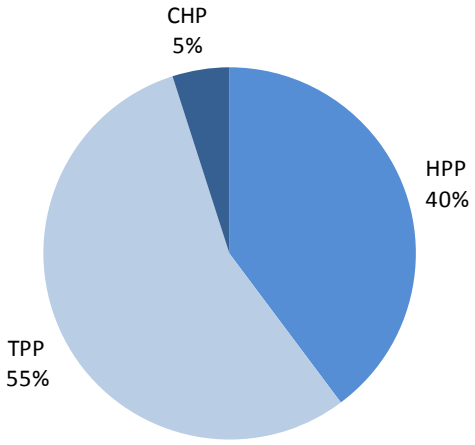

Figure 3-2: PE EPS generation capacities structure in 2012 (without APKM)

3.1.3.2 Transmission

The transmission system, without APKM, includes 29 transformer stations of 400/x and 220/xkV/kV with installed capacity of 13,409 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 9,625 km (9,302 km owned by PE EMS). PE EMS also owns 57 transformer stations of 110/x kV/kV which were supposed to be delegated to electricity distribution companies by the end of 2012. In 2012, organisational, legal and technical preparation activities were organised so as to delegate the transformer stations. Therefore, the delegation process is expected to be completed in 2013.

Table 3-3: Transmission system of PE EMS in the end of 2012 (without APKM)

Transmission system elements	Unit	
Network length per voltage levels, total	km	9,302
400 kV	km	1,614
220 kV	km	1,884
110 kV	km	5,804
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 APKM is performed within five companies for electricity distribution - Elektrovojvodina LLC Novi Sad, Elektrodistribucija Beograd LLC Beograd, Elektrosrbija LLC Kraljevo, Jugoistok LLC Niš and Centar LLC Kragujevac. Distribution system without the territory of APKM includes around 156,500 km of distribution lines, with voltage of 110, 35, 20,10 and 0.4 kV and 36,174 MVA transformer stations with total installed capacity of 30,947 MVA through which electricity is distributed to final customers.

There are 34,010 transformer stations owned by companies with total installed capacity of 26,546 MVA and around 150,828 km of distribution lines of all voltage levels. Their structure is given in Table 3-4. Until the end of 2012, electricity distribution companies were supposed to be delegated with 57 transformer stations of 110/x kV/kV from PE EMS, but this will be done during 2013.

Table 3-4: Distribution lines length in the end of 2012 (without APKM)

km

Voltage level	Distribution company					Total
	Elektrovojvodina	EDB	Elektrosrbija	Jugoistok	Centar	
110 kV	0	31	196	0	115	**342**
35 kV	1,361	967	2,130	1,708	706	**6,872**
20 kV	7,370	0	1,517	0	0	**8,887**
10 kV	649	4,459	12,034	9,358	3,935	**30,435**
0,4 kV	13,673	11,645	45,959	20,831	12,184	**104,292**
Total	**23,053**	**17,102**	**61,836**	**31,897**	**16,940**	**150,828**

3.2 Consumption and generation

Since 2000, PE EPS has increased the generation from the existing capacities by around 20%, to around 36 TWh in the period from 2009 to 2011. In 2012, the generation in hydro power plants, due to unfavourable hydrological situation, was below the average. However, around 650 GWh or by 7% more electricity was generated in comparison to 2011. The generation from thermal power plants fired by coal was lower by 2,200 GWh or 8% lower in comparison to 2011 which is mainly due to extended planned delays due to revitalization activities on important capacities. Combined heat and power plants worked not only during the winter season and they produced slightly lower quantities than in 2011. Although it is relatively low in terms of scale, generation in small power plants connected to the distribution grid is considerable. Namely, they produced almost 60% more electricity than in 2011.

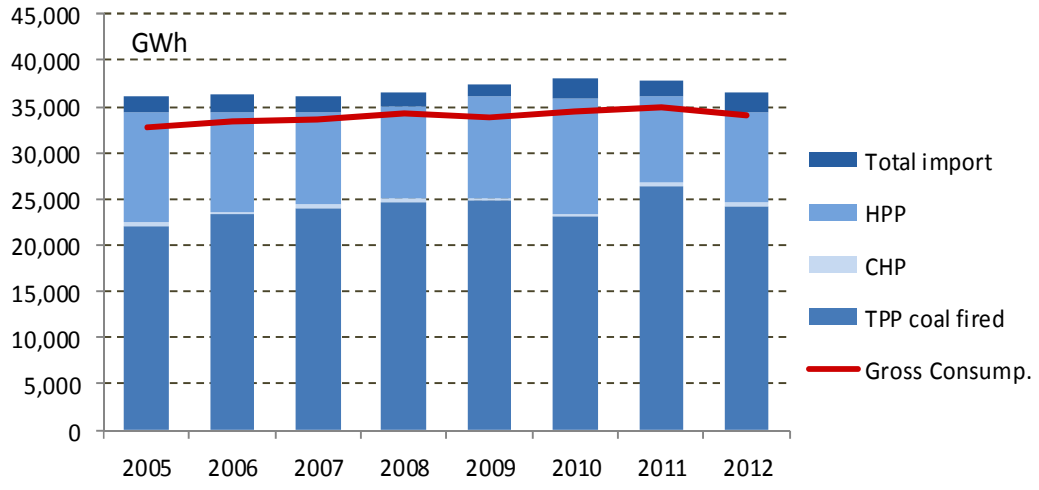

Figure 3-3: Generation, import and gross consumption in Serbia (without APKM)

In 2012, power plants in Serbia generated 34,546 GWh. Out of that number, thermal power plants fired by coal produced 70.3%, hydro power plants 28.4%, combined heat and power plants 1.1 % and other plants, small power plants connected to the distribution system 0.2%.

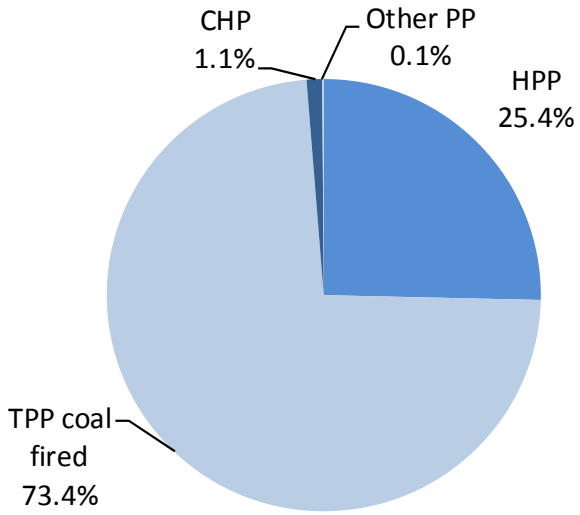

Figure 3-4: Generation structure in 2012 (without APKM)

Table 3-5: Electricity generation and consumption in 2005 – 2012 (without APKM)

GWh

	2005	2006	2007	2008	2009	2010	2011	2012
GENERATION								
Hydro power plants	11,924	10,850	9,930	10,011	11,045	12,420	9,145	9,808
Coal fired thermal power plants	22,138	23,361	24,016	24,661	24,880	23,162	26,462	24,275
Combined heat and power plants	382	180	483	367	139	222	408	390
Other power plants	57	53	40	40	48	61	46	73
Total generation	**34,501**	**34,444**	**34,469**	**35,079**	**36,112**	**35,865**	**36,061**	**34,546**
Other (UNMIK)	1	21	88	0	44	93	184	144
IMPORT								
Electricity import	662	853	792	616	121	755	1,106	1,170
Long-term contract with EP Montenegro	1,024	993	647	797	1,116	1,463	630	737
Annual contracts	3	0	249	121	85	86	64	125
Total import	**1,689**	**1,846**	**1,688**	**1,534**	**1,322**	**2,304**	**1,800**	**2,032**
TOTAL AVAILABLE QUANTITY	**36,191**	**36,311**	**36,245**	**36,613**	**37,478**	**38,262**	**38,045**	**36,722**
Electricity export	1,076	812	249	173	1,442	1,286	764	251
Long-term contract with EP Montenegro	1,285	1,201	1,235	1,220	1,184	1,204	1,210	1,214
Annual contracts	16	23	246	115	94	69	90	127
Total export	**2,377**	**2,036**	**1,730**	**1,508**	**2,720**	**2,559**	**2,064**	**1,592**
Pumping	962	852	864	878	903	1,049	860	875
Other (UNMIK)	169	99	133	59	71	145	199	196
Gross consumption	**32,683**	**33,324**	**33,518**	**34,168**	**33,784**	**34,509**	**34,928**	**34,059**
Transmission network losses	1,423	1,295	1,286	1,224	1,106	1,065	1,096	1,022
Distribution network losses	4,225	4,434	4,583	4,671	4,864	4,957	4,747	4,580
Total losses	5,648	5,729	5,869	5,895	5,970	6,022	5,843	5,602
Losses to gross consumption ratio	17.3%	17.2%	17.5%	17.3%	17.7%	17.5%	16.7%	16.4%
Final consumption	**27,035**	**27,595**	**27,649**	**28,273**	**27,814**	**28,487**	**29,085**	**28,457**

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 system;
- 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.

The most important activities of the transmission system operator in 2012 which provide the compliance of its work with the commitments arising from the Law and electricity market opening are as follows:

- amendments and supplements to the transmission system code;
- adoption of the electricity market rules;
- adoption of the rules for the allocation of cross-border transmission capacities, general and bilateral ones with Hungary and Romania for 2013;
- procurement of energy for the recovery of transmission network losses in the tender procedure;
- system services contracting;
- monitoring security of supply and submit the data which are to be incorporated into the report on security of energy supply to the Ministry;
- making preparations for the establishment of electricity prices for the purpose of system balancing, in line with the electricity market rules;
- collecting and publishing the data and information related to electricity market transparency and monitoring;
- exchanging information necessary for safe and secure operations of the system with other system operators;
- organisational, legal and technical preparations for the delegation of tranformer stations 110/x kV/kV to companies dealing with electricity distribution;
- 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;

harmonisation of the 10 years' transmission system development plan with the distribution system development plan and applications for the connection of producers' facilities and customers' facilities and other activities which improve the security, efficiency and transparency of the transmission system operations.

3.3.1 Grid Code

The enforcement of the PE EMS Transmission System Code began in May 2008, upon the Agency's approval. The Code was supplemented upon PE EMS initiative in December 2011. The Code regulates technical aspects of the transmission system operations and the relations between PE EMS as an energy entity responsible for electricity transmission and transmission system operations and system users. The Code is published on both PE EMS and Agency websites.

In 2012, expert teams of PE EMS and Agency considered the draft of further amendments and supplements to the Code which will be adopted in 2013. Among other things, the Code will be harmonised with the Decree on Conditions for Electricity Delivery and Supply which is expected to be adopted in 2013 and the Electricity Market Rules which was approved by the Agency in December 2012.

3.3.2 Regulation of electricity transmission use-of-system charges

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 and during the whole 2012 are given in Table 3-6.

Table 3-6: Transmission use-of-system charges during 2012

RSD

Tariff element	Tariff rate	Unit	Charge since 01/04/2011
Power	Accounting 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

Average transmission use-of-system charge in 2012 was 0.34 RSD/kWh, the lowest one in comparison to the European countries. (Figure 3-5).

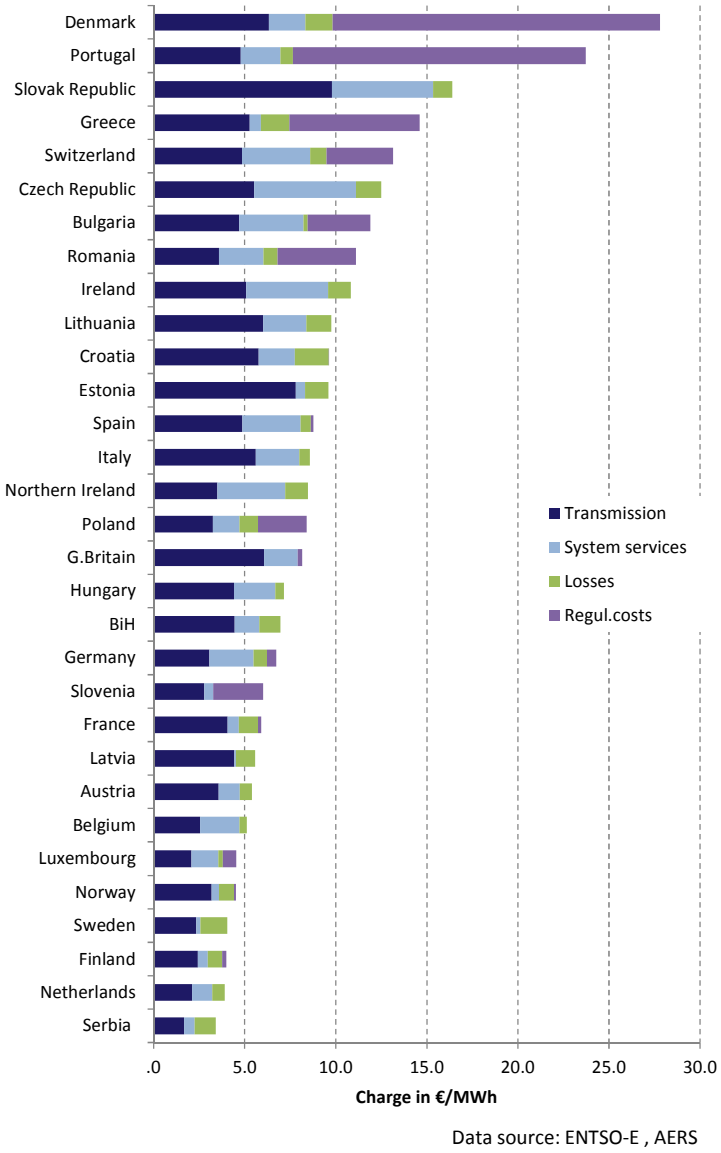

Figure 3-5: Transmission charge structure (€/MWh)

The current transmission use-of-system charge is available on the Agency's website (www.aers.rs).

Pursuant to the Law, in August 2012, the Agency adopted a decision on the establishment of a new Methodology for Setting Costs of Connection to the Electricity Transmission and Distribution System which entered into force on January 1, 2013. The coefficient of the customers' share in a part of the system costs arising from the connection of the facility (DTS) was reduced from 0.8 to 0.3.

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's tasks (Article 9 of Directive 2003/54/EC)	Methodology for use-of-system charges	Methodology for connection costs	Code	Developm. 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
Non-discrimination between system users or users groups, particularly no to the benefit to the company to which it is connected	YES	YES	YES	-
Providing system users with the information they need for efficient access to the system	YES	YES	YES	-

* Not covered by methodologies
** Not covered by development plans

3.3.4 Transmitted electricity quantities

Table 3-8 indicates the transmitted electricity quantities in 2012 in comparison to the quantities planned in the balance sheet and realized in 2011. In comparison to 2011, around 5% less energy was transmitted which was due to a reduced consumption in the country and reduced economic activities in the region due to global economic crisis.

Table 3-8: Basic indicators of transmission plan realisation

	Balance		Realised			Realised (%)	
	2012 without APKM	2012 with APKM	2011 with APKM	2012 without APKM	2012 with APKM	2012 Real./Bal. without APKM	Real. 2012/real. 2011 With APKM
	1	2	3	4	5	4/1	5/3
Entry (GWh)	41,797	47,639	48,165	40,197	45,866	96.2	95.2
Losses (GWh)	1,115	1,297	1,278	1,024	1,206	91.8	94.4
Losses (%)	2.67%	2.72%	2.65%	2.55%	2.63%	95.5	99.1
Exit (GWh)	40,682	46,342	46,887	39,173	44,658	96.3	95.2

Realised electricity transit in 2012, calculated as a lower value of average hourly electricity which was withdrew into or out of the transmission system via interconnection overhead lines amounts to 4,701 GWh. The transit per month is indicated in table 3-9.

Table 3-9: : Electricity transit by months of 2012

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Transit (GWh)	501	391	426	367	357	400	455	423	366	341	345	329

In 2012, 45,866 GWh, including APKM, were transmitted in total. 39,863 GWh were produced in the power plants connected to the transmission system while 6,003 GWh were withdrawn from the neighbouring systems.

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

	Unit	2011	2012	2012/2011 (%)
Transmitted electricity	GWh	42,661	40,197	94.2
Maximum daily gross consumption	GWh	136,589	141,429	103.5
Maximum hourly load	MW	6,372	6,622	103.9
Transmission system losses	GWh	1,096	1,024	93.4
Transmission system losses (as % of transmitted electricity)	%	2.57	2.55	99.2

On a part of the system without APKM, 40,197 GWh were transmitted, while 34,416 GWh out of these were produced outside the plants on APKM, 5,654 GWh were withdrawn from the neighbouring systems and the 127 GWh remaining were withdrawn from the territory of APKM.

The greatest share of the transmitted energy is delivered to electricity distribution systems (around 70% are delivered to the distribution companies on average), to the neighbouring systems, pumped storage plants and pumping facilities 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 2.55% in 2012.

Electricity consumption in Serbia, but in the region as well, depends on the season. Therefore, maximum consumption is seen in wintertime at lowest temperatures or on days prior to holidays. The beginning of 2012 was very cold. Twenty days' period from the end of January till mid-February recorded average daily temperature of almost -7°C. Beside partial limitation of consumption to industrial consumers and electricity savings measures which were implemented, in that period, on February 7, 2012 with average daily temperature of -8,6 °C, maximum daily gross consumption amounted to 141,429 MWh. One day later, with average daily temperature of -9,4 °C, between 6 p.m. and 7 p.m. maximum hourly load in 2012 was recorded and amounted to 6,622 MW.

3.3.5 Use of cross-border transmission capacities

The Republic of Serbia has eight borders and eleven interconnection overhead 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, monthly and intraday level (first come-first served), while MAVIR ZRt. allocates the available capacity on daily level.

3.3.5.1 Rules for the allocation of cross-border transmission capacities

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 2012 (MW)

MW

Border/months	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Hun--->Ser	700	700	700	700	677	700	700	700	700	700	700	700
Rom---> Ser	700	750	642	630	323	287	402	282	355	432	485	203
Bul ---> Ser	250	300	274	250	250	300	300	300	230	158	250	250
Mac---> Ser	300	350	350	350	232	200	200	230	250	250	250	250
Alb---> Ser	210	210	203	203	183	210	210	95	196	210	250	250
Mon---> Ser	600	550	600	600	518	403	529	500	500	600	640	600
BIH--- Ser	550	500	450	400	300	400	400	400	450	358	383	450
Cro---> Ser	550	500	450	400	300	400	400	400	390	358	383	450

In 2012, PE EMS organised explicit auctions for 50% of available cross-border transmission capacities based on principle ""pay as bid" (marginal price – the price offered by the bid the acceptance of which makes the sum of values of all transmission capacities from accepted auction bids equal to the available capacity) for all borders and direction in the control area of the Republic of Serbia, except for the Serbian – Hungarian border where common auctions were organised. In line with the Rules for Allocation of Available Cross-Border Transmission Capacities on Borders of Control Area of Republic of Serbia and Balancing of Market Participants Schedules for period 01/01/2012 – 31/12/2012", on the following borders: Serbia – Albania, Serbia – Bosnia and Herzegovina (BIH), Serbia – Bulgaria, Serbia – Croatia, Serbia – Montenegro and Serbia – Romania, PE EMS organised explicit auctions for 50% of available capacity charging the capacity reservation in case of congestion at the marginal price. The allocation of the other 50% of capacities was organised by neighbouring transmission system operators in compliance with their rules.

Table 3-12: Average monthly amounts of NTC for exit from Serbia in 2012 (MW)

MW

Border/months	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Ser --->Hun	700	700	700	700	677	700	700	700	700	700	700	700
Ser --->Rom	385	333	373	300	350	278	384	206	250	318	282	544
Ser --->Bul	200	400	450	300	300	300	200	218	192	145	250	250
Ser --->Mac	600	630	640	620	426	530	437	458	428	423	542	600
Ser --->Alb	210	210	203	203	173	210	200	95	176	187	250	250
Ser --->Mon	600	566	585	550	677	470	594	448	373	366	483	600
Ser ---BIH	500	500	450	500	339	350	384	339	235	308	350	400
Ser --->Cro	500	500	450	500	318	350	384	339	166	308	350	400

On October 27, 2011, the Agency approved the Rules for Allocation of Available Cross-Border Transmission Capacities on Borders of Control Area of PE EMS for the period 01/01 – 31/12/2012.

In the end of 2011, PE EMS reached an agreement with the Hungarian transmission system operator (MAVIR ZRt.) on the follow up of implementation of joint explicit auctions in 2012 for the allocation of 100% of available capacity with a charge at marginal price 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) and intraday auctions based on the principle First Come – First Served, 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 EMS and MAVIR ZRt. for 2012, all companies registered in the European Union or in the Contracting Parties of the Treaty establishing the Energy Community were entitled to participate

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 01/01/2012 at 00:00h - 31/12/2012 at 24:00h” were entitled to participate in the auctions.

In 2012, there were 45 market players entitled to participation in the auctions 50% of the available capacity. Twenty nine of them actively participated in the auctions. There were 31 participants in the auctions for 100% of available capacity on the Serbian-Hungarian border while there were 42 eligible ones.

Table 3-13: General data on annual auctions for the allocation of 50% of available cross-border transmission capacities in 2012

Border – direction	Congestion scale: Total demanded/total allocated capacity	Number of participants in the auctions	Price of the last successful bid in case of congestion EUR/MWh
Alb – Ser	5.32	11	0.28
BIH – Ser	4.40	13	0.55
Bul – Ser	8.16	19	9.00
Cro – Ser	4.49	14	0.87
Mon – Ser	4.30	13	0.18
Mac – Ser	5.30	13	0.73
Rom - Ser	5.13	16	4.70
Ser - Alb	5.25	9	3.46
Ser - BIH	3.80	13	0.55
Ser - Bul	4.08	13	0.27
Ser - Cro	4.80	14	0.53
Ser - Mon	3.83	11	1.50
Ser - Mac	3.70	14	0.61
Ser - Rom	4.70	16	0.28

In 2012, 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 2012 is given in Table 3-14. The general data on monthly auctions are given in the Table 3-15.

Table 3-14: Number of participants in monthly auctions for 2012

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Number of participants	18	17	18	16	17	18	18	17	19	18	19	18

Table 3-15: General data on monthly auctions for the allocation of 50% of available cross-border transmission capacities in 2012

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	24	16 / 16	1.38 / 3.00	6 - 10	0.02 – 0.17
BIH - Ser	0	14 / 14	1.65 / 3.55	10 - 12	0.06 – 0.31
Bul - Ser	20	15 / 15	2.80 / 7.00	9 - 15	0.47 – 16.23
Cro - Ser	4	15 / 15	1.56 / 2.72	7 - 9	0.07 – 1.76
Mon - Ser	1	12 / 12	1.68 / 2.75	15 - 22	0.21 – 3.71
Mак- Ser	0	10 / 15	0.70 / 2.08	8 - 12	0.01 – 0.07
Rom - Ser	10	13 / 13	1.72-3.57	6 - 10	0.08 – 0.46
Ser - Alb	3	40 / 40	1.40 / 5.96	10 - 13	0.15 – 3.11
Ser - BIH	24	24 / 24	2.16 / 4.61	4 - 11	1.17 – 8.59
Ser - Bul	0	25 / 25	1.33 / 5.14	9 - 12	0.07 – 0.81
Ser - Cro	20	13 / 14	0.63 / 5.39	5 - 13	0.01 – 2.12
Ser - Mon	4	23 / 23	1.40 / 6.00	8 - 11	0.04 – 0.45
Ser - Mак	1	12 / 12	1.10 / 2.44	13 - 19	0.02 – 0.43
Ser - Rom	0	27 / 27	1.12 / 7.96	10 - 13	0.05 – 1.25

Weekly auctions were organised when there was available transfer capacity (ATC – the difference between net transmission capacity and previously allocated transmission capacity) from monthly auctions, or when, due to changing circumstances, cross-border transmission capacity was calculated with delay, upon monthly auctions. This was the case in 31st, 32nd, 33rd and 34th week of 2012.

Table 3-16: General data on weekly auctions for cross-border transmission capacities in 2012 – for 31st, 32nd, 33rd and 34th week (when there were congestions)

Border – direction	Period	Available Transmission Capacity (ATC) MW	Total demanded 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
Ser-Alb	31st week	81	155	1.91	2	3.82
	32nd week	81	135	1.67	2	3.33
	33rd week	81	141	1.74	2	3.97
	34th week	81	118	1.46	2	1.44

On the Serbian-Hungarian Border, in 2012, there were 21 participants, and there were congestions in both directions.

Table 3-17: General data on common annual auctions for cross-border transmission capacities in 2012

Border – direction	Congestion scale: total demanded/total allocated capacity	No. of participants in auctions	Marginal price EUR/MWh
Hun – Ser	3.10	20	1.16
Ser – Hun	3.15	21	0.38

Number of participants as well as other general data on common monthly auctions on Serbian-Hungarian border in 2012 are given in the Table 3-18.

Table 3-18: General data on common monthly auctions for the allocation of 100% of available cross-border transmission capacities in 2012 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	Number of participants in auctions (min.-max.)	Marginal prices range EUR/MWh
Hun – Ser	1	12 / 12	1.68 – 2.75	15 - 22	0.21 – 3.71
Ser – Hun	1	12 / 12	1.10 – 2.44	13 - 19	0.02 – 0.43

In 2012, PE EMS had intensive negotiations with the transmission system operators from the neighbouring countries on the organisation of common auctions. The agreement was made with the Romanian transmission system operator (CN Transelectrica) on the organisation of common auctions in 2013. The contract between the two transmission system operators reads that Transelectrica will be responsible for the implementation of intraday and long-term auctions (annual and monthly) while PE EMS will be responsible for daily ones. An agreement was made with the Hungarian transmission system operator (MAVIR ZRt.) on PE EMS's responsibility for the implementation of intraday and long-term auctions (annual and monthly) of transmission capacities while MAVIR ZRt. will be in charge of daily auctions.

Pursuant to the Articles 46 and 72 of the Law, PE EMS submitted the rules for the allocation of cross-border transmission capacities for 2013 to the Energy Agency. On October 31, 2012, 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 01/01/2013 – 31/12/2013". On November 13, 2012, 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 2013". In addition, on November 27, 2012, the Agency adopted a decision on approval to the "Agreement between the Transmission System Operators of the Republic of Romania – CN Transelectrica and 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 2013".

3.3.5.3 Annual exchange through the borders of the control area

Total scale of cross-border transactions in 2012 amounted to 10,781 GWh in entry direction, i.e. 10,004 GWh in exit direction from the market area of Serbia, while the scale of internal transactions amounted to 7,815 GWh. Table 3-19 indicates the scale of nominated and confirmed internal and external (cross-border) transactions in the period 2008-2012.

Table 3-19: Cross-border and internal transactions in the Serbian market area 2008-2012

GWh

Year	Cross-border transactions – entry	Cross-border transactions – exit	Internal transactions
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
2012	10,781	10,769	7,815

In addition to the Table 3-20, part of cross-border exchange was also realised through the island operation[2] (operation within the system which is separated from the rest of the interconnection) within the distribution system (48,077 MWh in direction from Serbia towards BIH and 1,173 MWh in the opposite direction). A part of the quantities given in the table 3-20 are related to electricity exchanged towards, i.e. with APKM.

Table 3-20: Part of cross-border and internal transactions related to APKM 2008-2012

GWh

Year	Cross-border transactions – delivery to APKM	Cross-border transactions– reception by APKM	Internal transactions – delivery to APKM	Internal transactions– reception by APKM
2008	162	160	575	135
2009	522	125	245	149
2010	142	129	676	222
2011	31	88	785	283
2012	53	101	572	135

[2] Island is a part of the power system separate from the rest of the interconnection. Generation for the island or supplying island from the neighbouring system is called island operation.

Energy exchange with APKM was realized through internal and external transactions. Table 3-21 indicates the scale of external and internal transactions with APKM in the period 2008-2012.

In addition to Table 3-21, a part of internal exchange related to APKM was realised with a part of transmission and distribution system on the north of APKM (41,275 MWh were delivered to PE Elektrokosmet through the distribution system, while 154,775 MWh through the transmission system).

Table 3-21: Entry and exit nominated cross-border transactions for each border for 2012

GWh

Border with	Entry into Serbia	Exit from Serbia
Romania	2,191	67
Bulgaria	1,548	247
Macedonia	260	2,454
Montenegro	425	2,868
Albania	154	1,557
BIH	634	848
Croatia	1,082	594
Hungary	4,485	2,133
By all borders	10,781	10,769

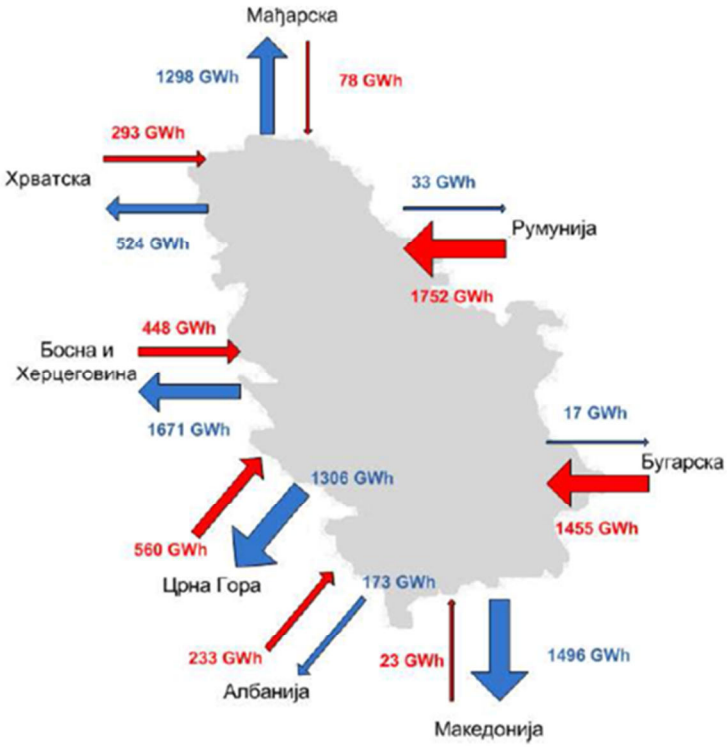

Figure 3-6: Physical flows – electricity exchange on the borders of the control area of the Republic of Serbia in 2012

3.4 Regulation of the distribution system operator

Distribution system operators are daughter companies within PE EPS, 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,

The most important activities of the distribution operator in 2012 which provide the compliance of its work with the commitments arising from the Law and electricity market opening are as follows:

- preparations for reorganisation, in order to unbundle the supply operations from distribution and distribution system operation;
- implementation of measures for energy system loss reduction, which are above the technically justified level;
- elaboration of the ten years' distribution system development plan and harmonisation with the transmission system development plan, other distribution systems and applications for the connection of facilities of producers and customers;
- elaboration of the price level for standard connections within the distribution system;
- preparations for market opening for the customers who will lose the right to public supply in 2014;
- submission of the data which are to be incorporated into the report on security of energy supply to the Ministry in charge of energy;
- organisational, legal and technical preparations for the assumption of tranformer stations 110/x kV/kV from PE EMS;
- preparation of the data necessary for the adoption on the distribution use-of-system charge and the submission of the data and documentation necessary for price regulation to the Agency;
- procurement of energy meant for distribution grid loss recovery and
- other activities which improve the security, efficiency and transparency of the distribution system operations.

Pursuant to the Law, by mid-2021, the 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 the takeover should have been adopted by the operator by January 1, 2013 upon making an analysis of the situation with metering devices, switchboards, connection lines, installation and equipment in the switchboard and upon determining the necessity to replace them or adjust them to the requirements stipulated by technical regulations and distribution system code. None of the five distribution system operators has adopted these plans as a separate document. Only Elektrovojvodina included this plan in its ten years' development plan in an adequate manner.

The 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.

3.4.1 Distribution System Code

Upon the Agency's approval, the Distribution System Codes have been enforced in all the five companies for electricity distribution within PE EPS since early 2010. The codes regulate 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. The codes should be harmonised with the Energy Law. It was not done in 2012 since the new Decree on Conditions for Electricity Delivery and Supply has not been adopted yet.

3.4.2 Regulation of the electricity distribution use-of-system charges

The distribution use-of-system charges which were valid in 2012 were the same as those applicable since April 1, 2011 which were approved by the Government of RS, upon the decision of the Agency. These tariffs enabled the customers connected to the distribution grid to switch suppliers and purchase electricity from the suppliers in the open market, if they decide to do so. However, the customers did not exercise that right in 2012.

Figure 3-7 indicates average electricity transmission and distribution use-of-system charges (in total) by customers' categories in 2012. The total average transmission and distribution charge for all customers amounted to 2.1 RSD/kWh.

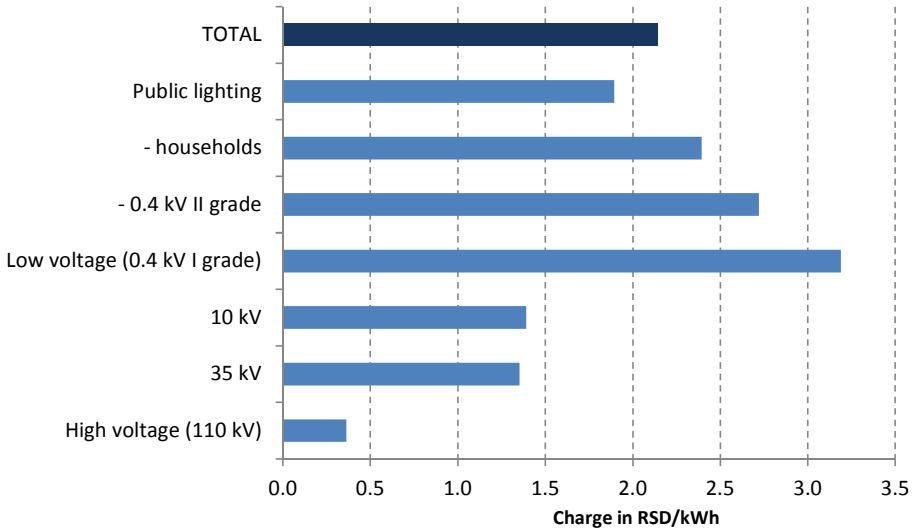

Figure 3-7: Average annual distribution use-of-system charge

The current distribution use-of-system charges are available on the Agency's website (www.aers.rs).

In late October 2012, the Council of the Agency adopted a new Methodology for Setting Electricity Distribution Use-of-System Charges, upon consultations with the distribution system operators and customers.

Pursuant to the Law, in August 2012, the Agency adopted a decision on the establishment of a new Methodology for Setting Costs of Connection to the Electricity Transmission and Distribution System which entered into force on January 1, 2013. The coefficient of the customers' share in a part of the system costs arising from the connection of the facility (DTS) was reduced from 0.8 to 0.3. The distribution system operators adopted new price lists for connections.

3.4.3 Harmonisation with the EU directives

Distribution system operators enforce the methodologies for setting charges and methodologies for connection costs. They also adopted the Codes.

In 2012, the distribution companies were involved in the preparation of the ten years' development plans for the first time and they harmonised them with the transmission system development plan, other distribution systems and applications for the connection of facilities of producers and customers. Nevertheless, not all the elements of these documents have been complete so as to be close to the Agency's approval. Anyway, they present a very good basis for their completion in 2013.

Distribution system operations are harmonised with the Directive 2003/54/EC, as given in Table 3-22.

Table 3-22: Harmonisation of distribution companies operations with the requirements of the Article 14 of the Directive 2003/54/EC

System operator's tasks (Article 9 of the Directive 2003/54/EC)	Methodology for connection tariffs	Methodology for connection costs	Code	Development plan
Maintain a secure, reliable and efficient electricity distribution system	YES	YES	YES	YES
Non-discriminate between system users (or classes of system users)	YES	-*	YES	YES
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	-**

* It is not covered by the methodology
** It is not covered by the development plan

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 3-23: Electricity quantities distributed in 2006 – 2012

GWh, %

	2005*	2006*	2007*	2008	2009	2010	2011	2012
Distributed - Total electricity withdrawn by the distribution system	28,556	29,030	29,355	29,942	29,970	30,453	30,604	30,256
Withdrawn from the transmission grid (excluding customers connected to 110 kV)	28,449	28,977	29,315	29,902	30,392	30,558	29,922	30,183
Generation from distribution power plants	57	53	40	40	61	46	48	73
Total delivered electricity quantities (excluding customers connected to 110 kV)	24,331	24,596	24,772	25,271	25,106	25,496	25,797	25,672
Distribution system losses	4,225	4,434	4,583	4,671	4,864	4,957	4,747	4,579
Distribution system losses (as % of total withdrawn energy)	14.7	15.3	15.6	15.6	16.2	16.3	15.5	15.1

Electricity losses within the distribution system exceed the technically justified ones. Such a losses level can only partially be justified by inevitable technical consequences of high share of low voltage consumption (even twice as high as in the EU). High losses are 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. In 2012, distribution system operators continued with the activities on losses reduction, mainly by greater control of metering points so as electricity theft could be identified. It resulted in further loss reduction. Namely, the losses in 2012 recorded 15.1% of total withdrawn energy which is around 170 GWh lower than in 2011.

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 3-8 indicates the structure of the regulated electricity price for final customers, which are applied as of April 1, 2011. Around 58% of the total price is accounted for by electricity production costs and procurement costs. In 2012, electricity prices for final customers were not changed.

The current regulated electricity prices for final customers are available on the Agency's website (www.aers.rs).

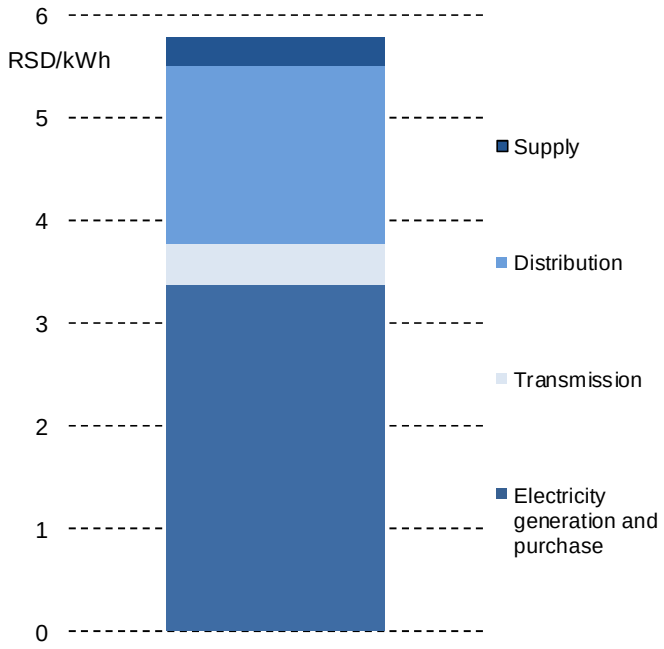

Figure 3-8: Structure of average retail regulated electricity price for final customers

Figures 3-9 and 3-11 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 2012. They are calculated in line with EUROSTAT

methodology. The prices in Serbia for both customer categories were the lowest ones in this period, not only in comparison to the developed European countries, but to the countries in the region which are approximately on the same level of economic development as Serbia.

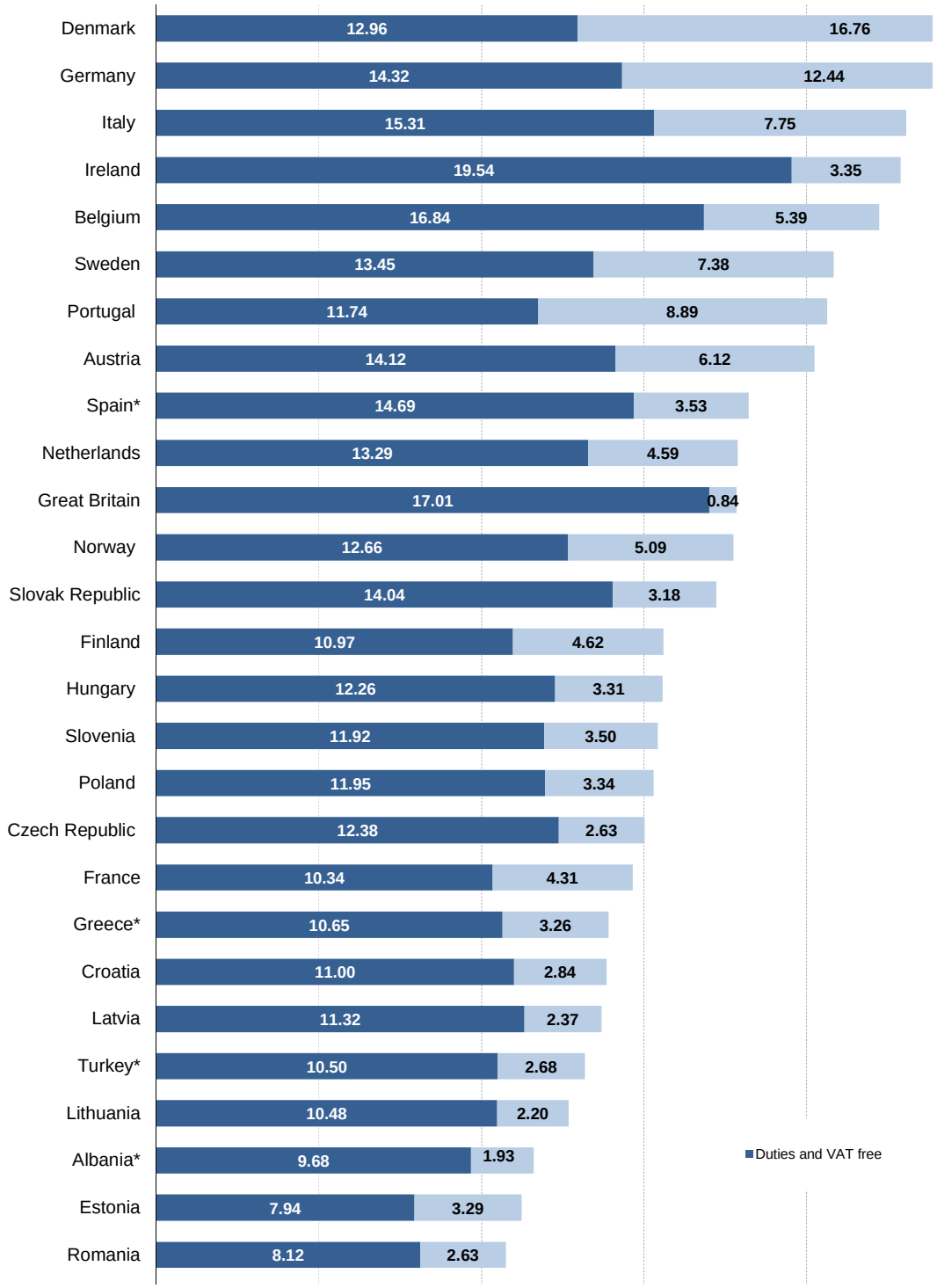

Figure 3-9: Electricity prices for households – second half of 2012

Figure 3-10 indicates a more detailed structure of retail electricity price for households in some of European capitals in December 2012. The data indicate that Serbia has the lowest energy prices and the (transmission and distribution) grid charges.

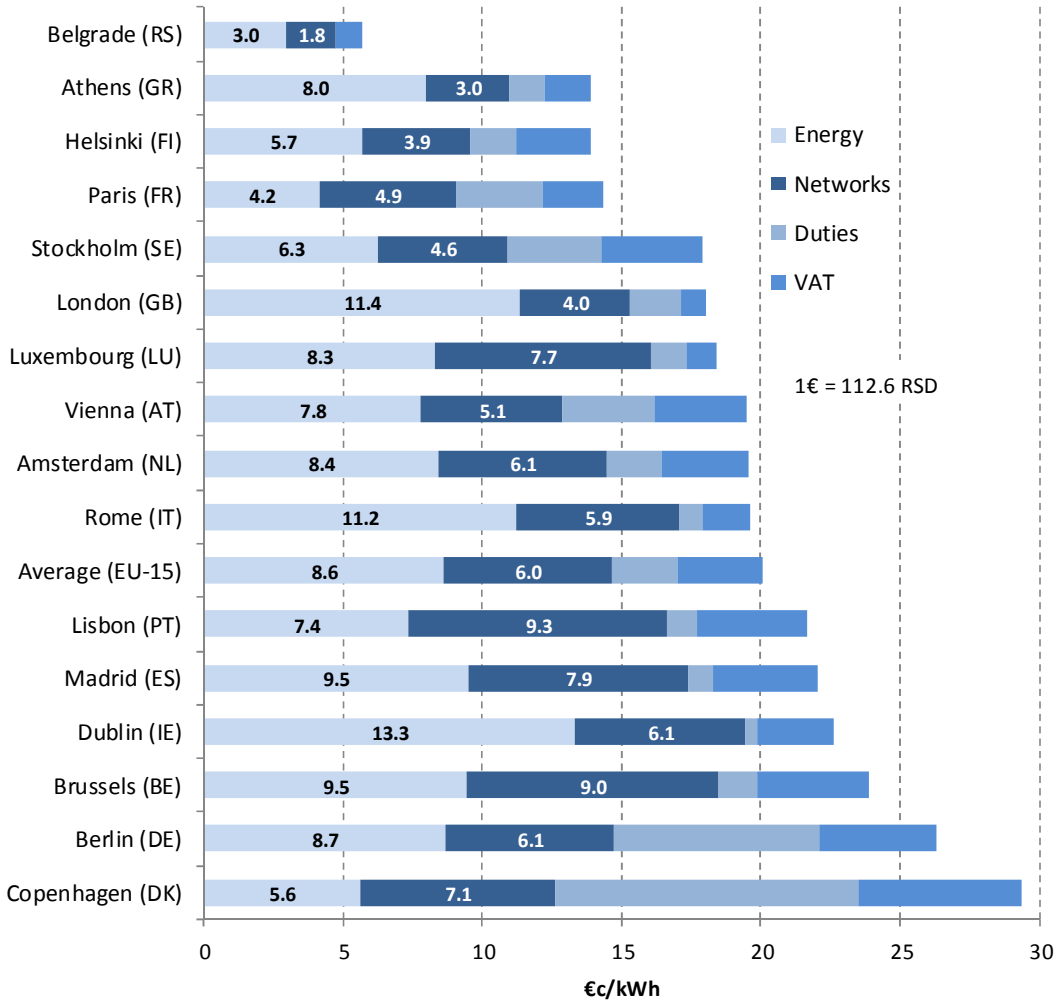

Figure 3-10: Structure of electricity purchase price for households in some European capitals in December 2012

The current level of electricity price is not economically justified which limits the future growth and development of the power sector to a great extent since, on one hand, it does not create the space for local reserve fund which could be used for investments, and on the other hand, it is destimulating other investors.

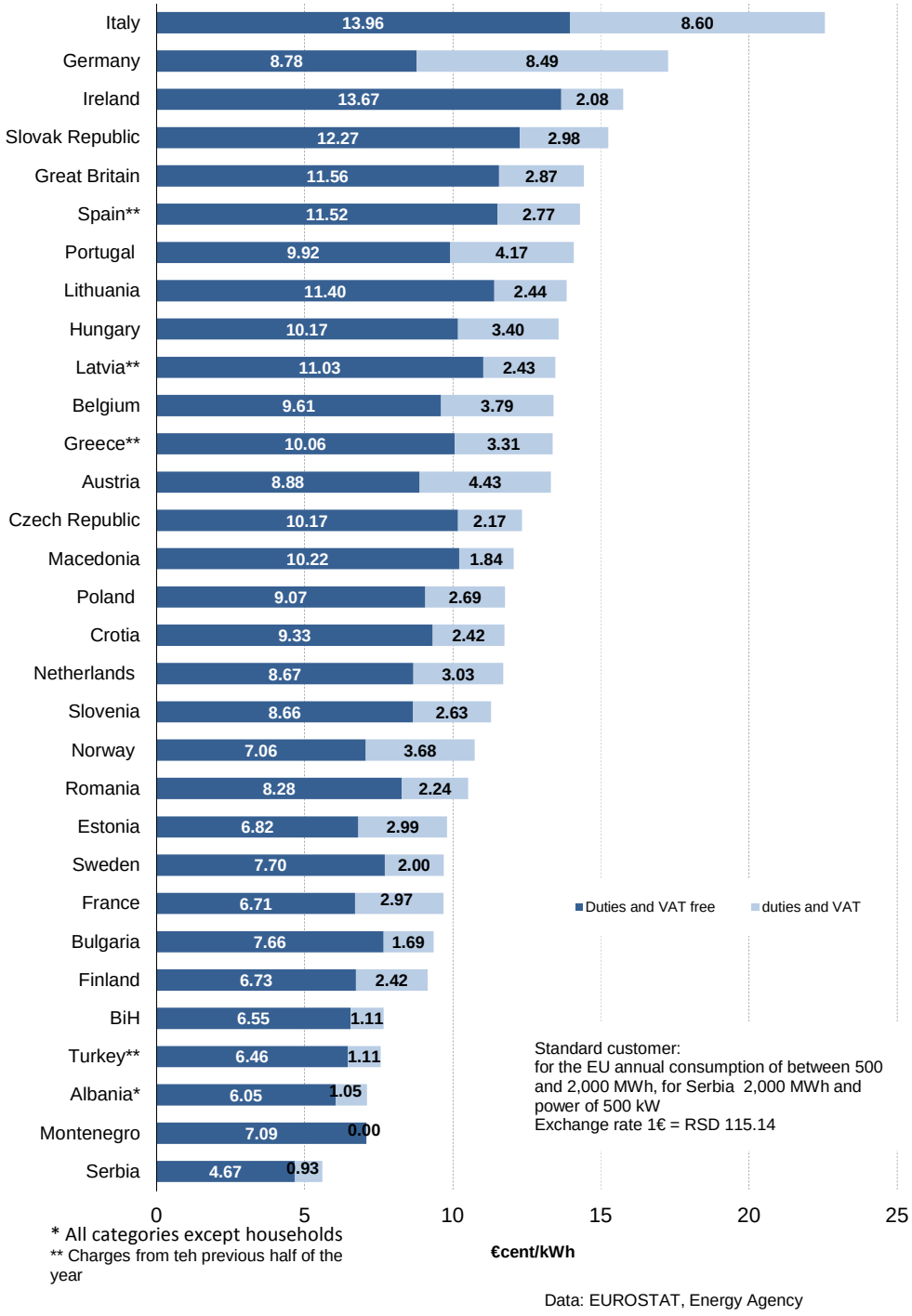

Figure 3-11: Electricity price for industry – second half of 2012

3.6 Electricity market

Electricity market in Serbia includes:

1) Bilateral electricity market;
2) Balanced electricity market and
3) Organised electricity market.

The scheme of electricity market is given in figure 3-12. The decisions on the establishment of the company "EPS Snabdevanje" llc. Belgrade were prepared in the end of 2012 and adopted in early 2013.

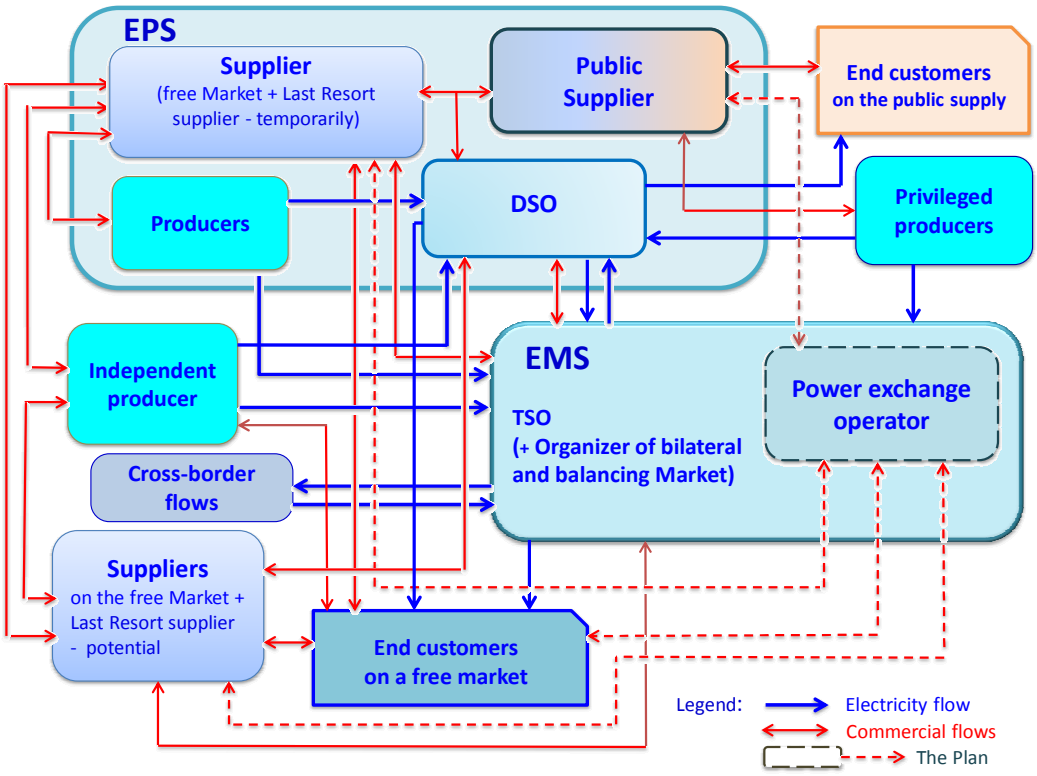

Figure 3-12: Scheme of electricity market

Electricity market players are the following:

- electricity producers;
- electricity suppliers;
- electricity public supplier;
- final customers;
- transmission system operator in case of provision of system services, system balancing, provision of the safe system operations and electricity purchase for loss recovery within the transmission system;
- distribution system operator in case of electricity purchase for loss recovery within the distribution system and
- market operator.

The documentation for the selection of public supplier which will supply the final customers entitled to public supply is under preparation.

In late 2012, the first contracts between suppliers in the open market and final customers were prepared and their realization is initiated in 2013.

3.6.1 Bilateral electricity market

Both electricity purchase and sales are organised on the bilateral market directly between market players, while on the wholesale bilateral market, the players traded in electricity at free prices, while on the retail bilateral market, supply was organised solely at regulated prices due to the fact that in 2012, no final electricity customer chose his supplier in the open market.

By the end of 2012, in term of regulating wholesale for tariff customers, the 2004 Law was still applied (as it was prescribed by the transitional provisions of the Law). Pursuant to the Law, wholesale was entrusted by the Government of the Republic of Serbia to PE EPS via a contract. PE EPS was obliged to procure electricity primarily from local producers, and purchase potential missing quantities in the open market. In addition, they had to sell the procured energy to retailers who supply tariff customers. In the period when the total production in PE EPS power plants exceeded sales to tariff customers, PE EPS sold electricity in the open market.

3.6.1.1 Open wholesale market

Open wholesale electricity market in 2012 was based on trade between suppliers since there are almost no independent electricity producers at all. The activities of the suppliers in the open market are mostly concerned with the field of cross-border exchange, mostly for transit through Serbia which is dominant due to the central geographic position of the power system in the region and the 8 existing borders, as well as for the purpose of import and export.

In 2012, 24 of 27 suppliers were active in cross-border exchange while the other three suppliers only dealt with the trade with other suppliers in the internal electricity market in Serbia.

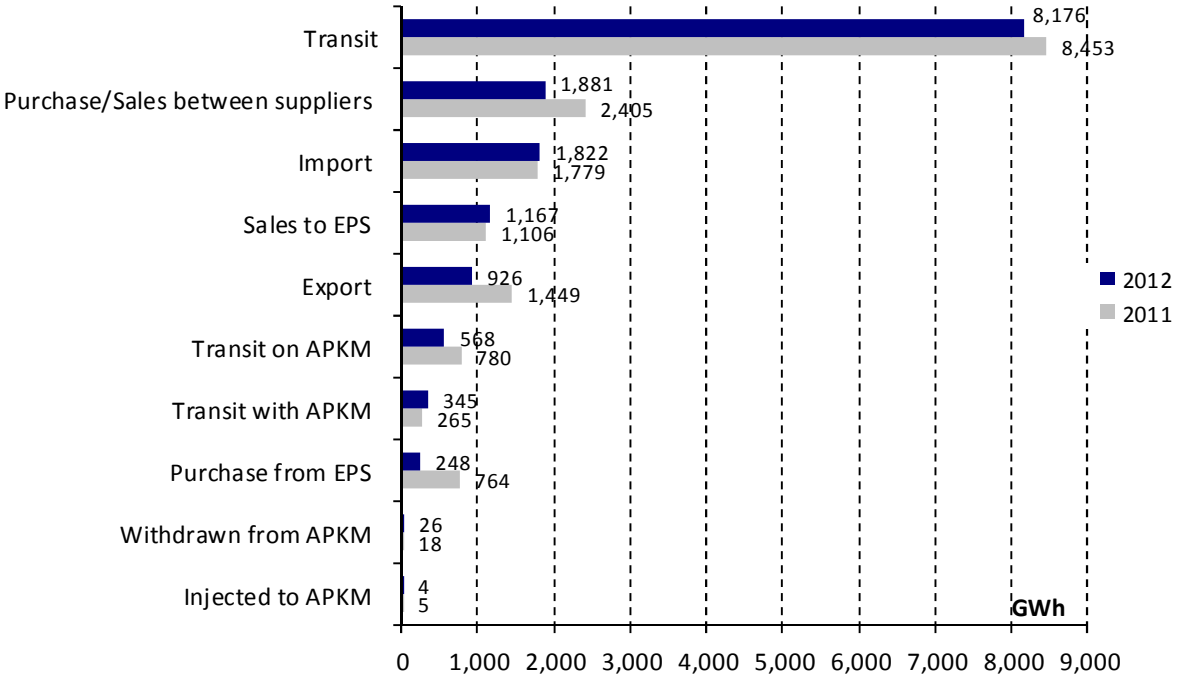

Figure 3-13: Electricity quantities by trading activities during 2011 and 2012

In 2012, electricity quantities transited through Serbia was reduced in comparison to 2011. Reduction of transited electricity quantities was due to the disruption in the electricity market which was caused by an extremely cold period, as well as by consumption decrease both in the region and in Europe.

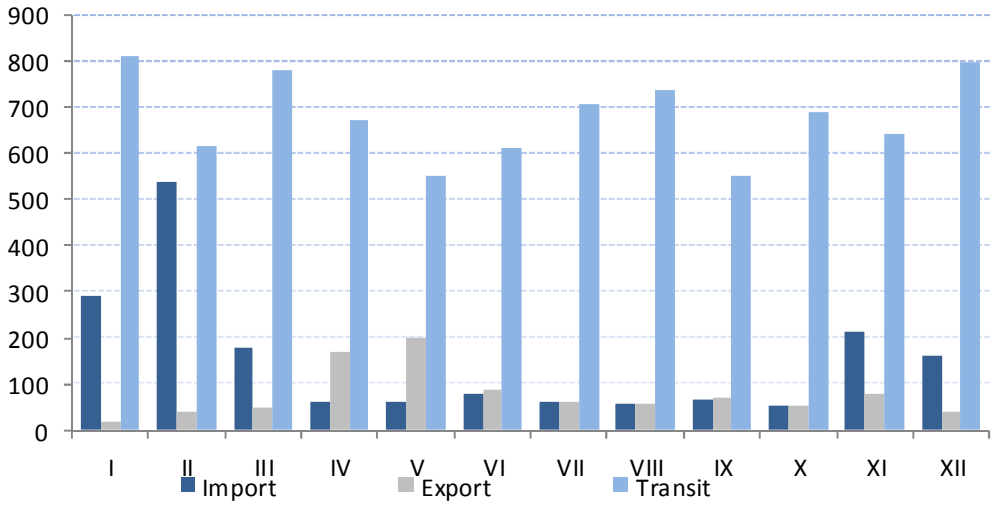

Figure 3-14: Suppliers' import, export and transit in 2012

Increased import and sales in PE EPS and reduction of export and purchase from PE EPS were due to unfavourable weather conditions in February and hydrological circumstances which were below the average most days of the year. The scope of import, export and transit performed by suppliers by month is indicated in figure 3-14 which proves that the highest import was in wintertime, January-February and November-December, while export was the highest in the period April-May, while the transit did not depend on the season.

Figure 3-15 indicates that PE EPS bought almost twice as high quantity of energy in February than in January, during which the purchase was also on a high level. The greatest quantities of energy were sold by EPS to suppliers in the

period April-May which corresponds to the months with high export, while the trade between suppliers did not indicate any season-related dependence.

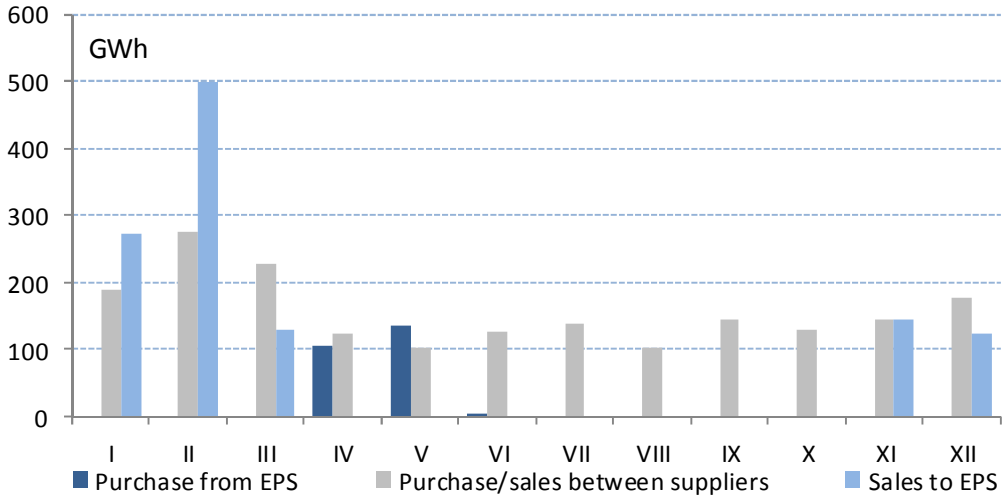

Figure 3-15: Purchase/sales between suppliers, i.e. between suppliers and EPS in 2012

Relevant indicators of development level and electricity market concentration in Serbia in 2012 are given in Table 3-24. In addition, the change in values of these indicators is given in percentages in comparison to their values in 2011. The following data are given for each of indicated trader activities:

- total electricity quantity;
- 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].

Table 3-24: Level of electricity market concentration in Serbia in 2012

Trading activity	Electricity quantity		Share of three traders with the greatest trading scale [%]		Herfindahl-Hirschman Index - HHI		Market concentration level
	2012	2012/2011 %	2012	2012/2011	2012	2012/2011 %	2012
Trade with PE EPS							
selling to EPS	1,167	5.5	69	-5.8	1,950	-20.7	High
purchase from EPS	248	-67.4	58	4.4	1,552	0.8	Moderately high
Wholesale between the traders in the electricity market							
sales	1,881	-21.8	59	23.7	1,891	68.7	High
purchase	1,881	-21.8	51	1.5	1,230	7.4	Moderately high
Electricity import and export							
import	1,822	2.4	68	20.8	2,028	44.0	High
export	926	-36.1	60	3.2	1,482	-19.4	Moderately high
Transit							
transit	1,167	5.5	69	15.5			

[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

The indicated data prove the reduction of electricity quantities and the concentration increase in comparison to 2011 in almost each of the trading activity. Market concentration level is still between moderately high to very high in all trading activities. Apart from the decrease in market concentration index HHI in the field of electricity sales to PE EPS of 20%, market concentration level is still very high. In comparison to 2011, the share of dominant suppliers in all trading activities was considerably increased, especially in the fields of import and sales of electricity to other suppliers in the market. 7 suppliers out of 27 active ones are the three most dominant ones in each of the trading activities.

The total scale of cross-border electricity exchange performed by the suppliers on each border and direction in 2012 is indicated in the figure 3-16.

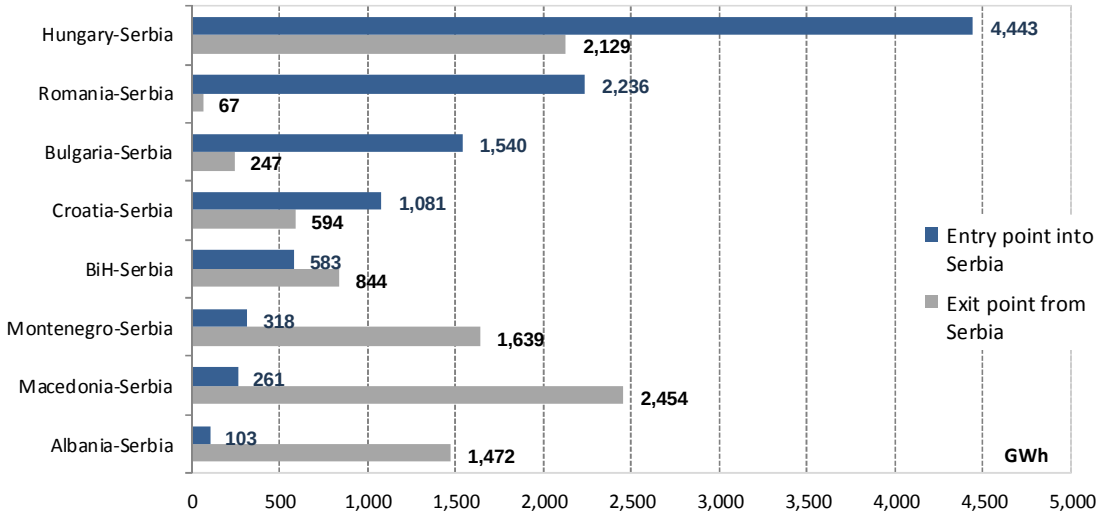

Figure 3-16: Cross-border electricity exchange between suppliers

Total electricity import nominated by the electricity trader and confirmed by PE EMS on all borders amounted to 10,565 GWh, while the nominated and confirmed export amounted to 9,446 GWh. The greatest number of import transactions were made from Hungary, Romania and Bulgaria as it was the case in 2011. The greatest quantities were exported towards Macedonia and Hungary, substantial quantities were nominated towards Montenegro and Albania, while the export towards all other borders was considerably lower. The only change in comparison to 2011 was the direction of net import and export on the Croatian border, since, in 2011, higher quantities were exported from Serbia to Croatia. This was due to cold weather in February when large electricity demand was present in the southern Europe.

3.6.1.2 Retail market

3.6.1.2.1 Electricity quantities delivered to final customers

In 2012, 27,984 GWh were sold and delivered to final customers, which is almost 5.5% more than in 2005. However, in comparison to 2011, 2012 consumption was 2.2% lower.

Table 3-25: Electricity consumption structure in the period 2005-2012

GWh, %

Consumption category	2005	2006	2007	2008	2009	2010	2011	2012	2012/2011 (%)
Households	14,407	14,276	14,145	14,313	14,412	14,645	14,666	14,517	99.0
Other customers connected to low voltage (0.4 kV)	4,957	5,195	5,379	5,614	5,567	5,534	5,640	5,585	99.0
Customers connected to low voltage in total (0.4 kV)	19,364	19,471	19,524	19,927	19,979	20,179	20,305	20,102	99.0
Customers connected to medium voltage (10, 20 and 35 kV)	4,967	5,125	5,247	5,345	5,127	5,317	5,553	5,570	100.3
Customers connected to high voltage (110 kV)	2,183	2,337	2,430	2,570	2,216	2,555	2,751	2,312	84.0
Electricity delivered to final customers	26,514	26,933	27,201	27,842	27,322	28,051	28,609	27,984	97.8
TPP and HPP consumption to cover their own demand	521	662	447	431	492	436	476	473	99.4
Total consumption	27,035	27,595	27,648	28,273	27,814	28,487	29,085	28,457	97.8

The greatest consumption drop of around 16% was recorded with customers connected to high voltage, while the consumption of customers connected to low voltage was 1% lower. Only the customers connected to medium voltage had only 0.3% of increase in comparison to 2011.

In the past several years, there was a slightly increased consumption in households during wintertime. The Agency will follow this occurrence and, if it proves to be necessary, change the ratios and limits of tariffs so as to destimulate irrational electricity consumption for heating purposes.

Companies licenced for electricity supply in the open market (in the end of 2012, there were 58 of them) were not active in the retail market, since the customers did not show interest for purchase at market price.

Table 3-25 indicates the electricity consumption in Serbia (without APKM) in the period 2005-2012, including electricity which the producers consumed to cover their own demand.

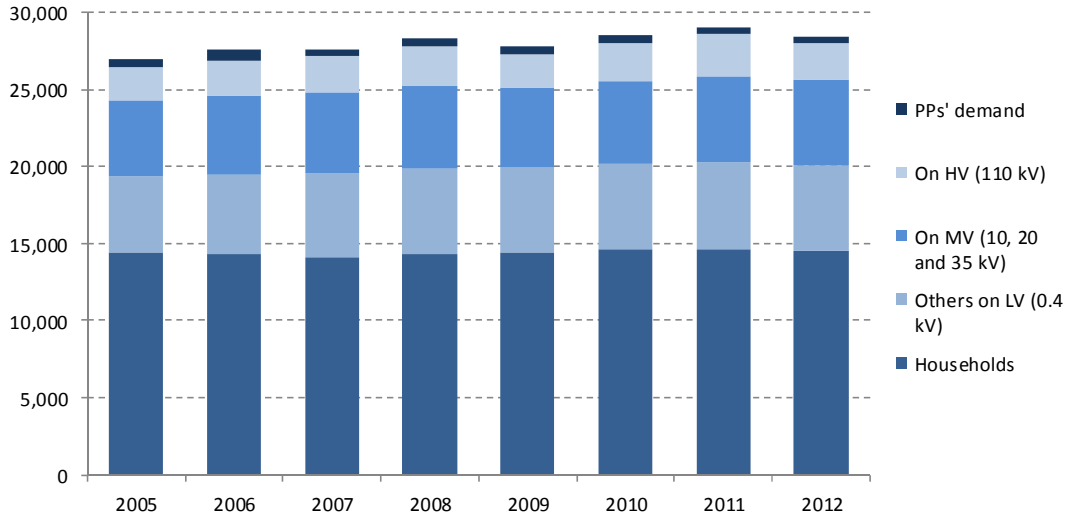

Figure 3-17: Electricity consumption structure in Serbia in the period 2005-2012 (without APKM)

Total number of metering points for customer delivery in Serbia without APKM (without Železnice Srbije/Serbian Railroad) in the end of 2012 amounted to 3,592,251. Compared to 2011, the number was increased by 1.5%.

Table 3-26: Number of metering points in 2011 and 2012

Consumption category	2011	2012	2012/2011 %
Households	3,152,940	3,207,385	101.7
Other customers connected to low voltage (0.4 kV)	382,553	380,647	99.5
Customers connected to medium voltage (10, 20 and 35 kV)	4,124	4,182	101.4
Customers connected to medium voltage (110 kV)	28	29	103.6
Total number of metering points	**3,539,645**	3,592,251	101.5

3.6.2 Balancing market of electricity

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

In technical terms, balancing was realized in line with the Transmission System Code and “Contract on System Services, Procurement and Delivery of Emergency and Balanced Electricity” for 2012 which was concluded with the PE EPS via activating secondary regulation and issuant warrants for the engagement of tertiary regulation, based on a list of priority engagement. Tertiary regulation was activated in line with the schedule of engagement of production capacities which was submitted by PE EPS to the transmission system operator (PE EMS). Emergency exchange was done 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 Electricity Transmission Use-of-System Charges”.

On the basis of the obligations of all electricity market players to keep electricity production, consumption and exchange in balance, PE EMS implemented compulsive balancing of those market players whose daily operations plan after harmonisation process became imbalanced. Based on this, in 2012, PE EMS delivered 870 MWh to market players and withdrew 190 MWh from them.

Electricity Market Rules, which regulates the balancing electricity market in more details, was completed in 2012 and entered into force in December 2012.

3.6.3 Organised electricity market

Pursuant to the Energy Law and the commitments arising from international agreements, organisation and administration of the organised electricity market and making connection between it and organised electricity markets of other countries is performed by the market operator. Market operator's organisation and operation, conditions and the manner of business operation of players within the organised electricity market and other conditions which provide for electricity market functioning in line with the law is regulated in more detail by the Government of the RS. Until the day the regulations on this enter into force, market operator's activities operations will be performed by PE EMS, as the energy entity holding the licence for electricity market organisation on the day the Energy Law enters into force.

In 2012, preparation activities on the establishment of the organised market were continued, based on a feasibility study and the action plan which were previously developed and adopted.

3.6.4 Common activities on the 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 2012, the results of the study which was ordered by the Energy Community were presented. The study was related to the recommendations for regulatory incentives for the construction of new cross-border transmission capacities in the southeastern Europe (SEE) and the recommendation on the manner of billing balancing deviation.

The transmission system operators of the SEE continued the realization of the Regional Action Plan for Electricity Market Opening in the Southeast Europe, which 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 codes. However, the transmission system operators did not manage to comply with the above mentioned deadlines prescribed in the plan for 2012 due to disharmonized legislation between the Contracting Parties. For this reason, the Energy Community Regulatory Board asked the regional group for the Southeast Europe ENTSO-E to submit the details on the acknowledged obstacles so as these could be removed as soon as possible. Each Contracting Party to the EnC started drafting local action plans which, if duly prepared, will be the preconditions for the compliance with the requirements set in the Regional Action Plan.

Within the cooperation between the EnC Regulatory Board and ACER, an agreement was reached within ECRB on a follow-up on the participation of the Eighth Region[5] (countries of the Southeastern Europe) within the official quarterly ACER report, as an addendum which includes the report on the progress of the Eighth Region on realization of the Regional Action Plan which relates to cross-border issues. In 2012, ECRB approved the development of a quarterly report on the status of the mechanisms for the allocation of cross-border transmission capacities in the SEE.

In 2012, on the regional level, the activities on the appointment of the Project Team were continued. The Project Team will be entrusted with the task to establish an Auction Office for coordinated allocation of rights for the use of cross-border capacities in the southeastern Europe, in line with the mechanism which will be, for the beginning, based on the calculation of the value of the available transmission capacity. Upon the provision of the financial support from the donors, KfW and EBRD, in June 2012, the Project Team company was officially registered in Podgorica. In addition, the manager was appointed and the staff recruitment was arranged. The objective of the Project Team is to initiate the activities of the Auction Office in 2013 and to have the first annual auctions of the cross-border capacities in the end of 2013 for 2014. Most of regional transmission system operators will participate in the work of the Office. The Serbian and Bulgarian TSOs do not participate in the work of the Project Team for the establishment of the Auction Office for now.

A multi-year Pan-European contract between the transmission system operators on mutual cost compensation for the use of neighbouring transmission grids (ITC Agreement) was valid during 2012. It was signed on February 9, 2011 by 40 transmission system operators originating from 34 countries, among which is the Serbian transmission system operator PE EMS as well, with unlimited duration period and in line with the Guidelines for mutual cost compensation to TSO for the use of neighbouring transmission grids. In the end of 2011, PE EMS submitted to ENTSO-E the annexes to this contract related to the update of the data on losses, the list of all interconnection overhead lines, vertical consumption, and contacts as the compliance with the Guidelines for Congestion Management.

[5] 8th region includes the Energy Community Contracting Parties, together with six neighbouring countries to the Parties (Bulgaria, Greece, Hungary, Romania, Slovenia and Italy for interconnection overhead lines with Adhering Contracting Parties). It was established so as to implement a common procedure for congestion management and allocation of transmission capacities on the regional level.

Market of balancing energy

In 2012, the ECRB continued working on the dictionary of balancing terms so as their meaning could be harmonised in the whole region, which is one of the preconditions for the establishment of the regional balancing energy market. Within the studies which were ordered by the Energy Community, in 2012, the consultant worked on a study on recommendation for the method of balancing settlement.

Market monitoring

In 2012, ECRB considered the supplements to the Guidelines for regulatory market monitoring in the southeastern Europe in terms of inclusion of generation indicators. The Guidelines include a detailed description of the indicators based on which one can estimate whether the market is functioning in line with the adopted rules and based on the priciples of transparency and non-discrimination. In the beginning, these guidelines would only include the recommendations to the regulators in the region for the collection of necessary sets of data for the supervision of cross-border parameters in our region. Afterwards, these recommendations would also include other parameters for market monitoring, in line with the achieved level of market openness and development and the availability of the data. The enforcement of these guidelines is aimed at the establishment of a harmonised approach to regulatory tasks and the introduction of an option for regional market monitoring. These guidelines would not be legally binding. In 2012, the consultant made a demostration of the software based on Internet access, which will serve for regulatory purposes of national operators monitoring, but for regional monitoring as well, for different time horisons. In addition, a software testing on rotation principle was launched. In line with this, every month another regulator from the Eighth Region performs software administration, with the consultant's assistance. It is done so as to provide training and have better insight into the reporting and regional market monitoring functions.

Supplier switching

In 2012, the ECRB initiated the development of the Recommendations for the best practice in the supplier switching procedure within the Energy Community. Starting from the main provisions of the Third energy EU package and the overview of the current situation in terms of the supplier switching procedure in the EU member states, the countries with the best practice were identified. In the identification procedure, many criteria were taken into account. Some of them are the following: the regulatory framework development level, market conditions, social-economic and regional criteria, as well as the criteria related to the supplier switching procedure and its adaptation to the customer. The supplier switching practice in the Czech Republic was recognised as the best one, bearing in mind all the analysed criteria. Comparing the Czech model with the existing practice in the switching procedure in the Contracting Parties to the Energy Community, existing differences were identified. Based on them, main recommendations which relate to the establishment of concrete steps which should be taken so as to harmonise with the best practice were given. The implementation of these guidelines is aimed at harmonisation of the supplier switching procedure in the Contracting Parties to the Energy Community and their compliance with the requirements arising from the Third energy package, so as a competitive retail electricity market cold be developed.

3.7 Monitoring and regulation of the quality of delivery and supply

The Agency initiated the development of the system for monitoring and regulation of quality of electricity delivery and supply by the establishment of information rules presented in tables for registering data and monitoring quality indicators which entered into force on January 1, 2009. Info rules are defined on the basis of international experience and existing practice of distribution companies on data collection. They were developed so as to harmonise the method of data presentation and calculation of indicators, in order to create the conditions for the establishment of a base of complete, reliable and comparable data on the indicators of quality. Thereby, these data could be compared and regulated. The four-year experience of companies and the Agency in data collection and following quality indicators will serve as a basis for the development of the rules on following technical and commercial indicators and on regulating the quality of electricity delivery and supply which will be adopted by the Agency in 2013.

The system for monitoring and regulating quality of electricity delivery is introduced in several phases, so as the necessary metering, information and organisation infrastructure in companies could be adjusted to the needs of customers and requirements of the Agency. Starting from the requirements arising from info code most distribution companies have taken the steps towards harmonisation of organisation structure and development of information support necessary for data collection, calculation of indicators and reporting on quality in the previous period.

Info code defined the type, scale and format of data on technical and commercial aspects of quality which should be collected by energy entities, as well as the deadlines for the submission of data to the Agency. Based on the collected data, the indicators of technical and commercial aspects of quality in electricity delivery and supply are calculated.

Technical aspects of quality include uninterrupted delivery which is characterised by a number and duration of interruptions in electricity delivery and the voltage quality on the delivery point. Commercial aspect provide for the assessment of the quality of attitude of the energy entity towards customers, i.e. service users within the procedure of connection, loadsheddings and disconnections, metering, billing and collection, removal of technical obstacles in delivery, response to questions and applications of customers.

3.7.1 Uninterruptibility of electricity delivery

So as to monitor delivery uninterruptibility, the energy entity performing transmission and energy entities performing electricity distribution delivery monthly reports to the Agency on regular basis on long interruptions, as stipulated by the established rules. For each interruption which lasted longer than 3 minutes, information are submitted on its beginning,

end and duration of the interruption, voltage level on the interruption point and power element which was left out without electricity, type of interruption depending on whether it was planned or not, as well as the number of customers whose supply was interrupted. The causes of unplanned interruptions are classified depending on which one of the following caused the interruption:

- System operator for whom the indicators are calculated;
- Other energy entity – system operator to which the relevant system is connected to or the power producer connected to it;
- Third party – legal or natural person who has caused the interruption by performing his activities;
- Animals – animal which has caused interruption by its activities;
- Vis major – occurrences, circumstances or occurrences out of system operator's control, which occur without the operator being able to predict, prevent or remove them, natural disasters – floods, earthquakes, landslides, landfalls, i.e. social events – war, terrorist acts and strikes as well as the decisions of authorities;
- Unknown – if the cause has not been proved;
- Other – if the cause of interruption is none of the ones listed above.

Based on the data on long interruptions which are registered in such a way by transmission and distribution system operator in the period 2009-2012, annual indicators of uninterruptibility of delivery in transmission and distribution network for planned and unplanned interruptions were calculated.

3.7.1.1 Quality indicators in the transmission network

Indicators of discontinuity of delivery in the transmission network which are calculated and followed 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 for the period 2009 - 2012 are given in Table 3-27.

Table 3-27: Indicators of discontinuity in delivery within the transmission network in the period 2009 - 2012

Interruptions		Power failure – undelivered power	ENS	ENS
		MW	MWh	%
2009				
	Planned	189	984	0.002
	Unplanned	3,589	1,525	0.004
	Total	3,778	2,509	0.006
2010				
	Planned	131	473	0.001
	Unplanned	2,790	1,418	0.004
	Total	2,921	1,891	0.005
2011				
	Planned	392	1,875	0.005
	Unplanned	3,212	3,364	0.008
	Total	3,604	5,239	0.013
2012				
	Planned	129	757	0.002
	Unplanned	2,390	1,395	0.004
	Total	2,519	2,152	0.005

The values of the most frequent indicator of discontinuity within the transmission network AIT are given in Figure 3-18, separately for planned and unplanned interruptions and in total.

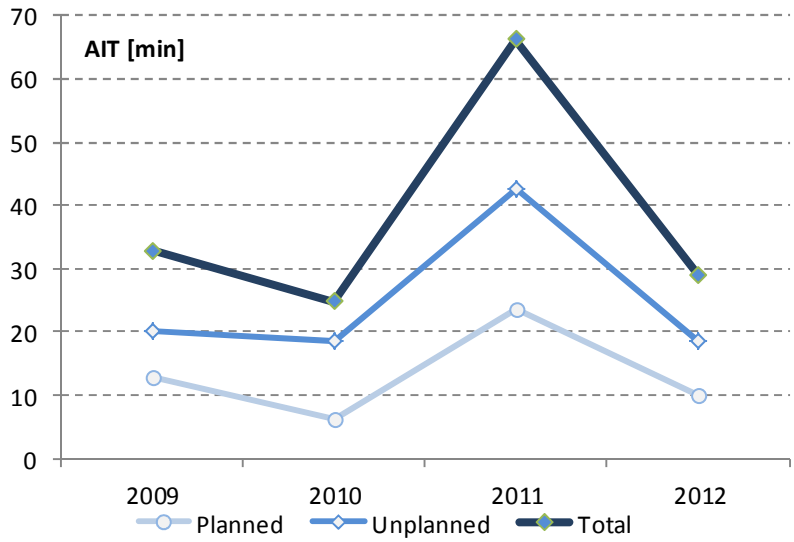

Figure 3-18: Average interruption duration

Based on given values, one can notice that the quality of delivery in 2012 was back on the 2010 level, after it grew in 2011 upon an unusual occurrence. The values of the unplanned interruptions are mainly caused by interruptions, as it is indicated in the Figure 3-19 where all the causes of unplanned interruptions and their share in the undelivered energy due to unplanned interruptions in 2012 are given.

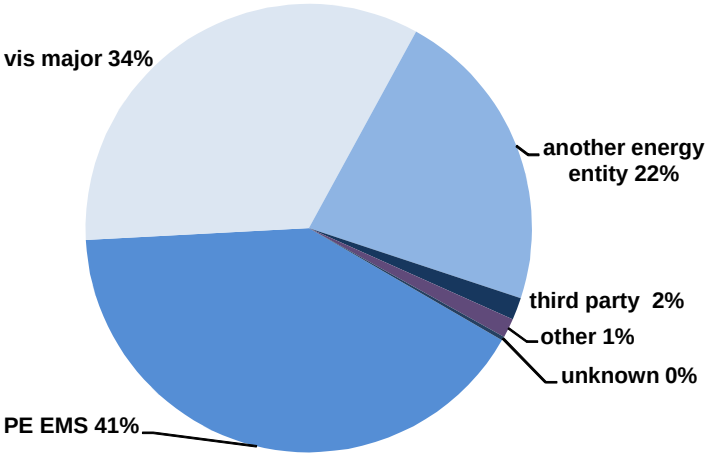

Figure 3-19: Causes of unplanned interruptions

3.7.1.2 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 the period 2009 - 2012, calculated in this manner, are given in Figure 3-20, both for planned and unplanned interruptions and in total.

In 2012, the discontinuity indicators values did not change substantially on the level of Serbia. Average number of unplanned interruptions was on the same level, while the average duration of the unplanned interruptions was increased in comparison to 2011. Average number and duration of planned interruptions decreased a bit.

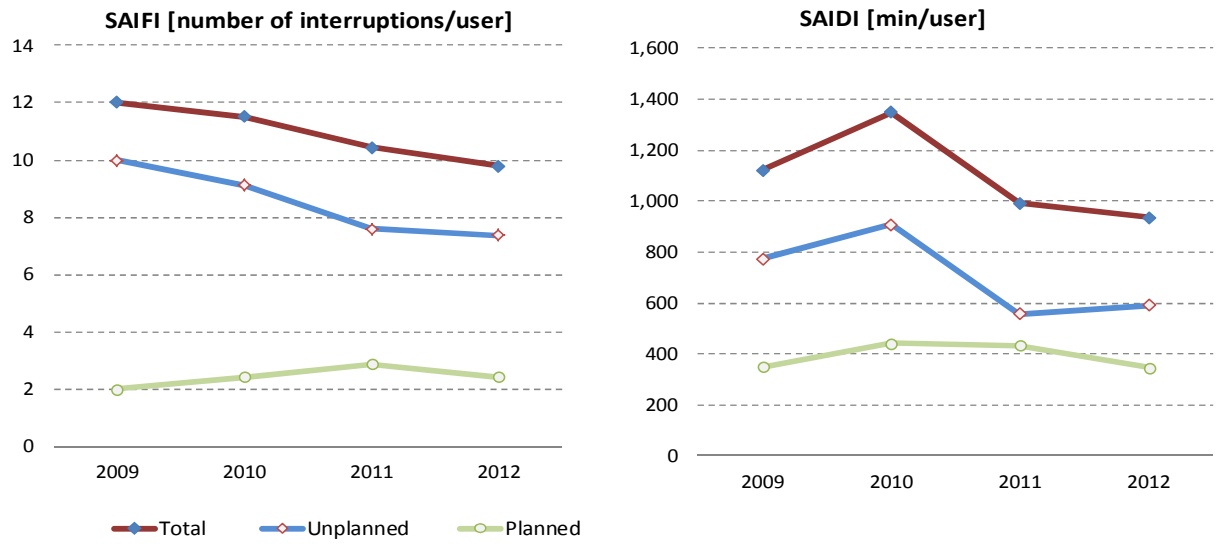

Figure 3-20: SAIFI and SAIDI for the period 2009 - 2012

The values of uniterruptibility indicators in Serbia are on the level of indicators within the Energy Community. However, they are several times higher than the values of uninterruptibility indicators in CEER countries whose indicators are given in the "Fifth Benchmarking CEER Report on the Quality of Supply"[6]. It indicates the need to improve the uninterruptibility of delivery via activities of distribution companies aiming at the improvement in grid development and maintenance planning, distribution system and interruptions management, as well as of the development of regulatory framework so as to reduce the number and duration of interruptions.

The reasons for unplanned interruptions and their ratio in the total number and duration of interruptions are indicated in the Figure 3-21.

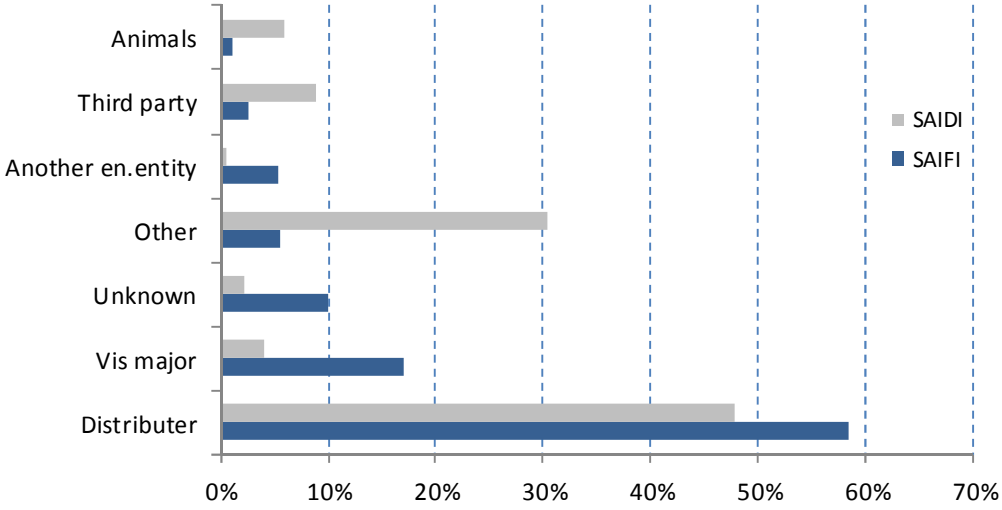

Figure 3-21: Share of causes of unplanned interruptions in SAIFI and SAIDI for 2012

With reference to the number of unplanned interruptions, there was a great number of these due to force majeure, unknown causes and the so called other causes which include the causes which were not recognised in the existing classification. In terms of the duration, it is long if caused due to other causes, third party causes and animals, in comparison to the number of interruptions which were caused by those. In particular, the duration of other interruptions is striking, i.e. their share in the total duration amounts to over 30%. It indicates the need to identify the cause of interruption in a more efficient manner, to define and register interruptions, so as adequate measures could be taken to remove the causes of interruptions and reduce their duration.

In terms of planned interruptions, each of the causes of interruptions has approximately the same influence to the total number and duration of planned interruptions. The most common cause of planned interruptions are works on one's

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

own distribution network, with the share in total number and duration of interruptions of around 95%. Apart from this, the works in the transmission grid have the 3% share, works on the customer's facility slightly more than 1%, and the works in the neighbouring distribution network less than 1%.

The share of interruptions of certain duration in the total number of interruptions, as well as the share of occurrences causing interruptions of certain duration in the total number of occurrences causing supply interruption are given in Figure 3-22 for unplanned interruptions and in the Figure 3-23 for planned interruptions.

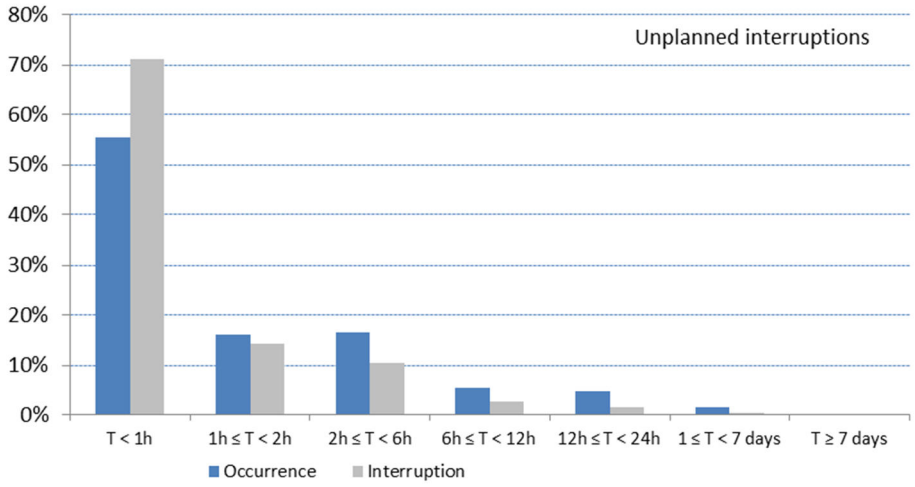

Figure 3-22: Share of occurrences/interruptions depending on the interruption duration – for unplanned interruptions

The figure indicates that the greatest number of unplanned interruptions lasted shorter than 1 hour, and for each longer interruption, the number of unplanned interruptions was decreasing. Similar dependence is indicated with occurrences causing unplanned supply interruptions, while the number of occurrences causing interruptions which lasted between 2 and 6 hours was somewhat greater in comparison to the number of occurrences causing supply interruptions which lasted between 1 and 2 hours. In case of planned interruptions, there is a strikingly great number of occurrences causing interruptions which lasted between 2 and 6 hours as well as the number of these interruptions which indicates the need to improve the system for interruptions management and the need to plan the maintenance works in a more efficient manner.

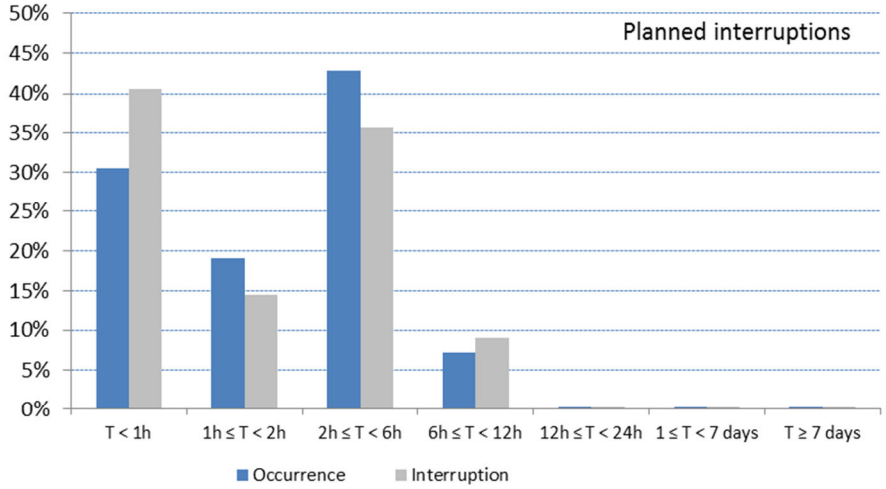

Figure 3-23: Share of events/interruptions depending on the interruption duration – for planned interruptions

3.7.2 Voltage quality

In 2012, a substantial progress was made in the field of voltage quality, i.e. in standardization, by publication of the Serbian standard SRPS EN 50160:2012 by the Institute for Standardization of Serbia. This standard is identical to EN 50160:2010, which represents the main instrument for regulation of voltage quality in Europe and, as such, it is binding, by its inclusion into the legislation of almost all European countries. Bearing this in mind, one can expect the development of legal framework and practice in terms of metering, monitoring and regulation of voltage quality in line with the practice presented in the benchmarking report and *Guidelines of Good Practice on the Implementation and*

Use of Voltage Quality Monitoring Systems for Regulatory Purposes which was published by CEER and ECRB, in Serbia in the future.

3.7.3 Commercial quality

In 2012, so as to monitor commercial quality, public enterprises dealing with electricity distribution submitted quarterly reports to the Agency regularly. They also submitted the final annual report on the provision of services such as connection, loadsheddings, disconnections, metering, billing removal of technical disruptions in delivery and response to questions and applications of users in user centers (call centers), in a scale and format defined by the Agency. In line with the Agency's requests, regular annual report on commercial quality was also submitted by the transmission system operator.

The experience in monitoring quality of service on both national and international level indicates the need to make further improvements of the regulatory framework and practice in registering, grouping, supervision and regulation of indicators of commercial quality so as more accurate and complete data could be provided. The data are used for calculation and comparison of indicators, in particular, average timeframe for certain activities so as those activities could be regulated and thereby, improved quality of service. During the activities related to the improvement of quality of commercial services, their supervision and regulation, one should pay attention to the upgrade of the Customer Relationship Management – CRM.

Bearing in mind that the reliability and availability of the data on commercial quality are still not on a satisfactory level even on the international level, in the Energy Community in particular, comparison of realized indicator on national level with regional or international indicators cannot be done at the moment.

In 2012, there was a substantial engagement of distribution companies in order to submit complete data on commercial quality regularly. Thereby, we obtained the values of certain indicators of commercial quality on the national level for the first time. However, taking into account the manner of registering and data consolidation, as well as the method for calculation of indicators, the data on commercial quality have not reached the expected level of reliability and accuracy yet. The data were not fully developed and supported in terms of information system and their organisation. Therefore, additional steps should be taken in the future so as the submitted data could be improved. Despite all this, the values of certain indicators of commercial quality are listed below. However, they are only indicative, especially in terms of average timeframe for certain activities. For analytical purposes, the collected data were grouped in four main categories which were recognised in international practice as categories of biggest importance for customers among many aspects which describe commercial quality. They include:

1) Connection, loadshedding and disconnection;
2) Metering and billing;
3) Removal of technical obstacles in delivery;
4) Customer services.

3.7.3.1 Connection, loadshedding and disconnection

The quality of connection to the system provided by the transmission, i.e. distribution system operator is most often described as the time necessary for the completion of a certain activity within the connection procedure as well as in the percentage of completed activities in the given timeframe. So as to follow the quality, the system operators registered the data on the applications for connection to the system, based on which the indicators on settling connection applications in 2012 indicated in Table 3-28 were obtained.

Table 3-28: Connection applications by voltage levels

Connection applications			HV	MV	LV	Total
Number	of submitted applications		1	313	32,379	32,693
	Settled applications	Approving connection	1	238	24,695	24,934
		Denying connection	0	1	177	178
		Settled differently	0	33	5,505	5,538
		Total	1	272	30,377	30,650
		Within 30 days	1	138	21,917	22,056
%	Settled applications in comparison to the submitted ones		100	87	94	94
	Applications approving connection in comparison to the number of settled ones		100	87	81	81
	Settled applications within 30 days		100	51	72	72
Average time	Necessary for settlement – given in days		29	27	20	25

Connection to the system is followed by using the same indicators, while the reference timeframe for the connection was 15 days since the day all the conditions were met in line with the Energy Law.

Table 3-29: Connection of facilities by voltage levels

Connection		HV	MV	LV	Total
Number	of connected facilities	2	145	37,642	37,789
	of facilities connected within 15 days' period	2	103	24,994	25,099
%	of facilities connected within 15 days' period	100	71	66	66
Average time – given in days	Necessary for connection since the day all the conditions are met	No data	12	10	11

The indicators referring to the average time necessary for deciding upon connection application and connection are calculated on the basis of available groups of data which are incomplete, since some of energy entities were not in a position to submit the relevant data. Since the average time is the most common indicator in international indicators of quality of connection service, registry of data necessary for the calculation of average time should be improved:

- for settlement of connection application;
- for connection of users upon the compliance with all connection conditions and
- for connection of users since the moment of application submission.

During the procedure of loadshedding, i.e. disconnection, the most commonly used indicators include the average time for new connection upon the time the reasons for loadshedding/disconnection ceased to exist, i.e. upon unjustified loadshedding/disconnection as well as the average time for loadshedding/disconnection based on user's request. The data submitted by the distributor indicate that the average time for new connection upon the time the reasons for loadshedding/disconnection cease to exist, i.e. upon unjustified loadshedding/disconnection amount to 1 to 3 days by average. In case of loadshedding/disconnection upon customer's request, there were longer average timeframes which amount to even 16 days in some cases.

In 2012, there were 251,613 loadsheddings due to unsettled liabilities for electricity, which amounts to 7% of the total number of customers in Serbia.

3.7.3.2 Metering and billing

Extraordinary control of metering points upon customers' request was organized upon 95% of requests, while in 39% of these were irregularities which were removed afterwards in 96% of registered cases of irregularity.

Upon registering the disappearance, restraints or damage of meters, in 96% of cases, proper metering was provided within 2 days upon registration. Average time necessary to provide proper metering since the moment of disappearance, restraints or damage of meters within the categories of high, medium and low voltage amounted to between 2 and 3 days, while in mass consumption category average time amounted to between 1 and 8 days, depending on the distribution company, which was in average between 4 and 5 days.

In 2012, 1.12% out of total bill was corrected and this figure amounts to 42,400,922 of them. More than half of them were corrected to improper reading. The reasons for billing corrections and their share in the total number of corrected bills are given in Figure 3-24:

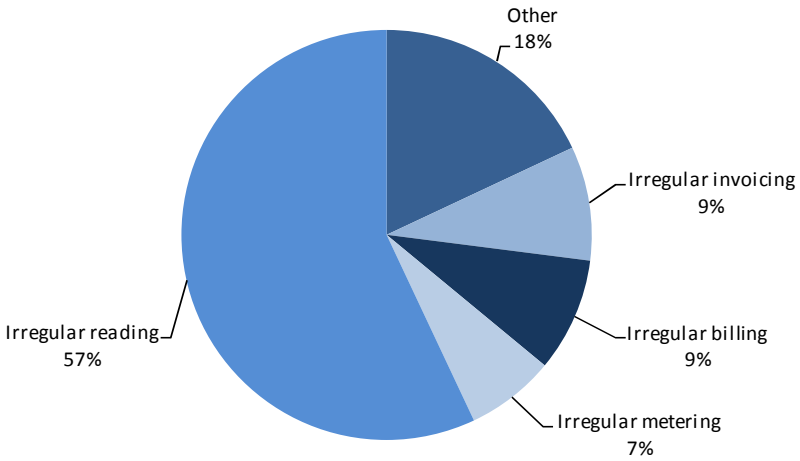

Figure 3-24: Reasons for bills correction and their share in the total number of corrected bills

Average time for settling complaints to billing amounted to between 5 and 6 days.

3.7.3.3 Removal of technical disturbances in delivery

The quality of removal of technical constrains arising from the delivery cut is indicated via delivery uninterruptibility indicators.

Removal of technical disturbances in delivery arising from voltage disturbances relate to the removal due to discrepancy of voltage and frequency from prescribed values, flickers, voltage accordion, unsymmetrical voltage which is repeated in long timeframe on the electricity delivery point. Since there is no systemic supervision of technical indicators of voltage quality on the delivery points within the system which would provide for a more realistic picture of the voltage quality within the system, supervision of the voltage quality via reporting voltage disturbances is an important indicator.

Out of the total number of customers' requests for the removal of voltage disturbances which are repeated in a long time frame, more than 70% of requests were justified. Voltage disturbances were removed in 80% of justified cases.

The average time during which the distributor removed the voltage disturbances upon customer's request, i.e. the time since the submission of the request until the moment the voltage is checked on the spot and the customer is informed amounted to around 5 days, while the average time since the voltage disturbances are registered till their removal amounted to between 16 and 17 days, as the data submitted by some distribution companies say.

3.7.3.4 Customer services

Customer services relate to the provision of information to the customers and the response of system operator and supplier to the requests of customers in user and contact centers (call centers).

Public enterprises for electricity distribution in 2012 made significant progress in terms of the implementation of modern Internet and mobile technologies (*web, Skype, email, sms, Facebook, twitter*) so as to improve customer services, such as:

- provision of data on planned interruptions,
- billing and collection (insight in the current situation, review and printing bills),
- consumption calculation, price lists, payment methods and bill,
- provision of information on electricity distribution services,
- reporting breakdowns, unauthorised consumption, metered consumption;
- polls among customers on the quality of service.

A substantial progress has been made in the improvement of call centers in some distribution companies, but the data on the services within these centers upon Agency's request are still unavailable in most cases due to inadequate information support for data supervision and registering. This is something one should also pay attention to in the future.

3.8 Security of electricity supply

Since 2000, through investments in revitalization and modernization, reliability and efficiency of units in thermal power plants and lignite mines which provide fuel for thermal power plants and partly for hydro power plants were increased. In the transmission network, too. The production in thermal power plants has been increased by over 25% since 2005. Their reliability reached 95.4%, which is comparable to the reliability and usage rate of such plants in the EU. In 2012, reliability of thermal power plants was on the same level as in 2011. Thereby, in comparison to 2000, even without new production capacities, security of electricity supply was considerably increased while the import demand was decreased.

General estimate says that the security of supply in 2012 was on a satisfactory level, except in February. In February, the Government of the Republic of Serbia introduced protection measures due to disrupted security of supply for the following reasons:

- extreme cold with temperatures of -20°C which caused daily consumption of over 162 GWh (for normal February condition, expected daily consumption amounts to around 140 GWh);
- problems in production and transport of coal meant for thermal power plants which were also caused by extremely low temperatures;
- due to long lasting drought, hydropower plants reservoirs amounted to 30% of maximum quantities, while the inflow in run-of-the-river hydropower plants was largely below the average ones;
- over 20 GWh per day of import was necessary, in comparison to the planned import of around 5 GWh;
- extremely low temperatures were forecast during February.

At the same time, there was disruption in the electricity market in the whole region:

- on February 8, 2012, the Bulgarian transmission system operator informed on suspension of electricity export as of February 10, 2012;
- on February 9, 2012, the Greek transmission system operator informed that the exprot from Greece is not fully available due to trade union strike and on February 13, 2012, they fully suspended electricity export;
- on February 10, 2012, the Romanian transmission system operator informed on limited electricity export as of February 10, 2012;

Due to reduced security of electricity supply, the Government of RS introduced several measures:

- on February 3, 2012, primary and secondary schools stopped working; industrial consumers were asked to reduce consumption; municipalities were asked to reduce public and decorative lighting, households were additionally informed on the necessity of making electricity savings;
- on February 8, 2012, some state-owned companies stopped operating and private companies were asked to either stop operating or reduce their consumption;
- the rights to already allocated cross-border capacities were suspended, and PE EMS was instructed to realocate 50% of capacities to PE EPS as the only final customers supplier in Serbia in the period between February 10 and February 29, so as to maintain physical safety of peope and system integrity.

Estimations said that without this last measure, households would be endangered by electricity load shed at extremely bad weather conditions. It is important to stress that thereby transit via PE EMS was not suspended since there were remaining 50% of cross-border capacities available.

In 2012, import reached 3.4% of annual demand and it was realized in January, February, March, November and December. Such a deficit was caused by the above mentioned unfavourable hydrological conditions which were present during the longest period of the year and extremely low temperatures in the beginning of the year. This is why the deficit amounted to 1,170 GWh instead of 494 GWh. Only in February, 501 GWh were imported. Total export in 2011 amounted to 251 GWh and it was realized practically only in April and May during the time of the highest production in run-of-river hydro power plants.

Transmission network did not present a limit to the security of supply.

On lower voltage levels, in deep layers of the distribution network, there were occasional low voltage occurrences and relatively common delivery interruptions. Investments in the distribution network in the past decade were insufficient and this is one of the reasons why this segment of the power system is in considerable delay in comparison to other segments.

3.8.1 Consumption forecast

Until 2025, one can expect electricity consumption growth in Serbia of below 1% 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. The unknown tempo of the economic growth makes the development of the consumption forecast more difficult and increases the risk for potential investors.

3.8.2 Generation adequacy

New power plants are necessary so as to cover the electricity consumption growth and so as to replace the power plants which, due to their long lifetime and inability to comply with environment protection requirements, will be shut down. PE EPS is either preparing or announcing further revitalization and modernization of existing power plants and the construction of new ones, which would be organised either independently or with strategic partners. Some other investors also announced the construction of new power plants. Ever greater share of the demand in the future will be covered by the use of renewable energy sources (around 3,100 GWh until 2020) in line with the National Action Plan for the Use of Renewable Energy Sources of the Republic of Serbia which is being prepared by the Ministry in charge of energy.

The most critical issue is the enforcement of the EU Directive on Large Combustion Plants, i.e. the ruling national legislation on the emission of sulphur and nytrogene oxides, which imply shutting down all the units in thermal power plants which do not comply with the given regulations after 2017. Thereby, PE EPS could lose capacities of over 1100 MW. Those are the oldest units in thermal power plants with the lowest level of efficiency in which the installment of desulphurization equipment is probably unjustified. However, these plants provide for over 15% of total generation at the moment. Bearing in mind that the neighbouring countries will be also faced with such limitations, it will not be possible to provide the missing energy from import. On the other hand, the plants which could fully replace those old plants cannot be constructed by then. This issue has both regional and EU dimension and the argumented proposals will be very important for the harmonisation and adoption of sustainable solutions on the regional, EnC and national levels.

Thermal power plants

The revitalisation and modernisation of the TENT B1, 620 MW, TENT A5, 320 MW and TPP Kostolac B1, 320 MW are planned in the coming years.

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

Power plants coal supply in Kolubara basin is a big problem within the thermal energy sector in the years to come, since new pits need to be opened so as to provide the supply for the existing and new thermal power plants. These new pits will also replace the pits with exhausted coal reserves.

In 2012, there was a follow-up of activities which should lead to the best solutions in the selection of the power plants which will be constructed and the selection of the financing model or strategic partners. The candidates which are considered are the following: CHP Novi Sad with gas-steam combined cycle with the 480 MW capacity, the thermal power plants which will be fuelled by local lignite - Kolubara B (2x375 MW), Nikola Tesla B3 (new unit of 740 MW), TPP Kostolac B3 (350 MW), etc.

The decision to construct the above given thermal power plants or other ones, as well as the future 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 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 2017;
- revitalisation of HPP Bajina Bašta, 364 MW, plant lifetime is to be expanded for another 30 years, with an increase in installed capacity of 52 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.

Apart from the revitalisation and modernisation of existing hydro power plants, the possibility to construct hydro power plants on Ibar and Morava, pumped storage hydro power plant Bistrica with capacity of 4x170 MW and hydro power plants Brodarevo in the River Lim is also considered.

3.8.3 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. The implementation of the given decrees is in the jurisdiction of the ministry in charge of energy issues.

Purchase prices for privileged electricity producers are given in the Table 3-30. These prices were implemented in 2012.

Table 3-30: Purchase prices for privileged electricity producers in 2012

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 to 2 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 power plants**		9.5
6.	**Solar power plants**		23
7.	**Geothermal power plants**		7.5
8.	**Combined cycle power plants fired by fossil fuels**		
8.1		Up to 0.2 MW	C_o =10.4
8.2		From 0.2 MW to 2 MW	C_o = 10.667–1.333*P
8.3		From 2 MW to 10 MW	C_o = 8.2
8.4	Existing infrastructure	Up to 10 MW	C_o = 7.6
9.	**Waste power 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* Γ/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 source" amounting to 27.83 RSD/ m3 G (RSD/ m3) – 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 source"	

Electricity quantities withdrawn from privileged producers in 2012 are indicated in the Table 3-31.

Table 3-31: Electricity withdrawn from privileged producers in 2012

MWh, %

Renewable energy sources/ Fuel for combined generation	2011	2012	2012/2011
Water flows	8,790	14,063	1600
Fossil fuels (coal, fuel oil and natural gas) – combined production	4,848	15,499	320
Biogas	118	6,335	5,368
Solar energy	1.3	81	6,231
Wind	0	207	
TOTAL	**13,758**	**36,185**	**263**

In line with the EnC Treaty, Contracting Parties are obliged to reach certain percentages of increased share of renewable energy in gross final energy consumption until 2020. Therefore, Serbia assumed the commitment to have 27% of gross energy final consumption provided from renewable energy sources (21.2% in 2009) in 2020. The Ministry

in charge of energy is preparing the National Action Plan and thereby set the manner and tempo for the achievement of this goal.

In the second half of 2012, the drafts of new decrees were prepared. The decrees were adopted in the beginning of 2013. They set new purchase prices for privileged producers for 2013 (the documents are available on the website of the Agency www.aers.rs). Thereby, the regulatory framework and the conditions for investments in such projects were improved substantially.

The Agency has no specific authority in the field of renewable energy sources, except for licence issuance for the facilities with installed capacity of 1 MW or more.

3.8.4 Construction of new transmission capacities

Transmission system operator is obliged by the Energy Law to adopt a transmission system development plan every year for the following 10-year period. The development plan is based on the amended version of the former one, in line with new insights and requirements, bearing in mind the experience in transmission network operation and maintenance. The plan is being harmonised with the plans of neighbouring distribution and transmission system operators. 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.

The transmission system development plan for the period from 2012 till 2021 was prepared and submitted to the Agency in 2012. Generally, it was harmonised with the provisions of the Energy Law. However, some of the elements of the document should be improved and further harmonised with, among others, the criteria of the ENTSO-E. It should be also adjusted to the new ten years' period. The existing document is a good basis for the ten years' plan which should be submitted to the Agency by the system operator in 2013.

In 2012, the following works were completed/executed within the transmission system:

- On overhead lines
  - Completion of works on the construction of overhead lines (OHL):
    - OHL 400 kV TS Leskovac 2 – border to Macedonia;
    - OHL 220 kV No. 253/2 TS Pančevo 2 – HI Pančevo, connection to TS NIS;
    - OHL 220 kV No. 294 AB TS Belgrade 5 – TS Obrenovac, adaptation;
    - OHL 220 kV No. 205/2 TS Kruševac 1 – TC Podujevo, adaptation;
    - OHL 2x110 kV No.104/5 Inđija – Stara Pazova, connection to in TS Inđija 2;
    - OHL 110 kV No. 169 TS Bor 2 – TS Bor 3, repairs of the tower No. 7;
    - OHL 110 kV relocation of the OHL dislocation of the OHL due to Y branch of the highway – Corridor 10,
    - OHL 110 kV No. 1190 TS Vranje 1 – Trgovište, reconstruciton;
    - OHL 110 kV No. 168 Vranje 1 - Ristovac, connection to Vranje 2;
    - OHL 110 kV No. 169 Bor 2 - Bor 3, repair of the tower No. 7;
    - OHL 110 kV No. 121/1+1180B Belgrade 2 - Belgrade 22, repair of the tower No. 169,
    - OHL 110 kV No. 117/2 Belgrade 35 – Kolubara, repair of the tower No. 67.
  - On the following overhead lines (OHL):
    - OHL 2x110 kV No. 106 AB TS Valjevo – HPP Zvornik, repair of the fractions f, c, b and d;
    - OHL 110 kV No. 121/1+1180 B, repairs of the tower No. 69.
- Contracting works on overhead lines (OHL):
  - OHL 220 kV No. 213/1 TS Bajina Bašta – TS Obrenovac, adaptation;
  - OHL 2x110 kV Belgrade 20 – Belgrade 3;
  - OHL 2x110 kV Belgrade 20 – Belgrade 19;
  - OHL 110 kV No. 101AB Belgrade 3 – Kostolac;
  - OHL 110 kV No. 106AB Valjevo – Zvornik;
  - OHL 2x2x110 kV TS Kragujevac 1 – TS Kragujevac 8, enabling connection and reliable supply to TS FAS.
- On transformer stations (TS):
  - Contruction of new facilities:
    - TS 400/110 kV Belgrade 20 – construction of the second phase of the first stage;
    - TS 400/110 kV Vranje 4, I phase of construction.
  - Reconstruction:
    - TS 220/35 kV Bajina Bašta;
    - TS 220/110/35 kV Belgrade 5;
    - TS 220/110 kV Belgrade 3;

- TS 110/35 kV Zaječar 2 (installement of a new transformer T1);
- TS 400/220/110 kV Niš 2 (equipment for the overhead line bay 110 kV No. E13 and E15);
- TS 400/110 kV Jagodina 4 (installement of a new transformer T1);
- TS 400/220 kV Obrenovac – installement of an energy transformer T3;
- Switching station 400 kV Đerdap – replacement of HV equipment;
- Adaptation: TS 400/220 kV Obrenovac (replacement of HV equipment, replacement of the earthing system in TS and construction works in switching station of 400 kV and switching station of 220 kV).

▪ Development of complete technical documentation, announcement of works and the submission of application for an approval of works:

- TS 400/110 kV Bistrica, (construction of a new facility);
- TS 220/110 kV Srbobran, (construction of switching station 400 kV);
- TS 220/110 kV Smederevo 3, (construction of switching station 400 kV);
- TS 220/110 kV Kruševac 1, (reconstruction);
- TS 220/110 kV Kraljevo 3 - (construction of switching station 400 kV),
- TS 400/220/110 kV Leskovac 2 – reconstruction and installement of a transformer T1 300 MVA;
- TS 400/220/110 kV Pančevo 2, - reconstruction of bus bars 110 kV.

In 2012, planned works on the reconstruciton and adaptation of the following facilities were completed:

- Switching station 400 kV Drmno – circuit breakers were replaced in generator and coupling bay;
- TS 110/35 kV Belgrade 4, replacement of transformer T1;
- TS 110/35 kV Vranje 1 – relocation of auxiliary supply transformer and installing equipment of 35 kV bay for underground cable (direction TS Vranje 4) and
- TS 110/35 kV Raška, equipment for overhead line bay 35 kV.

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 follow-up on the construction of the TS 400/110 kV Belgrade 20, of installed capacity 2x300 MVA was set as a priority in further development of the 400 kV transmission network, since it is a necessary for secure supply of central Belgrade areas. The construction of the overhead line 400 kV TS Kragujevac 2 – TS Kraljevo 3 is also important. It will contribute to the increase in security of the hub TS Bajina Bašta and TS Niš 2 as well as of the whole 220 kV network between the two transmission facilities.

The construction of the new interconnection overhead line 400 kV TS Pančevo 2 – TS Rešica (Romania) is also important since it will contribute substantially to the security of the supply in the whole region.

Another important activity in the western Serbia is planned – increasing the voltage level of the network from 220 kV to 400 kV. In the first phase, it is planned to increase the level of the hub Bajina Bašta to 400 kV voltage level and to construct a new two direction 400 kV overhead line between TS Obrenovac and TS Bajina Bašta. In the second phase, the construction of 400 kV interconnection overhead lines between Serbia, Montenegro and BiH is being under consideration as well as the idea to strengthen the direction towards TS Požega and TS Bistrica since there is a plan to construct a new pumped storage HPP Bistrica of the installed capacity of 680 MW.

In terms of the transmission network of 220 kV voltage level, the PE EMS has a strategic plan to withdraw this network gradually, i.e. to increase its voltage level to 400 kV. However, until this is completed, there is a plan to construct TS 220/110 kV Bistrica and to increase the installed capacity in some of 220/110 kV transformer stations.

In terms of the development of the 110 kV transmission network, the Development Plan offers solutions for the existing areas with insufficient security of electricity supply, first of all, for the area of Raška and south Banat. The Plan also includes the solutions for connection diagram of overhead lines coming along the new transmission facilities, as it is the case of the cities of Belgrade and Niš. The Development Plan was harmonised with the distribution system operator's development plans, in compliance with the data submitted by electricity distributors to the PE EMS during the preparation of the Plan.

3.8.4.1 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 overhead line is commissioned in no load operation by the Republic of Serbia in the end of 2012. The two-direction overhead line of 400 kV between Romania and Serbia TS Rešica (Sokol) – TS Pančevo 2 is planned as well as the launch of the regional feasibility study for a new 400 kV interconnection between Serbia, BiH and Montenegro.

3.8.5 Distribution system operators' measures

In line with the new Energy Law, distribution system operator is obliged to adopt ten-year development plans, harmonised with the transmission system development plan and connection applications. In 2012, distribution system operators prepared the first drafts of ten-year development plans, which, upon Agency's requests, were hamornised with the transmission system development plans and the plans of neighbouring distribution systems. However, bearing

in mind their total content, the need to make further harmonisation and upgrade of these documents, including the plan of transmission grid development, as well as the time necessary for these additional activities, the procedure for Agency's approval has not been launched. The given documents present a very good basis for ten-year plans which are supposed to be submitted to the Agency for approval in 2013 by the system operators.

In order to compensate for the delay in investments, remove the drawbacks and improve system operations, a set of measures 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 business activities. A plan for delegation of 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 should be an integral part of the plan. Only Elektrovojvodina complied with this obligation in a satisfactory manner.

In 2012, the following works were either completed or initiated within the distribution systems:

- On OHLs:
  - 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 TSs:
  - Completed construction of 2 new TS 110/x κV and these connected to the transmission system, 8 new TS of 35/10 κV constructed;
  - Reconstruction and expansion of capacities was done on a certain number of existing TSs;
  - Although it was planned in line with the Law, overtaking TSs of 110/x kV which are currently owned by PE EMS has not been completed yet, but a working groups including distribution companies and PE EMS had a set of meetings during the year and they prepared the overtaking procedure which is expected to be realized during 2013;
- Metering and management:
  - Upgrade of metering devices and further development and introduction of remote reading system has not be done to the expected scale primarily due to unsuccessful tenders which prevented launching more numerous procurement procedures for new electricity meters.

3.8.5.1 Smart grids

There is an ongoing replacement of meters 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. In 2012, a tender was launched, but it was suspended because of appeals which were filed. For this reason, the procurement of a substantial number of new meters was postponed for the future.

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.

3.8.5.2 Reduction of electricity losses in the distribution grid

As it has been already mentioned, some of investment activities of the distribution system operators in 2012 (increased capacity of grid facilities, replacement of meters, dislocation of metering points) contributed to the follow-up of the already initiated, but still not intensive enough, trend of reduction of energy loss in grids and to the increase in collection rate. However, the scale of these activities was not sufficient and they did not match the level of losses and the need to cut the losses to an acceptable level in technical terms.

Future investment measures which should contribute to electricity loss reduction in distribution grid to a much greater extent include:

- construction of new network facilities, overhead lines and transformer stations;
- delegation of metering devices, switchboards, connection lines, installation and equipment in the switchboard and other devices within the connection in the facilities of existing customers and their operation in line with technical regulations and distribution system code;
- procurement and installation of new meters with most of customers;
- 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 basic 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 2012 is given in Figure 4-1.

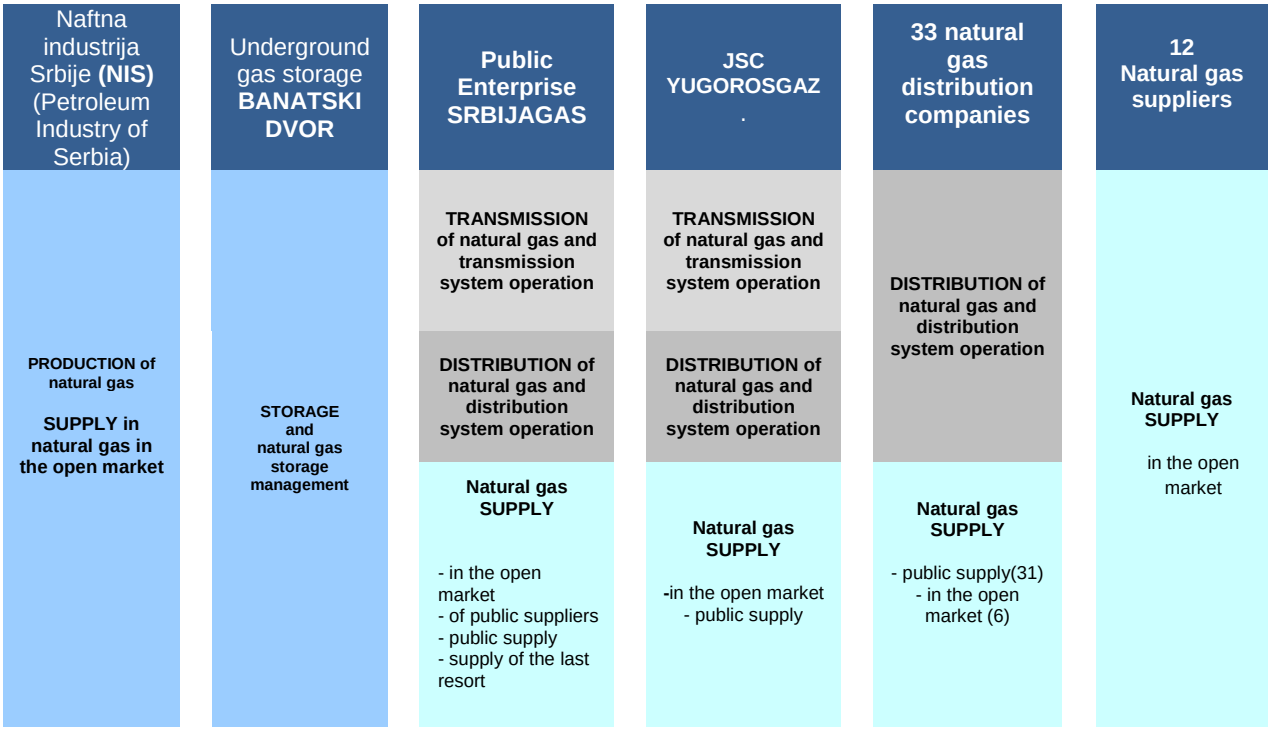

Figure 4-1: Organisational structure of the natural gas sector

Natural gas production is performed solely by Petroleum Industry of Serbia (Naftna industrija Srbije) (NIS JSC.). Natural gas production is not a regulated activity. 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 operation are performed by PE Srbijagas and Yugorosgaz JSC.

Distribution and distribution system operations are performed by PE Srbijagas, Yugorosgaz JSC and another 32 companies. Most of them are owned by municipalities and towns, some of them are public-private partnership, and some of them are private companies. Apart from these two distributors, there are six more holding the licence for supply in the open market as well. 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 Article 18 of the Law).

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 (Law on Agrrement Verification „Off.Gazette RS-International contract“, No. 83/08) in January 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 21 energy entities holding licences for trade in the open market, but only two of them were active – PE Srbijagas and Russian – Serbian Trading Company, RST.

PE Srbijagas is the dominant market player with 69% of share in total natural gas sales in 2012.

In 2012, the Government of the Republic of Serbia entrusted public supply as a universal service at regulated prices to 34 natural gas distributors. Only one distributor, who did not comply with the conditions, was not awarded with the public supply license. All the others were.

The Government of RS appointed PE Srbijagas, as a supplier in the open market, to perform the activity of the supplier of the last resort temporarily upon the tender procedure, as it was prescribed by the Law.

4.2 Unbundling energy activities and operator's independence

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

- activities which used to be separated 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 separately 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). In 2012, these licences were replaced by supply licences, i.e. public supply licences.

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.

Being the transmission system operators which operate within a vertically integrated company, both Srbijagas and Yugorosgaz are obliged to adopt a Program for the Provision of Non-Discriminatory Behaviour, the content of which was prescribed by the Law. In addition, they are obliged to appoint a person responsible for the supervision of implementation of this program. The Program is approved by the Agency. Both system operators are preparing for the changes in organisational structure thereby complying with the provisions of the Law on unbundling energy activities and, for this reason, they did not adopt the Program in 2012.

Table 4-1: Unbundling energy activities

	Transmission/ Production	Transmission/ Supply	Distribution/ 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	-**
Program for Non-Discriminatory Behaviour	-*	NO	-**
Appointed person for Program implementation	-*	NO	-**
Annual report on Program implementation	-*	NO	-**

* Transmission and production unbundled in terms of ownership
** This obligation is not applicable for distribution system operators with less than 100,000 final customers

4.3 Natural gas transmission, distribution and storing capacities

Natural gas transmission and distribution systems are developed in line with strategic documents and programmes of the Republic.

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 2012, the length of the transmission system of PE Srbijagas amounted to 2,273 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 2010-2012

Year	2010	2011	2012
Network length (km)	2,258	2,321	2,391

The energy entities performing transmission were obliged to provide automatic data collection on natural gas flows with the collection interval of 24 hours or shorter for all existing points of delivery from the transmission system until January 1, 2011. Gas transmission system has not been equipped so as to have such data acquisition on all delivery points so far.

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	2,273 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 fields – domestic gas	14	-
From the storage	1	
Number of exits from the transmission system	**160**	**-**
Metering and regulating stations on transmission system exit	158	4
Overtaking stations	2	-
Entry into Yugorosgaz transmission system	1	-
Interconnector towards Bosnia and Herzegovina	1	-

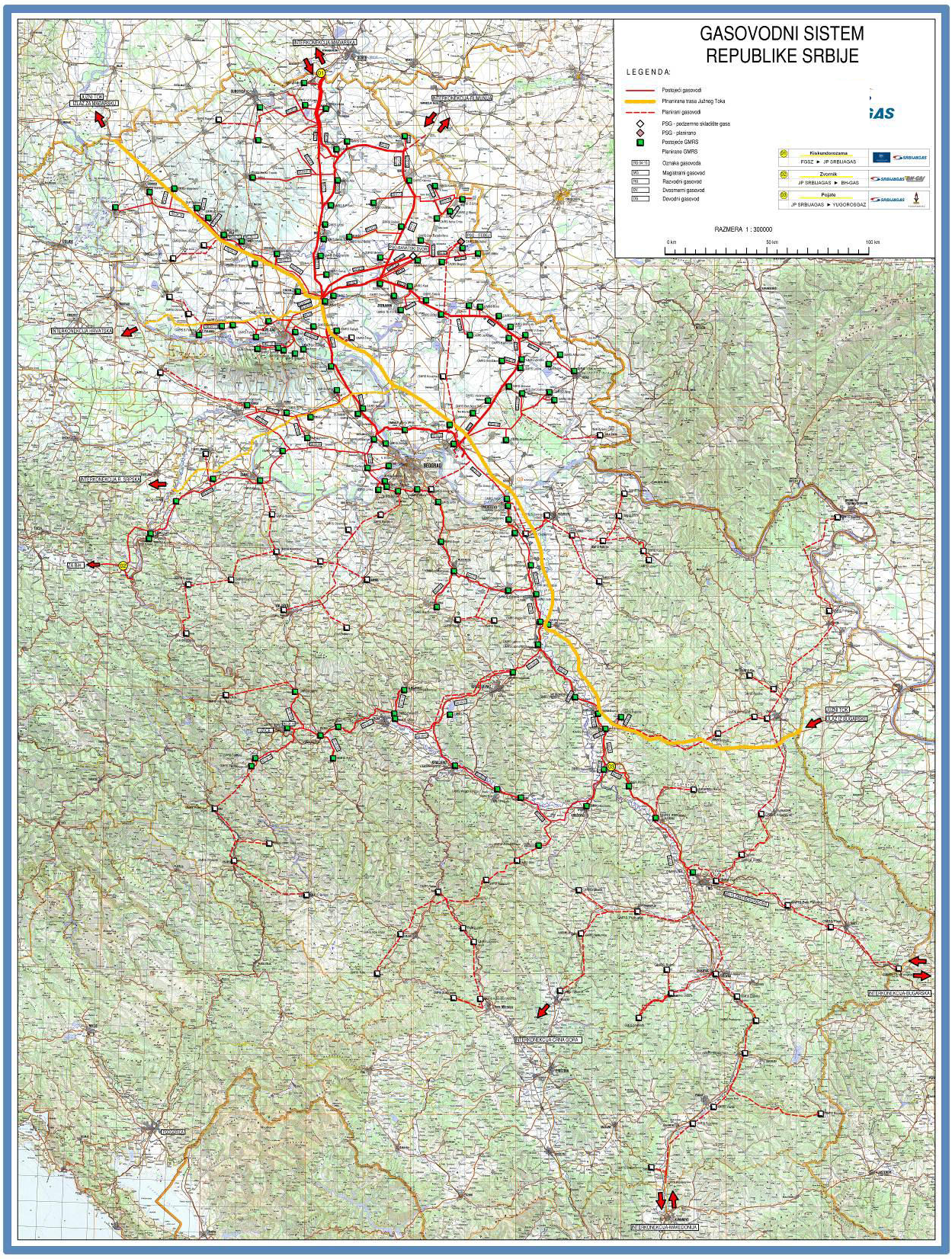

Figure 4-2: Natural gas transmission system of the Republic of Serbia

4.3.2 Distribution

The length of the distribution network has increased from 2010 to 2012 by 7.3%, i.e. to 15,348 km thus creating the conditions for the connection of new customers.

Table 4-4: Length of the distribution network in Serbia in 2010 - 2012

	2010	2011	2012
Length of distribution network (km)	14,299	14,628	15,348

Total length of the distribution network (without connections) in the end of 2012 amounted to 15,347 km. There are over 259, 000 of active connections (Tables 4-4 and 4-5).

Table 4-5: Length of distribution network and number of delivery points on December 31, 2012

No.	Natural gas distributor	Legal form	Distribution grid length (m)	Number of active connections
1	7. Oktobar, Novi Kneževac	PUC	49,652	1,593
2	Beogas, Belgrade	LLC	214,934	8,253
3	Beogradske elektrane, Novi Beograd	PUC	330,730	3,892
4	Boss petrol, Trstenik	LLC	24,084	23
5	Čoka, Čoka	PUC	27,195	805
6	Drugi oktobar, Vršac	C	198,040	12,589
7	Elgas, Senta	PE	64,400	1,757
8	Gas – Feromont, Stara Pazova	JSC	565,792	16,245
9	Gas – Ruma, Ruma	PE	447,012	6,957
10	Gas, Bečej	LLC	192,840	1,647
11	Gas, Temerin	PE	266,500	6,597
12	Graditelj, Srbobran	PUC	150,200	2,289
13	Grejanje, Zrenjanin	C	509,917	20,382
14	Ingas, Inđija	PE	357,091	9,338
15	Interklima, Vrnjačka Banja	LLC	103,477	951
16	Komunalac, Novi Bečej	PE	120,500	2,307
17	Kovin – Gas, Kovin	PE	333,094	3,988
18	Loznica - Gas, Loznica	LLC	125,640	1,243
19	LP - Gas, Belgrade	LLC	39,428	1,664
20	Novi Sad – Gas,Novi Sad	C	2,362,175	44,282
21	Polet, Plandište	PUC	239,300	3,694
22	Resava Gas, Svilajnac	LLC	47,721	315
23	Rodgas, Bačka Topola	JSC	185,884	1250
24	Sigas, Požega	LLC	19,977	278
25	Sloga, Kanjiža	JSC	171,300	4,004
26	Sombor – Gas, Sombor	LLC	171,000	1,719
27	Srbijagas, Novi Sad	PE	6,626,381	82,145
28	Srem - Gas, Sremska Mitrovica	PE	261,497	4,571
29	Standard, Ada	PUC	41,939	996
30	Suboticagas, Subotica	PUC	401,743	8,660
31	Toplana – Šabac, Šabac	PUC	159,454	2,161
32	Užice – gas, Užice	LLC	99,528	155
33	Vrbas – Gas, Vrbas	PE	182,668	1,617
34	Yugorosgaz, Beograd	JSC	256,589	604
	TOTAL		**15,347,682**	**258,971**

The share of the distribution network of PE Srbijagas in total length of distribution network amounts to 43%.

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 area 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 pipeline junction point in Gospođinci. The underground storage is connected by two gas pipelines to the gas pipeline junction point in Elemir.

Banatski Dvor storage was commissioned in November 2011. If the demand in storage capacities arises, the storage capacity may be extended to 800 million m^3. Bidirectional 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
- bar maximum working pressure: pmax=75
- maximum gas flow:
  - withdrawal UGS B. Dvor Q=415,000 m^3/h (10 million S m^3/day)
  - injection UGS B.Dvor Q=230,000 m^3/h (5.5 million S m^3/day)

This storage contributes to security of natural gas supply in Serbia.

In 2012, maximum technical capacity of injection was 2.8 million m^3/day and maximum withdrawal capacity was 5 million m^3/day. With reference to realized flows, maximum daily injection quantities in 2012 amounted to 2.48 million m^3/day and maximum daily withdrawn quantities recorded 3.94 million m^3/day.

In 2012, the cushion gas quantities were also increased, i.e. from 281 million m^3 in early 2012, they increased by 72 million m^3 (26%). Thereby, the cushion gas quantities in the end of 2012 amounted to 353 million m^3.

In 2012, storage users injected 389 million m^3 of commercial gas and withdrew 161 million m^3.

462 million m^3 of gas were injected from the transmission system into the storage, and 161 million m^3 were withdrawn into the transmission system.

4.4 Natural gas consumption and supply sources

In 2012, 1,999 million m^3 of natural gas were available from import, local production and underground storage. Local production amounted to 461 million m^3 did not change considerably in comparison to 2011 production and its share in total consumption amounted to 23%.

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 2012, natural gas import amounted to 1,398 billion m^3, out of which 705 billion m^3 from the Russian Federation in line with a long-term contract, while 643 million m^3 via other contracts, while 50 million m^3 were imported from Hungary.

Table 4-6: Natural gas supply sources and consumption in 2011 and 2012

	2011 Million m^3	2012 Million m^3	2012/2011 %
Production injected into transmission system	441	466	105.7
Production injected into distribution system	21	18	85.7
Total production	462	484	104.8
Import from the Russian Federation	1,624	705	43.4
Import from other sources	51	693	1,358.8
Total import	1,675	1,398	83.5
Quanities withdrawn from the underground storage	206	161	78.2
TOTAL AVAILABLE QUANTITIES	2,343	2,043	87.2
Natural gas producers' demand	18	23	127.8
Gross consumption	2,325	2,020	86.9
Transmission system losses and consumption	2	2	100.0
Distribution network losses	21	19	90.5
For final consumption	2,302	1,999	86.8

Bearing in mind energy entities consumption, non-energy related consumption and change of gas quantities in line pack, 2,004 million m^3 were sold to natural gas customers in total in 2012. It is over 13% less than in 2011. Consumption in households dropped by around 7% and in industry by 21%.

Consumption structure for three customer categories is given in Table 4-7.

Table 4-7: Consumption structure in 2011 and 2012

Consumption category	2011 Million m^3	2012 Million m^3	2012/2011 %
Households	264.7	245.2	92.6
District heating companies	539.4	569.9	105.7
Industry and other	1,508.1	1,189.2	78.9
Total	2,312.1	2,004.2	86.7

The number of natural gas customers in 2012 was increased by 1,826 in comparison to 2011 and in the end of 2012, it amounted to 258,971. 247,387 or 95.5% are householeds, which means that only around 10% of households have gas connection. Households consumption accounts for only 12% of final consumption in 2012. Disctrict heating companies consumption accounted for 29%, while industry and other customers covered 59%.

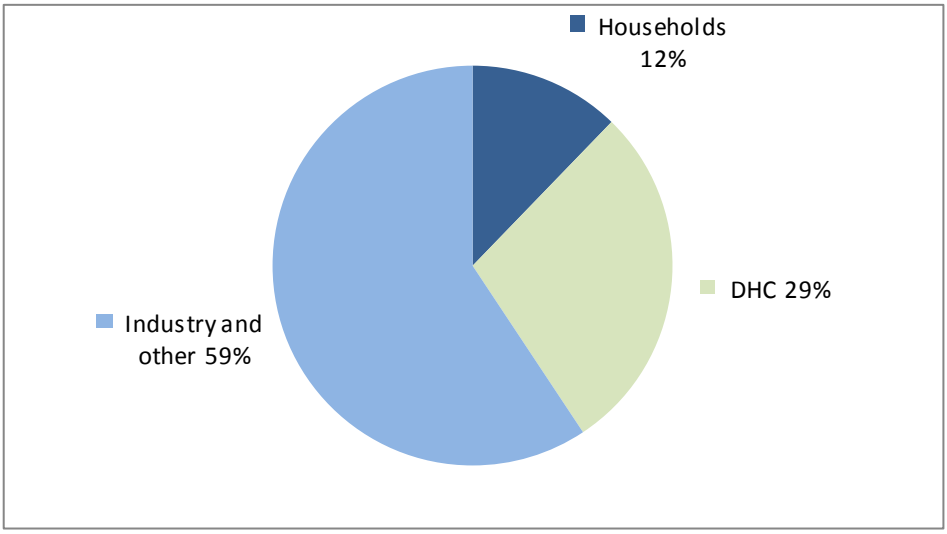

Figure 4-3: Structure of natural gas consumption in Serbia in 2012

Table 4-8: Number of customers in 2012

Consumption category	Number of customers
Households	247,387
District heating companies	68
Industry and other	11,516
Total	258,971

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 operation and the quality of natural gas delivery;
- safe transmission system operation;
- transmission system operation;
- 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, 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.

The most important activities of the transmission system operator in 2012 which provide the compliance of its work with the commitments arising from the Law and natural gas market opening are as follows:

- preparation of the transmission system code (network code);
- preparation of the 10 years' transmission system development plan and its harmonisation with the distribution system development plan and applications for the connection of producers' facilities and customers' facilities;
- monitoring security of supply and submission of the data which are to be incorporated into the report on security of energy supply prepared by the Ministry;
- exchanging information necessary for safe and secure operations of the system with other system operators;
- submission of the data and documentation necessary for price regulation to the Agency and
- other activities which improve the security, efficiency and transparency of the 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 Natural gas Transmission System Code

PE Srbijagas submitted the proposal of the Natural Gas Transmission System Code to the Agency in September 2012. The Agency submitted the Opinion to the draft Code in December 2012. The code also includes the rules for the allocation of capacities and the rules on natural gas market operations. The Natural Gas Transmission System Code of PE Srbijagas is planned to be adopted in the first half of 2012, while the Code of Yugorosgaz JSC is planned to be adopted by the end of 2013.

4.5.2 Regulation of the transmission use-of-system charges

Regulated transmission use-of-system charges have been applied for the first time since October 15, 2008.

PE Srbijagas and Yugorosgaz JSC did not submit the proposals of new transmission use-of-system charges in 2012. The prices adopted in October, i.e. November 2011 were applied. The prices applied in 2012 are given in table 4-9.

Table 4-9: Transmission use-of-system charges in 2012

Ntural gas transmission operator	Тарифни став		
	Energy cource RSD/m^3	Capacity RSD/m^3/day/year	Energy source 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

The average PE Srbijagas transmission use-of-system charge amounts to 1.18 RSD/m3.

Pursuant to the Law, the Agency adopted the Methodology for Setting Costs of Connection to Natural Gas Transmission and Distribution Systems in May 2012. The transmission system operators were obliged to harmonise their acts on the connection costs level with this Methodology until November 30, 2012 at the latest. The enforcement of the Methodology was planned for January 1, 2013. The Methodology implies reduction of system costs arising from connection of the facility (DTS) which are borne by the applicant by 50%.

In September 2012, the Agency adopted a new Methodology for Setting Natural Gas Transmission Use-of-System Charges. It was aimed to create the conditions for the establishment of a single regulatory framework harmonised with local legislation and EU directives, which enables natural gas market development as well as the use of natural gas transmission system in a transparent and non-discriminatory manner. Two tariff elements were established: capacity and commodity, defined in line with the requirements of the Third EU Energy Package, i.e. there are separate tariff elements for different entry and exit points of the transmission system (entry-exit system). The tariffs are set for different entries and exits for firm and interruptible capacities and for different time intervals – year, month and day. A tariff for backhaul capacity was introduced, in case capacity is booked in a direction opposite to physical flow of gas. An additional tariff is introduced in case the transmission system user exceeds the contracted capacities. In addition, a charge is borne by the transmission system operator if he does not provide the capacity to the system user which was contracted as firm capacity, during longer than 5 days' period annually.

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 4-10: Harmonisation of PE Srbijagas and Yugorosgaz JSC activities with requirements of Article 8 of Directive 2003/55/EC

Tasks 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.	YES	YES	NO	-**

* Not covered by methodologies
** Not covered by development plan

4.5.4 Transmitted natural gas quantities

In 2012, 2,749 million m^3 of natural gas were delivered to Srbijagas transmission system. 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.

Table 4-11: Transmitted natural gas quantities in 2011 and 2012

	2011	2012	2012/2011
	million m^3	million m^3	(%)
Production	441	466	105.7
Entry into Serbia from Hungary to meet Serbia's demand	2,031	1,861	91.6
Entry into Serbia to meet Bosnia and Herzegovina's demand	283	261	92.2
Total	2,755	2,588	93.9
From storage	33	161	487.9
Transmitted quantities	2,788	2,749	98.6

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.

4.5.5.2 Allocation of capacity on interconnection lines and congestion management

Being the transmission system operator interconnected with other countries, PE Srbijagas is entitled to award capacities on interconnection gas pipelines. In 2012, 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. In 2012, there were no congestion problems, not even in

February, with the lowest temperatures statistically metered once in twenty years' time, when contracted capacities were used to their maximum on interconnectors, but, still, no congestions were registered.

In 2012, the utilisation rate of the entry continuous capacity on Serbian-Hungarian border amounted to average 45.6% with 540,000 m^3/hour (13 million m^3/day). In 2011, it amounted to 49.5%, 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 2012 amounted to 12.8 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 2005-2012.

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 operation and recover losses in the transmission system, in line with the principles of minimum costs, transparency and non-discrimination.

In 2012, system balancing is realised by changing nominated imported gas quantities and by using the linepack 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 natural gas demand on exit points exceeds the capacity contracted on entry points, the transmission system operator may suspend a part of capacity on the exit points to the customers who have an option to use alternative fuel so as to reach balance in the system. The transmission system operator interrupted around 4% of exit capacities during two days of February 2012. 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 delivered 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. The draft PE Srbijagas Natural Gas Transmission System Code prescribes the conclusion of an annual contract between the transmission system operator and a supplier who will provide the balancing service, i.e. who will withdraw extra natural gas within the system, i.e. deliver natural gas in case of shortage. Once the natural gas market is developed on daily level in Serbia, the transmission system operator will purchase the balancing service in the market.

4.6 Regulation of distribution system operator

In 2012, 35 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 took over some small distribution companies which could not survive, but the initiatives that would lead to enlargement are not strong enough. Upon price regulation, developed European countries faced the reduction of number of distribution companies, especially in natural gas sector.

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 to control the data necessary for price regulation.

Natural gas distribution system operator is responsible for:

- secure and reliable distribution system operation and the quality of natural gas delivery;
- safe operation 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 operation;
- accuracy and reliability of natural gas metering.

The most important activities of the distribution system operator in 2012 which provide the compliance of its work with the commitments arising from the Law are as follows:

- development of the price list for standard connections in the distribution system;
- taking prescribed safety measures during the use of distribution system;
- submision of the data which are to be incorporated into the report on security of supply to the Ministry;
- submission of the data and documentation necessary for public supply price regulation to the Agency and
- other activities which improve the security, efficiency and transparency of the system operation.

4.6.1 Distribution system code

The legal deadline for the submission of Distribution System Code to the Agency for approval is six months upon the publication of the Transmission System Code. Therefore, it is expected that the distribution companies will complete the Codes in 2013.

4.6.2 Regulation of the distribution use-of-system charges

In 2012, the distribution system operators did not submit the proposals for new distribution use-of-system charges. For this reason the charges which were approved by the Government of the Republic of Serbia upon positive assessment of the Agency in November 2011 were applied in 2012.

Average distribution use-of-system charge for all distribution networks in Serbia amounts to 2.3 RSD/m^3 (with the PE Srbijagas network), while it is 5.2 RSD/m^3 for all the other networks which do not include PE Srbijagas network. A big difference between expenses of certain distribution companies arises from different structure and number of customers, the size of the system, conditions for financing, correction element arising from more or less acknowledged costs from the previous period and other factors. However, the network use-of-system charges are much lower in Serbia than in European countries (see Figure 4-6).

The current natural gas distribution system use-of-system charges are available on the Agency's website (www.aers.rs).

Pursuant to the Law, the Agency adopted the Methodology for Setting Costs of Connection to Natural Gas Transmission and Distribution System in May 2012. The distribution system operators were obliged to harmonise the acts on connection costs with this Methodology until November 30, 2012 at the latest. Connection costs are billed in line with this Methodology as of January 1, 2013. The new Methodology provided for the reduction of a segment of system costs arising from the connection of the facility (DTS) which are borne by the applicant to the amount twice as low as the amount set in the former Methodology.

The Agency adopted a new Methodology for Setting Natural Gas Distribution Use-of-System Charges in December 2012. The amendments provided for the improvement of some of existing solutions and for further harmonisation of the methodology with both local legislation and the EU directives and thereby, conditions for natural gas market development are created. New groups of customers were defined; the method for calculation of capacities on delivery points without automating reading of delivered daily natural gas quantities was changed. The protection of the users of the distribution system which has a low usage ratio in the commissioning period was increased. The criteria for classification of delivery points into groups were defined according to: gas pipeline working pressure on the connection point, maximum capacity of the meter which is set by the act approving the connection of the facility to the system and annual uniformity in natural gas consumption. Within "Category 1", a new group "low consumption" was established and it includes households and small and medium size enterprises with the consumption of below 10 m^3/h. In addition, on the low pressure level, new groups of customers were introduced. Such groups exist on the medium pressure as well. These are: uniform, ununiform (peak) and off-peak groups and they will replace the former group, the so called "others". The aim was to make a more precise classification of the former consumption group "others", since there are district heating companies on the low pressure as well, as well as industrial consumers whose consumption largely depends on the season. Within the "Category 2", on the medium pressure, a new group was introduced, the so called "off-peak consumption" for consumers who use gas during the off peak period, while the "district heating systems" group was joined with the "ununiform consumption" group since they have the same consumption type.

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 4-12: Harmonisation of distribution companies with the requirements arising from the Article 12 of the Directive 2003/55/EC

System operator tasks (Article 12 Directive 2003/55/EC)	Methodology for use-of-system charges	Methodology for 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	YES	YES	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

* Not covered by the methodology

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 distributors. 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 2012.

Table 4-13: Distributed natural gas quantities in 2012

	Million m^3
Total distributed quantities	1,360
withdrawn from the transmission system	1,244
from distribution systems	97
from production facilities	19
losses	19
	1.4%

4.6.5 Regulation of prices of regulated natural gas supply

Pursuant to eh Energy Law, 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. In 2012, the prices which have been applied since November 1, 2011[7] were valid.

Natural gas purchase price has the greatest share in total retail gas price for final customers of 80-85%. 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 and not modified in 2012.

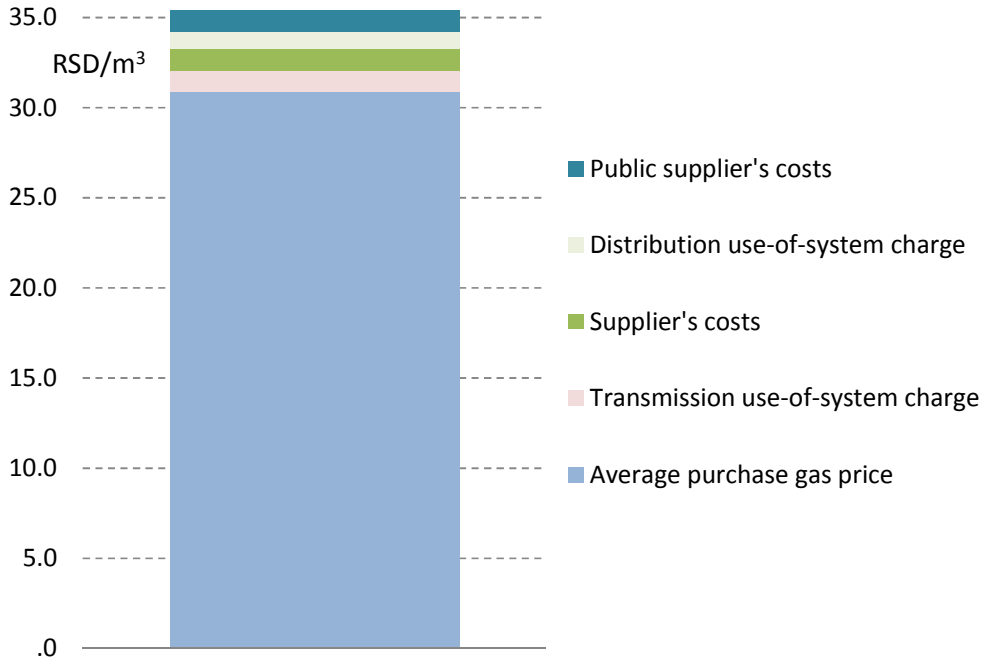

Figure 4-4: Structure of average retail natural gas price for PE Srbijagas tariff customers

Based on the data submitted by natural gas public suppliers, the average realized natural gas public supply price in 2012 is indicated in table 4-13.

[7] For gas customers connected to the network of distribution companies Boss Petrol, Trstenik, 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.

Table 4-14: Realised average retail price in 2012

RSD/m3

No.	Natural gas distribution company	Average retail price realized in 2012			
		Households	Other	DHC	Total
1	7. Oktobar, Novi Kneževac	41.6	39.7		40.8
2	Beogas, Belgrade	41.0	39.8		40.9
3	Beogradske elektrane, Novi Beograd	42.4	43.4		42.6
4	Boss petrol, Trstenik	38.7	40.7		40.7
5	Čoka, Čoka	45.5	40.5		42.7
6	Drugi oktobar, Vršac	43.8	40.1		41.6
7	Elgas, Senta	41.3	43.0		41.8
8	Gas – Feromont, Stara Pazova	41.1	39.4	37.7	40.5
9	Gas – Ruma, Ruma	42.2	38.8	38.8	40.1
10	Gas, Bečej	43.5	43.1		43.3
11	Gas, Temerin	41.8	41.3		41.7
12	Graditelj, Srbobran	45.2	41.8		43.5
13	Grejanje, Zrenjanin	44.3	43.3		44.1
14	Ingas, Inđija	41.4	39.1		40.3
15	Interklima, Vrnjačka Banja	41.8	40.7		41.1
16	Komunalac, Novi Bečej	42.7	43.1		42.8
17	Kovin – Gas, Kovin	41.2	37.6	37.7	38.7
18	Loznica - Gas, Loznica	38.8	37.5		37.8
19	LP - Gas, Belgrade	35.9	34.9		35.8
20	Novi Sad – Gas,Novi Sad	41.8	39.9	37.9	41.1
21	Polet, Plandište	43.1	41.5		42.2
22	Resava Gas, Svilajnac	40.4	36.9		37.7
23	Rodgas, Bačka Topola	41.6	38.3		38.7
24	Sigas, Požega	43.1	41.3		42.9
25	Sloga, Kanjiža	42.7	40.6		41.6
26	Sombor – Gas, Sombor	43.6	39.9	39.9	40.5
27	Srbijagas, Novi Sad	38.0	35.1	35.7	35.5
28	Srem - Gas, Sremska Mitrovica	42.6	38.8		40.0
29	Standard, Ada	42.2	43.3		42.8
30	Suboticagas, Subotica	42.1	39.9		40.7
31	Toplana – Šabac, Šabac	37.4	38.0		37.5
32	Užice – gas, Užice	42.6	39.6		39.7
33	Vrbas – Gas, Vrbas	41.8	40.4		40.7
34	Yugorosgaz, Beograd	37.9	37.0	36.4	36.6
	TOTAL	**40.7**	**35.8**	**35.8**	**36.5**

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 2012. 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 pay lower price than those in Serbia. This country has local gas share of more than 50% within the source structure

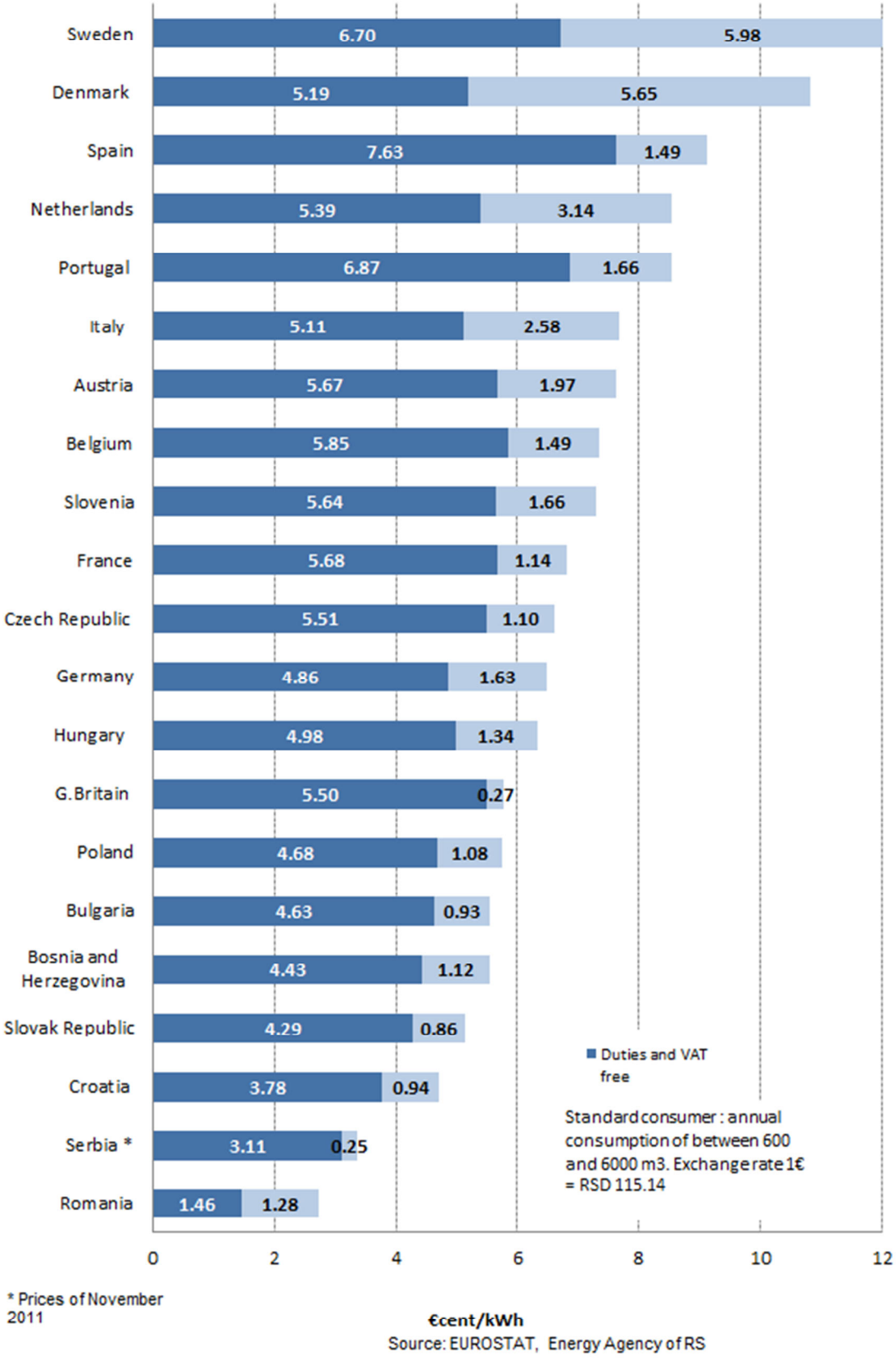

Figure 4-5: Natural gas prices for households – the second half of 2012

Figure 4-6 indicates a more detailed structure of elements of the natural gas household prices in some of European capitals in December 2012.

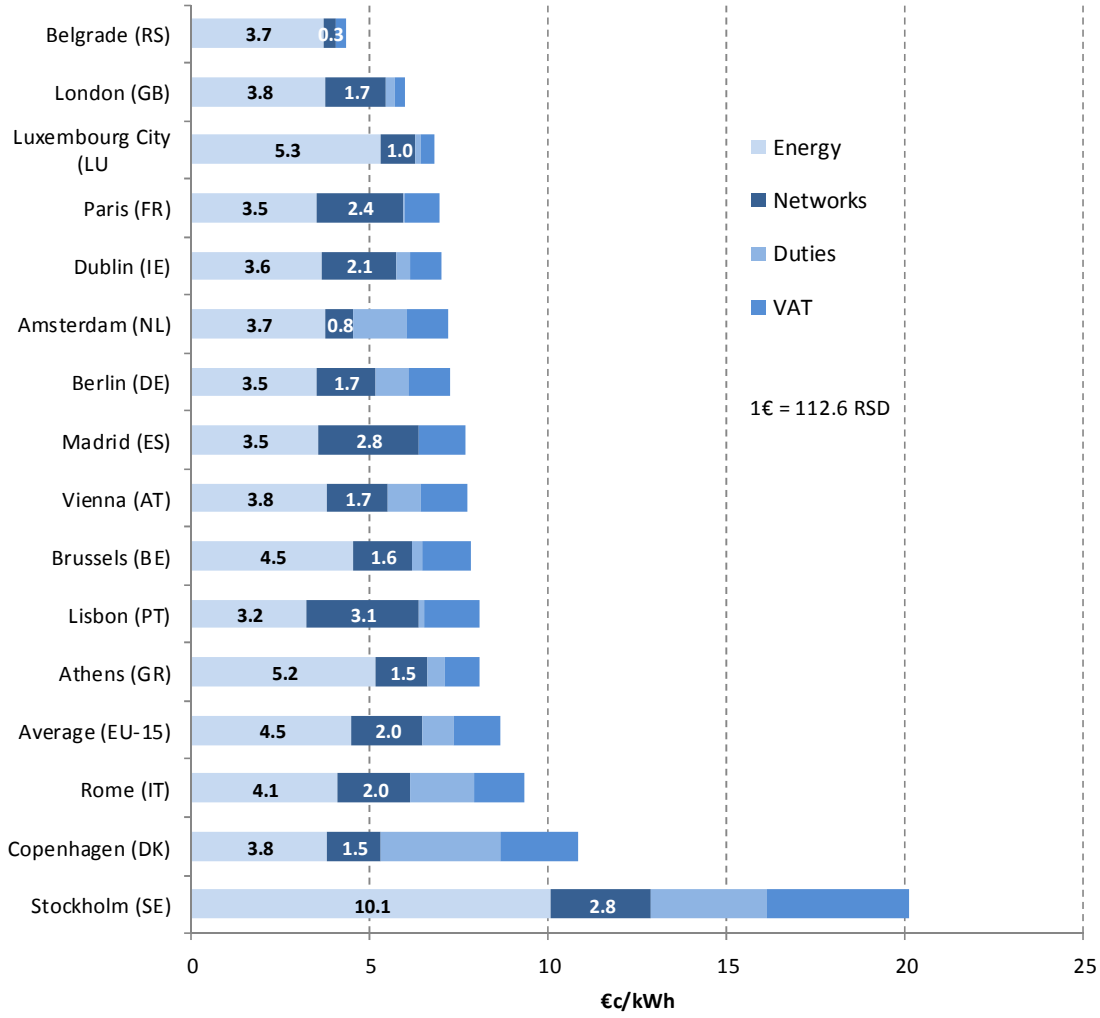

Figure 4-6: Structure of natural gas household prices in some of European capitals in December 2012

Figure 4-7 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 2012. In comparison to those in Serbia, lower prices are paid by industry in Romania.

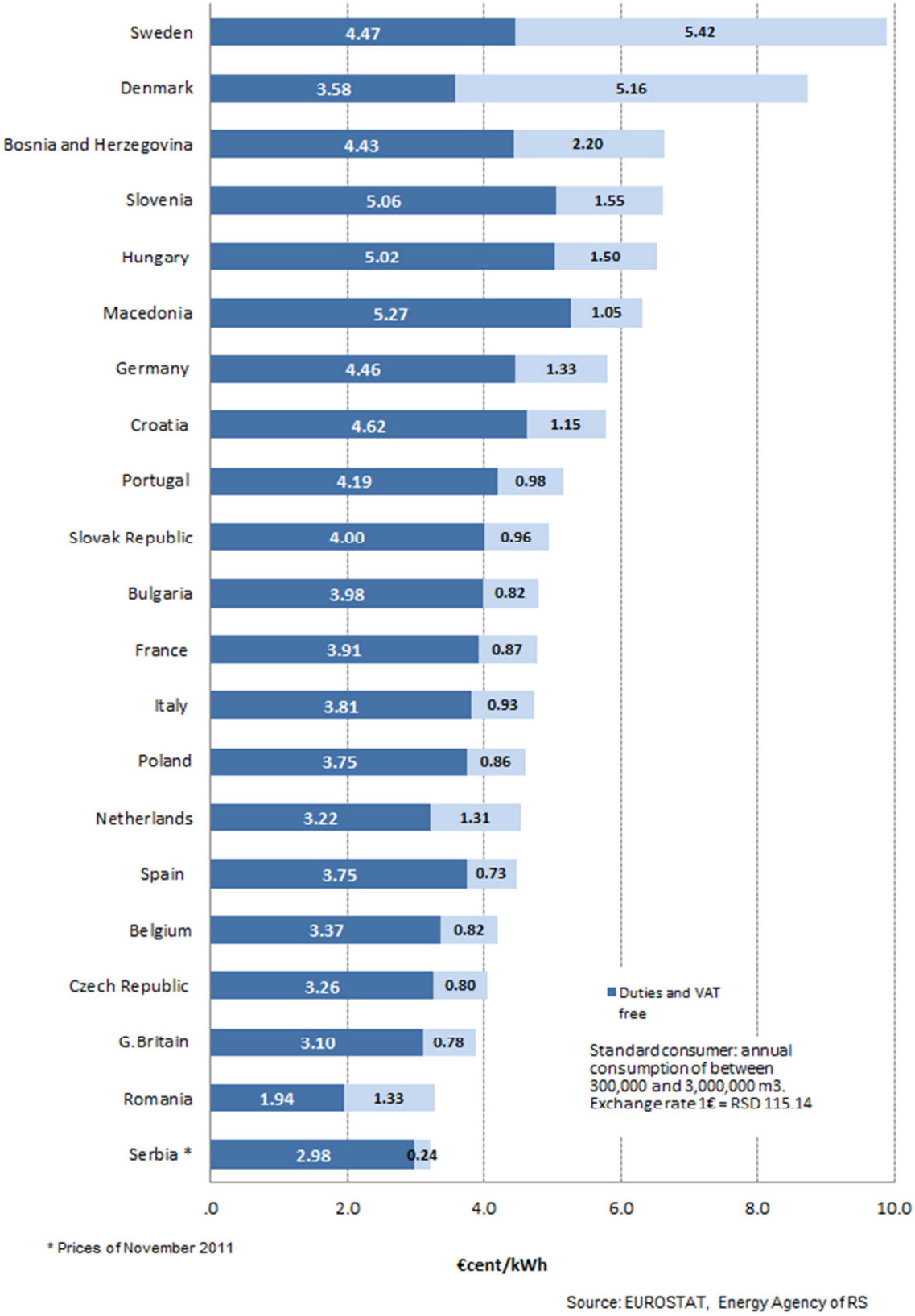

Figure 4-7: Natural gas prices for industry – the second half of 2012

The current natural gas public supply prices are available on the Agency website (www.aers.rs).

4.7 Natural gas market

In the natural gas sector, only bilateral market will be developed.

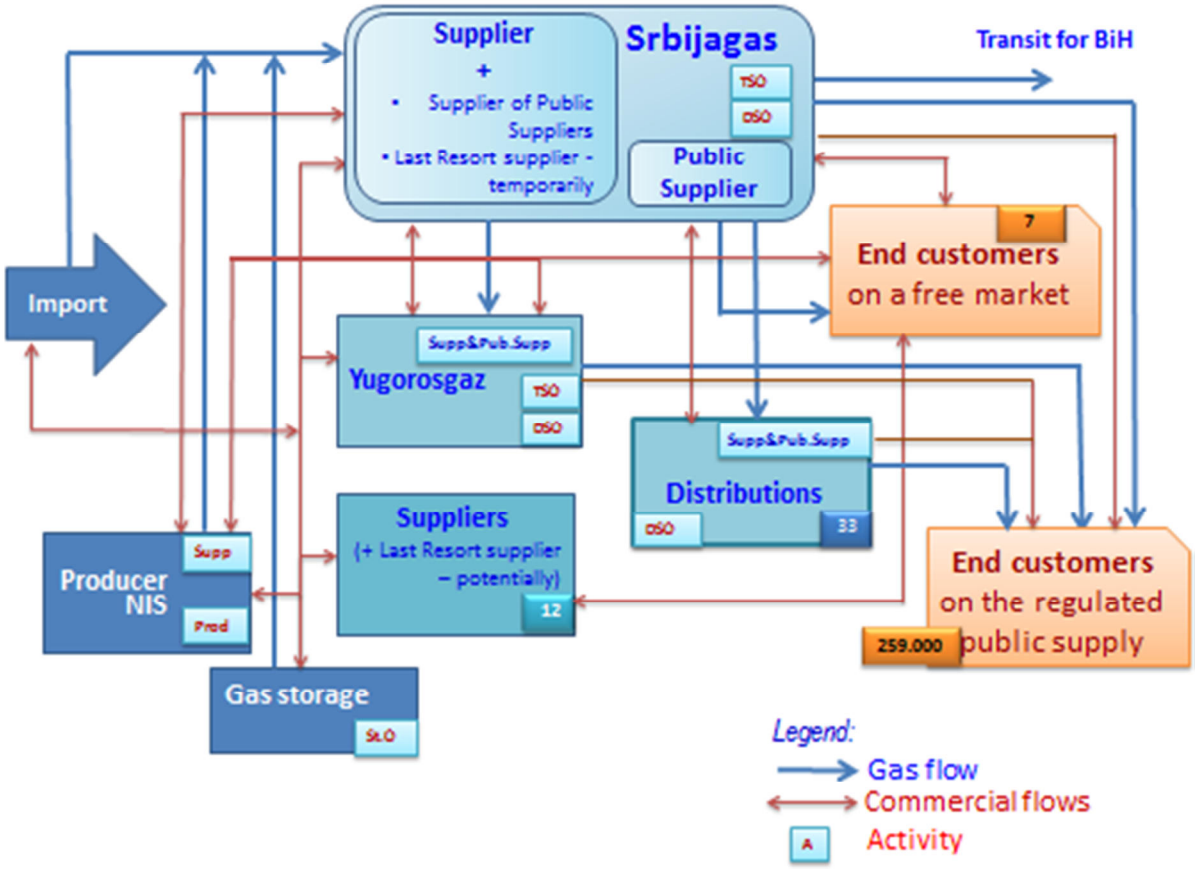

Figure 4-8: Natural gas market scheme

Natural gas market players are the following:

- producer (NIS);
- suppliers (21);
- public suppliers (33);
- supplier of public suppliers – upon their request (1);
- final customers (259,000);
- transmission system operators (2);
- distribution system operators (35) and
- storage operator.

On December 29, 2012, the Government of RS appointed PE Srbijagas to be temporary supplier of public suppliers (upon the launch and completion of tenders, in line with the Law), which is obliged to supply all the public suppliers demanding it, supply under the same conditions and at a same price which was approved by the Government of RS. The same conditions are valid for PE Srbijagas as a public supplier.

4.7.1 Wholesale market

Open wholesale natural gas market is based on bilateral contracts between producers, traders and suppliers. In 2012, there were three companies trading between themselves in the 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 Yugorosgaz 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.

The natural gas purchase price, which depends on market trends of oil derivatives to the greatest extent, became additionally dependent by the US$ exchange rate to RSD. The approved purchase natural gas price in 2012 was lower than the actual contracted purchase price.

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 connecting 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.

Joint activities realized during 2012 which relate to the Gas Ring project were directed at the development of the document "Energy Community Gas Ring – from Theory to Practice". The contribution to the common activities aimed at strengthening regional initiatives is also seen in the work of EnC Treaty Contracting Parties, which includes the work of the representatives of the regulatory bodies in the development and realization of the Regional Energy Strategy.

4.7.2 Retail market

4.7.2.1 Natural gas quantities delivered to final customers

In 2012, seven big customers procured gas in the open market. 324 million m^3 were delivered to those customers, i.e. 16.2% of total gas quantities delivered to final customers.

In 2011, 775 million m^3 of gas were delivered at unregulated prices, i.e. 33.5% of the total gas quantities. This was possible despite the fact the regulation was not fully developed, since there was a small number of customers and only two traders in the open market and PE Srbijagas made an agreement on the allocation of jurisdiction between different energy activities within the very public enterprise.

In 2012, tariff customers were supplied by 34 distributors holing licence for natural gas trade for tariff customers.

Table 4-15: Structure of natural gas sales in the open and regulated market

	2011 Million m^3	2012 Million m^3	2011/2011 (%)
Sold in the open market	775	324	42
Sold in the regulated market	1,537	1,680	109

In 2012, customers connected to the transmission system withdrew around 34% of total natural gas quantities sold to final customers. Remaining quantities were sold to the customers connected to the distribution system.

In 2012, only 3 distributors 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 1,390 million m^3 or around 69% 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 quanties amounted to over 252 million m^3 while Novi Sad Gas sold 72 million m^3 of gas which amounts to around 3% of total quantities in 2012. Individual share of other traders amounts to 2% or below 2% of total quantities.

Table 4-16: Natural gas sales to final customers in 2011 and 2012

000 m^3, %

No.	Trader	2011 (000 m^3)				2012 (000 m^3)				2012/2011 (%)			
		Househ.	DHC	Industry and other	Total	Househ.	DHC	Industry and other	Total	Househ.	DHC	Industry and other	Total
1	7. Oktobar, Novi Kneževac	845	0	530	1,375	791	0	510	1,301	-6	0	-4	-5
2	Beogas, Belgrade	13,142	0	1,601	14,743	12,725	0	1,659	14,384	-3	0	4	-2
3	Beogradske elektrane, Novi Beograd	3,579	0	1,090	4,669	3,241	0	1,143	4,384	-9	0	5	-6
4	Boss petrol, Trstenik	5	0	930	935	6	0	1,016	1,022	20	0	9	9
5	Čoka, Čoka	366	0	510	876	331	0	412	743	-10	0	-19	-15
6	Drugi oktobar, Vršac	9,644	1,843	14,067	25,554	8,808	2,188	13,326	24,322	-9	19	-5	-5
7	Ekos, Žitište	1,812	215	1,268	3,295	1,450	190	663	2,303	-20	-12	-48	-30
8	Elgas, Senta	1,565	0	713	2,278	1,455	0	679	2,134	-7	0	-5	-6
9	Gas – Feromont, Stara Pazova	19,254	787	8,137	28,178	17,482	752	7,573	25,807	-9	-4	-7	-8
10	Gas – Ruma, Ruma	6,316	760	9,454	16,530	5,674	753	9,240	15,667	-10	-1	-2	-5
11	Gas, Bečej	1,699	0	1,397	3,096	1,536	0	1,225	2,761	-10	0	-12	-11
12	Gas, Temerin	6,869	0	1,475	8,344	6,086	0	1,332	7,418	-11	0	-10	-11
13	Graditelj, Srbobran	1,459	0	1,167	2,626	1,277	0	1,361	2,638	-12	0	17	0
14	Grejanje, Zrenjanin	16,189	11,114	4,016	31,319	14,802	9,785	4,224	28,811	-9	-12	5	-8
15	Ingas, Inđija	9,233	0	8,038	17,271	8,286	0	7,843	16,129	-10	0	-2	-7
16	Interklima, Vrnjačka Banja	965	0	1,669	2,634	888	0	1,669	2,557	-8	0	0	-3
17	Komunalac, Novi Bečej	1,457	0	927	2,384	1,328	0	759	2,087	-9	0	-18	-12
18	Kovin – Gas, Kovin	3,262	1,219	7,130	11,611	2,927	1,090	5,789	9,806	-10	-11	-19	-16
19	Loznica - Gas, Loznica	1,443	1,551	2,415	5,409	1,446	2,472	3,194	7,112	0	59	32	31
20	LP - Gas, Belgrade	2,391	0	16	2,407	2,304	0	102	2,406	-4	0	538	0
21	Novi Sad – Gas,Novi Sad	50,342	318	29,259	79,919	46,074	355	25,951	72,380	-8	12	-11	-9
22	Polet, Plandište	2,032	0	2,975	5,007	1,909	0	2,767	4,676	-6	0	-7	-7
23	Resava Gas, Svilajnac	457	0	1,582	2,039	457	0	1,472	1,929	0	0	-7	-5
24	Rodgas, Bačka Topola	1,235	0	6,948	8,183	1,189	0	7,790	8,979	-4	0	12	10
25	Sigas, Požega	277	0	23	300	257	0	39	296	-7	0	70	-1
26	Sloga, Kanjiža	2,084	0	2,101	4,185	1,845	0	2,127	3,972	-11	0	1	-5
27	Sombor – Gas, Sombor	2,013	3,067	5,791	10,871	1,867	3,848	5,717	11,432	-7	25	-1	5
28	Srbijagas, Novi Sad	81,081	487,611	1,185,283	1,753,975	77,732	517,510	795,205	1,390,447	-4	6	-33	-21
29	Srem - Gas, Sremska Mitrovica	5,702	544	10,328	16,574	5,156	543	10,230	15,929	-10	0	-6	-4
30	Standard, Ada	1,024	0	950	1,974	898	0	974	1,872	-12	0	3	-5
31	Suboticagas, Subotica	10,106	0	14,919	25,025	9,175	0	15,680	24,855	-9	0	5	-1
32	Thenoenergetika, Kruševac	770	0	70	840	0	0	0	0	/	/	/	-100
33	Toplana – Šabac, Šabac	3,366	0	518	3,884	3,106	0	460	3,566	-8	0	-11	-8
34	Užice – gas, Užice	58	0	905	963	110	0	3,091	3,201	90	0	242	232
35	Vrbas – Gas, Vrbas	2,056	0	7,318	9,374	1,895	0	6,167	8,062	-8	0	-16	-14
36	Yugorosgaz, Beograd	598	30,361	9,598	40,557	649	30,412	11,655	42,716	9	0	21	5
37	RST			162,945	162,945	0	0	236,132	236,132	0	0	45	45
	Total:	**264,696**	**539,390**	**1,508,063**	**2,312,149**	245,162	569,898	1,189,176	2,004,236	-7	6	-21	-13

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, i.e. in 2012.

4.8 Security of natural gas supply

Energy entities operating in the gas sector 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 480 MW capacity.

4.8.2 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 will be even more important for the long-term security of natural gas supply. The construction has been initiated and the completion is expected by the end of 2016 when the delivery to Serbia will be initiated.

The estimated value of this pipeline through Serbia amounts to €1.7 billion and the gas pipeline route is 470 km long. The capacity of the gas pipeline to Serbia is estimated to 40 billion m^3 of gas per year.

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.

In October 2012, an Interstate Agreement on Natural Gas Delivery was signed and it should provide for the security of supply to Serbia by Gazprom for the period up to 2023.

In late 2012, an Agreement was signed on the construction of the gas pipeline Nis – Dimitrovgrad – Sofija which will connect the gas systems of Bulgaria and Serbia. The length of the gas pipeline should record around 150 km and its capacity in the first phase should be 1.8 billion m^3 annually.

In 2012, PE Srbijagas prepared the ten years' Natural Gas Pipeline System Development Plan for the period 2012-2022. However, bearing in mind the content, the need for making further harmonisation of the document, as well as the time necessary for these activities, the Agency's approval procedure was not launched. The given document is a good basis for the ten-year plan which the transmission system operators are obliged to submit to the Agency for approval in 2013.

5. OIL AND OIL DERIVATIVES

5.1 Sector structure and capacities

5.1.1 Organisational and ownership structure of the oil sector

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, llc 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 lines except in those companies which use this transport for their own purposes.

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 2012, NIS JSC provided for around 74% of total Serbian demand in oil derivatives. The company has the greatest retail network which covers around 25% of the market. In retail of motor fuels and other types of fuels, a considerable share is also held by Lukoil, OMV, MOL Serbia, ECO-Serbia, Petrol, Eurogas, Europetrol, MB Gas Oil, Knez Petrol, AVIA, etc.

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 are performed exclusively by NIS – Gaspromnjeft. Total crude oil and semi-products consumption in 2012 in Serbia amounted to 2.2 million tons. Crude oil production is performed by NIS Naftagas (Daughter Company of NIS – Gaspromnjeft) both in Serbia and in Angola. In 2012, around 1.13 million tons (49.5%) were produced in Serbia, around 65 thousand tons were produced in Angola, and 1.153 million tons (50.5%) were imported, primarily from Russia (Ural type). Crude oil processing is performed in oil refineries in Pančevo and Novi Sad.

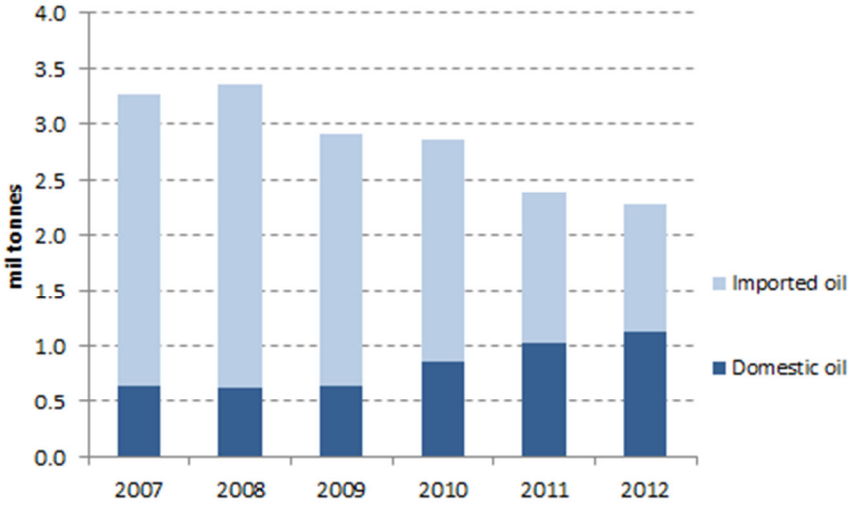

Figure 5-1: Crude oil refinery processing in Serbia in 2007 - 2012

Crude oil refinery processing has been constantly dropping from 2008 to 2012 (by 32.1%) while local production is growing (by 80%) and crude oil import is decreasing (by 57.8). Local crude oil share in total refinery processing in 2008 amounted to 18.6%, while in 2012; it amounted to around 50%. In 2011, in comparison to 2011, refinery processing was decreased by 4.5%, local oil production was increased by 9.5% and crude oil import was decreased by 15.3%.

In the oil derivatives production structure, diesel production holds the share of 34%, motor fuels 14%, heating oil 14%, liquid petroleum gas (LPG) 4% and other derivatives 34%. Within the oil derivatives production structure, in comparison to 2011, diesel share was increased by 3%, other derivatives share was increased by 3%, petrol share was decreased by 5% and heating oil decreased by 2%. TNG production level remained on relatively the same level.

Oil derivatives, as final products, except from refinery processing (2.187 million tons) are imported as well. In 2012, around 2.2 million tons of derivatives were imported (almost 38% more than in 2011), mainly Euro diesel (EN 590) and LPG, as well as small quantities of unleaded motor fuel. In 2012, around 0.35 million tons of derivatives were exported.

In 2005-2012, LPG consumption increased by over 20%, while motor fuels consumption in total decreased by around 5%. In addition, diesel fuel consumption increased by around 3%, Euro diesel consumption increased by almost 50%, while diesel D2 consumption decreased by amount 35%.

Total oil derivatives consumption in 2012 amounted to around 3 million tons. Within the oil derivatives consumption structure, motor fuels represent 72%, mazoutes 16% and the other derivatives – 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 Rules 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 2005-2012, i.e. from the establishment of PE Transnafta, around 20 million tons of oil was transported in total. In 2012 around 713 thousand tons of local oil and 1.15 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).

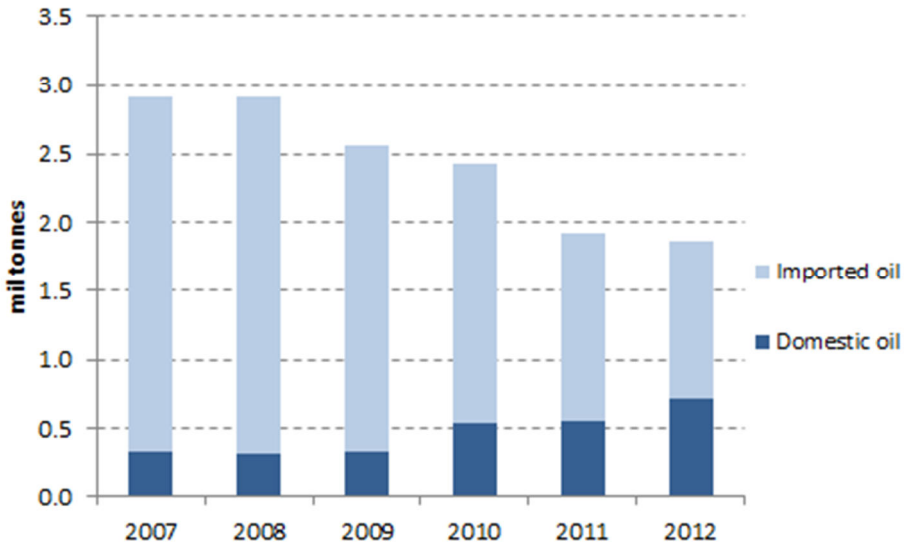

Figure 5-2: Crude oil quantities transported by oil pipeline of PE Transnafta

Total crude oil quantities transported in 2008-2012 (Figure 5-2) dropped by around 36%. 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 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 Sombor, through Novi Sad, Pančevo, Smederevo and Jagodina to Niš including an independent branch towards Belgrade. The construction of the line would enable pipeline connection between Serbian refineries with storage installations and create conditions for safer, more secure and more environment friendly supply of the market in motor fuels. International project pipeline Constanza – Trieste (PEOP) is currently on standby.

5.3.3 Regulation of the transport use-of-system charges

Since 2007, the prices have been regulated in oil transport by oil pipelines only. As of October 1, 2012, a new Methodology for Setting Oil and Oil Transport Use-of-System Charges entered into force.

Table 5-1 indicates the prices of oil transport which were valid in 2012.

Table 5-1: Transport use-of-system charges

PE Transnafta, Pančevo, valid from - to	Oil pipeline branch	Tariff 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	
From 01/12/2011	Sotin – Novi Sad	316.05	"Official Gazette of RS", No.90 as of 30/11/2011
	Novi Sad – Pančevo	210.69	

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

5.4 Oil and oil derivatives market

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 2013, the licence for trade in oil, oil derivatives, biofuels and compressed natural gas was held by 171 energy entity, i.e. 10% less than one year ago and thereby, the reduction trend is followed. 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.

There were 370 energy entities licenced for retail by the end of 2011, while there were 415 of them in the end of 2012. An increase of the number of licenced energy entities is due to a lease of a greater number of petrol stations from NIS and Lukoil system to new leaseholders. Thereby, the number of market players was increased by using practically the same number of petrol stations (around 1,450 of them).

6. ACTIVITIES OF GENERAL INTEREST AND CUSTOMER PROTECTION

6.1 Activities of general interest

The legal framework for public supply in the energy sector of Serbia is stipulated by two major laws: Law on Public Enterprises ("Official Gazette RS", No. 119/12) and the Energy Law.

The Law on Public Enterprises 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, i.e. the Directive of the European Parliament and Council 2009/72/EC and 2009/73/EC from the so called "Third Energy Legislative Package", is regulated by the Energy Law. The Law on Public Enterprises defines that an activity of general interest can be performed by a public enterprise founded by the Republic of Serbia, autonomous province or local self-government unit 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 competent body.

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.

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. Bearing in mind that, in line with the Law, the public supplier is appointed by the Government of RS, and that the electricity and natural gas markets are being opened in several phases, as of 01/01/2014, in the electricity field, only households and small will be entitled to public supply. In the natural gas field, as of 01/01/2015, only natural gas households and small customers will be entitled to it. In the second half of 2012, by the amendments to the statute of PE Srbijagas and by the conclusion of the contract on entrusting natural gas public supply with several companies, the Government of RS appointed energy entities in the field of natural gas which can perform this activity. Four of them complied with the conditions and were awarded with the natural gas public supply licence by the Agency.

6.2 Customers 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 vulnerable customers".

The bylaws regulating the conditions for electricity and natural gas delivery and supply which were adopted in 2005 and 2006 in line with the 2004 Law (these regulations are now being developed in line with the new Law) 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 vulnerable customers" for the first time. The Law defines the term "energy vulnerable customer" since "energy vulnerable 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 and social-wise vulnerable 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 Vulnerable 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 which are applied upon the proposal of competent bodies. 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;
- 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;
- 15% discount for rational consumption - households consuming up to 500 kWh and
- 30% discount – extra discount which was inforce only in February 2012 for households which had average consumption 15% lower than in January 2012.

Table 6-1: Electricity price discounts in 2012

	Number of customers/months with exercised right to discount, in total	Amount thousands RSD
Price discount 5%	16,109,237	1,580,726
Price discount 11.89%	7,889,433	1,021,759
Price discount 15%	2,539,067	536,144
Price discount 30%	235,339	122,581
MOP*	233,368	149,938
Social care allowance **	208,625	112,503
Total		**3,523,650**

* - MOP – allowances - families with no income or with income under social security level. According to the list given by social institutions, there are around 1,040,440 customers entitled to this type of assistance, while there were around 503,299 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. On the annual level, pursuant to the data submitted by the distribution companies, there are 375,517 of them.

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.

Upon the adoption of the Decree on Energy Vulnerable Customer (which entered into force on March 23, 2014 and being implemented as of April 1, 2013), all the given discounts, except the discount for regular settlement of liabilities of 5% are suspended and annulled, while the discount of 11.89% ceased to be valid on January 1, 2013.

ANNUAL AND FINANCIAL REPORT

7. AGENCY REPORT

7.1 Basic data about the Agency

7.1.1 Establishment of and the scope of work of the Agency

The Energy Agency of the Republic of Serbia (Agency) was established pursuant to the 2004 Energy Law, which provided for the harmonisation of our legislation with the EU regulations at that time.

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 2011 Energy Law, 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:
  - electricity transmission use-of-system charges;
  - electricity distribution use-of-system charges;
  - natural gas transmission use-of-system charges;
  - natural gas distribution use-of-system charges;
  - natural gas storage use-of-system charges;
  - electricity public supply prices;
  - natural gas public supply prices;
  - oil transport use-of-system charges and oil derivatives via oil pipelines and product lines respectively;
  - 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 rules;
  - organised electricity market rules;
  - 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 rules 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.

7.1.2 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.

In 2012, the Agency Council held 32 sessions during which decisions, approvals, certificates and other acts in the field of price regulation, energy market establishment and monitoring, licences issuance, internal organisation and the method of operations of the Agency and other issues within the jurisdiction of the Council were adopted.

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.

7.1.3 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 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. The annual report includes the data on the Agency's work during the previous year, its financial operations and the situation in the energy sector of the Republic of Serbia which is within the Agency's competence.

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. To the same end, USAID supported the Agency between 2007 and 2011.

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. Until the day this Report was drafted, the National Assembly has not considered the 2012 Financial Plan of the Agency which was submitted to the Assembly on October 31, 2012.

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.

7.2 Activities of the Agency in 2011

7.2.1 Price regulation

In 2012, in terms of price regulation, the Agency Council adopted the following acts:

- Methodology for Setting Electricity Transmission Use-of-System Charges;
- Amendment to the Methodology for Setting Electricity Transmission Use-of-System Charges;
- Methodology for Setting Electricity Distribution Use-of-System Charges;
- Methodology for Setting Electricity Public Supply Charges;
- Methodology for Setting Natural Gas Transmission Use-of-System Charges;
- Amendment to the Methodology for Setting Natural Gas Transmission Use-of-System Charges;
- Methodology for Setting Natural Gas Distribution Use-of-System Charges;
- Methodology for Setting Natural Gas Public Supply Charges;
- Methodology for Setting Oil and Oil Derivaties Transport Use-of-System Charges;
- Amendment to the Methodology for Setting Oil and Oil Derivaties Transport Use-of-System Charges;
- Methodology for Setting Costs of Connection to the Electricity Transmission and Distribution Systems and
- Methodology for Setting Costs of Connection to the Natural Gas Transmission and Distribution Systems.

The Agency Council adopted:

- Decision on Setting System Services Price for 2012;
- Decision on Setting System Services Price for 2013.

The Agency Coucil issued:

- An approval to the Decision of the Management Board of PE Srbijagas Novi Sad on natural gas public supply charges;
- An opinion about the draft decision of “Loznica-Gas” llc, Loznica on natural gas distribution use-of-system charges, as well as for natural gas billing for tariff customers (in June 2012, in line with 2004 Law).

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

In 2012, the Agency adopted all bylaws for price regulation which was the obligation of the Agency in line with the Law. All bylaws were adopted except the Methodology for Setting Natural Gas Storage Charge, since the only existing storage was exempted from price regulation by the Agreement signed between the Government of the Republic of Serbia and the Government of the Russian Federation on Cooperation in the Field of Oil and Gas Industry.

Permanent Agency activities in terms of price regulation 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;
- provision of expertise to energy entities in unbundling and insight and control of unbundled funds and costs for their different activities;
- monitoring and analysing the data submitted by energy entities on realised costs and regulated prices;
- semi-year monitoring and comparison of realised electricity and natural gas prices in the region and Europe;
- monitoring costs of appartment heating taking into account the prices of fuels in a certain period of the year and
- analysis of solutions and draft solutions for price regulation and preparation of draft amendments and improvement of existing legislation.

7.2.2 Licencing energy entities

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 Rulebook which regulates the conditions for issuing energy licences was published (with prescribed forms and proofs which are necessary for the submission of application for energy licence) on the Agency website.

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 RS”.

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.

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 117 applications for licence issuance submitted to the Agency. Since there were 1,374 applications in the period 2006-2011, there were 1,491 in total.

2012, unorderly applications from previous years and applications submitted in the previous years were processed. By the end of 2012, 87 new licences were issued. 139 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 2012, there were 822 ruling licences in total.

In most cases, the applications were sent back to energy entities for further supplements and corrections to be made. Some of them were sent back several times. Upon the removal of deficiencies and documentation completion, these applications were considered again, so as to check the compliance with energy licence conditions. For the given reasons, there are more than 90 applications being considered.

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 2012, the Agency adopted 57 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 2012, 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 2012 per each activity is given in Table 7-1.

Table 7-1: Submitted applications and approved licences in 2012 per each activity

No.	Activity	Submitted applications	Approved licences
1.	Electricity generation (electricity generation of total approved connection power of over 1 MW)	3	0
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	0
3.	Electricity transmission and transmission system management	0	0
4.	Electricity distribution and distribution system management	0	0
5.	Electricity supply	14	14
6.	Electricity public supply	0	0
7.	Electricity market organisation	0	0
8.	Oil derivatives production	1	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	0	0
12.	Trade in oil, oil derivatives, biofuels and compressed natural gas	2	0
13.	Trade in motor fuels and other fuels on petrol stations	68	60
14.	Natural gas transmission and transmission system operations	0	0
15.	Natural gas storing and storage system management	0	0
16.	Natural gas distribution and distribution system management	0	0
17.	Natural gas supply	3	5
18.	Natural gas public supply	26	8
19.	Biofuels production of over 1000t per year	0	0
	Total	117	87

7.2.3 Monitoring electricity and natural gas market

So as to create conditions for proper market functioning, the Law stipulates the adoption, i.e. harmonisation with the new Law, of all the rules prescribed by the Law. There are 12 of them. The Agency adopted the Rules on Supplier Switching ("Official Gazette of RS", No. 93/12). The deadline for the adoption of the Rules for Monitoring Technical and Commercial Indicators and Regulation of Quality of Electricity Supply is 2013. The remaining 10 rules are being developed and adopted by energy companies, upon the Agency's approval.

In 2012, the Agency approved the following documents:

- Electricity Market Rules ("Official Gazette of RS", No. 120/12);
- Rules on Allocation of Cross-Border Transmission Capacities for the Period 01/01/2013 – 31/12/2013;
- Rules on Allocation of Cross-Border Transmission Capacities on Serbian – Hungarian Border for 2013 ("Agreement between Transmission System Operators of the Republic of Hungary – MAVIR ZRt. and the Transmission System Operator of the Republic of Serbia – PE EMS on the Procedure and Manner of Allocation of Rigths to Cross-Border Capacities and Access to Cross-Border Transmission Capacities for 2013") as well as
- Rules on Allocation of Cross-Border Transmission Capacities on Serbian – Romanian Border for 2013 ("Agreement between Transmission System Operators of the Republic of Romania CCCN TRANSELECTRICA – S.A.–. and the Transmission System Operator of the Republic of Serbia – PE EMS on the Procedure and Manner of Allocation of Rigths to Cross-Border Capacities and Access to Cross-Border Transmission Capacities for 2013").

The development of the Natural Gas Transmission System Code is in the final phase. It is being developed by PE Srbijagas and adopted by the Agency.

There is an ongoing harmonisation of the adopted electricity transmission system code, electricity distribution system code and oil transport system code with the Law, in order to submit them for the Agency's approval. Oil derivatives transport system code is not adopted and will not be adopted until product lines meant for public supply are constructed. Other rules are either being developed or will be developed so as they could be adopted within the deadlines prescribed by the Law.

In 2012, the Agency supervised the implementation of the adopted rules through the analysis of needs and initiatives for amendments and supplements to these rules and through its participation in the work of commissions in charge of their supervision. In line with the rules, the commissions were established between PE EMS – for transmission system and PE EPS – a single commission for all the five distribution companies. There is one Agency representative in each of these commissions. The commissions were not yet established by PE Transnafta – for monitoring oil transport system code and PE EMS – for electricity market rules.

7.2.4 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 2012, there were 226 appeals in total against the activities and behaviour of energy entities in different areas of their operations. 153 of them are under the jurisdiction of the Agency, while 73 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 153 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") – 53 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 – 149 appeals, while there were 4 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, 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 2012, so as to reduce the number of unlawful decisions adopted by electricity distribution companies, upon Agency's request, expert meetings with these energy entities 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. However, it continued in 2012 and therefore, the activities of the Agency 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 the years to come.

7.2.5 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 APKM) 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.

7.2.5.1 The Athens process and the Energy Agency 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, while several representatives of the Agency chair some ECRB sub-groups.

In 2012, 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 and
- renewable energy sources (RES) – exchange of experience in terms of the influence of regulatory regimes to the scale and tempo of RES plants construction in the region.

Natural gas

- analysis of regulatory issues important for the construction of EnC gas ring;
- analysis of existing balancing mechanisms in the SEE Europe region and considering the options for improvements in that field.

Protection of vulnerable customers

- participation in the drafting procedure on the EnC level – the documents on the position and methods of protection of energy vulnerable customers;
- analysis of supplier switching mechanisms in the region, drafting recommendations for harmonisation with the best regulatory practice;
- overview of small electricity producers in the region, analysis of conditions of operation and recommendations for improvements in the field;
- overview of conditions, mechanisms and procedures for the connection to the grid in the region and recommendation for impovements in the field;
- development of Guidelines for Voltage Quality Monitoring with the Council of European Energy Regulators (CEER).

Either directly or via the support to the Ministry in charge of energy, the The Agency was very active during all the phases of development of Regional Energy Strategy, which is being developed within EnC upon Serbia's initiative. The Agency's proposals were accepted which contributed to the quality of the document to a great extent. They particularly contributed to the work within the second phase, i.e. to the improvements in the method of project assessment which should lead to the selection of priority projects of regional importance.

7.2.5.2 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. So as to identify the best regulatory mechanisms in several fields of regulation theory and practice (price regulation, competition and energy market, licencing, etc.), insight into options for their implementation in Serbia and capacity building in the Agency. In 2012, the Agency participated in the following ERRA activities:

- Licensing and Competition Committee (an Agency representative has been the vice president of the Committee since 2011)
  - „smart" grids upon the adoption of the Third EU Energy Package – regulatory challenges;
  - Practical aspects of the implementation of incentive schemes for renewable energy sources (commercial arrangements, money flows, contractual relations);
  - True obstacles for market opening and competition development in the electricity market;
  - New concept of wholesale market monitoring in EU (ACER's and national regulators' role in terms of REMIT implementation);
  - Chosen models for unbundling transmission system operator (ownership unbundling, TSO, ITO);
  - Conditions for licence withdrawal and appointment of a new licence holder so as to secure the performance of activities of general interest.
- Tariff/Pricing Committee (an Agency representative has been the vice president of the Committee since 2011)
  - Allocation of costs to consumption categories and customer groups (system users) – electricity and natural gas;
  - Regulation of natural gas distribution use-of-system charges (small distribution companies);
  - Costs of connection to electricity and natural gas distribution systems;
  - Public supply and supply of the last resort – solutions in member states;
  - Setting the level of sunk or stranded costs and their treatment during MOP establishment;
  - Social mapping and a possibility to take into account the social status of customers during tariff system development;
  - Monitoring the realization of previously approved investment plans of regulated entities;
  - Incentive regulation for public supply field.
- Legal Regulation Working Group (an Agency representative has been the chairman of the Committee since 2008)
  - Energy and environment protection (Kyoto Protocol and EU 2020);
  - Industrial distribution grids;

- Executive authority of ERRA member regulators;
- Transfer from licencing to registration regime;
- Regulatory practice in dispute settlement;
- Benchmarking: legal aspects of licencing in ERRA members;
- Relevant legal aspects of connecting electricity market of the Czech Republic, Hungary and Romania;
- Establishment of ERRA base of the most important legal regulations in the energy field.

7.2.5.3 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 and monitoring.

7.2.6 Other activities

The Agency actively participated in the preparation of bylaws which are important for the Agency’s jurisdiction. We were even active in the drafting procedure for other bylaws (Rulebook on licences, Rulebook on detailed conditions and content of application for issuance, replacement and withdrawal of energy licence and manner of keeping registry of issued and withdrawn licences, Decree on conditions for electricity delivery, Decree on condition for natural gas delivery and supply, decrees regulating the use of renewable energy sources, National Action Plan for Renewable Energy Sources). The Agency was also included in the development of amendments and supplements to the Energy Law.

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 is actively involved in the work of two intersectoral working groups (Ministry of Labour, Employment and Social Policy, Ministry of Energy, Development and Environment Protection, Ministry of Finance and Economy, PE EPS, PE Srbijagas), which is entrusted with a task to develop a draft Decree on Energy Vulnerable Customer. The Decree will mitigate the negative effect of the increase in electricity and natural gas prices to socially vulnerable population categories. In addition, the Agency participated in the development of amendments to 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 Sources.

From the very beginning, the Agency was involved in the work of the Working Group within the competent Ministry which is preparing and drafting the Serbian Energy Sector Development Strategy until 2030. The Agency is analyzing the texts which were prepared and proposing amendments and supplements so as to improve and create a comprehensive, consistent and good-quality document.

The Agency assisted to the Ministry in the development of the Decree on setting maximum and minimum average heat energy prices in the heating season 2012/2013.

The Agency is strongly dedicated to further professional training of the Agency staff to a great extent. To that end, in 2012, 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.

In 2012, a twinning project between the Agency and the Slovak regulatory body Regulatory Office for Network Industries – financed by the EU through the IPA program was launched. The objective of the project is the improvement of regulatory mechanisms related to price regulation, market monitoring and the security of supply and the Agency’s capacity building so as to enable the Agency to address an increased scale and complexity of activities arising from the new Energy Law, competitive electricity market development and the Third package of legislation on common EU energy market.

In order to establish a long-term cooperation with the Italian national regulator in the energy field, a Memorandum of Cooperation was signed in 2012 between the Energy Agency of the Republic of Serbia (AERS) and the Regulatory Authority for Electricity and Gas of Italy (AEEG).

The 2012 Progress Report for Serbia included the conclusions of the European Commission that the role, independence and capacities of the Energy Agency should be strengthened.

8. AGENCY'S FINANCIAL REPORT

Financial operations of the Agency in 2012 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 2012 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 8-1: Total Agency's revenues in 2012

RSD

No.	Revenues	Plan	Realised
1	Revenue from licences	39,118,674	54,542,380
2	Revenue from regulatory fee	128,116,890	128,116,888
3	Revenue from 2011	23,055,251	0
4	Revenue from grants and reimbursements	1,092,606	1,800,219
5	Financial revenues and other revenues	1,265,432	1,755,029
	TOTAL REVENUE	**192,648,852**	**186,214,515**

Notes related to Table 8-1:

In 2012, the licences were issued in line with the 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 amounting to 23,472,600 RSD includes proportional part of the licence fee for 2012. The same method was used for calculating the revenue for 2011 amounting to 31,069,780 RSD, as the part transferred to 2012.

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 amounting to 128,116,888 RSD is calculated quarterly and it depends on the amount of maximum allowed revenue of energy entities. Since there were no changes in the fees for these activities in 2012, the invoiced revenue arising from this source is on the planned level.

The revenues from grants and reimbursements amount to expenditures. In this case, they amount to the value of costs of depreciation of equipment financed from grant funds for 2012, 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. On the other hand, increased participation of the Agency's employees in the activities of the EnC working groups and Euro increase trend caused greater revenues than expected by the Plan, while being on the level of 2011.

Financial revenues and other revenues include the revenue from interest rate, positive exchange differentials as other non-business and extraordinary revenues. In 2012, these revenues amounted to 1,752,384 RSD. Pursuant to the Law, extra revenue in accounting 2012 is transferred to 2013. Table 8-2 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 8-2: Total Agency expenditure in 2012

RSD

No.	Expenditure	Plan for 2012	Realised in 2012
1	**Material**	**3,274,675**	**2,594,993**
1.1	- material (operating cost, office, miscellaneous)	1,565,970	1,220,756
1.2	- fuel and energy	1,708,706	1,374,237
2	**Salaries and allowances**	**130,537,331**	**115,785,109**
2.1	- salaries and allowances (gross)	104,790,071	92,639,352
2.2	- levies paid by employer	17,713,237	16,148,679
2.3	- fees in line with other contracts	500,000	64,000
2.4	- other personal expenditure and fees	7,534,023	6,933,078
3	**Production services**	**26,252,109**	**24,633,539**
3.1	- transport	1,881,395	1,881,730
3.2	- maintenance	1,515,947	1,161,233
3.3	- lease	20,531,879	19,160,884
3.4	- marketing and propaganda	212,984	165,350
3.5	- other services	2,109,904	2,264,342
4	**Depreciation and reserves**	**4,428,155**	**4,455,050**
5	**Non-material expenditure**	**6,276,603**	**8,002,196**
5.1	- non-production services	4,705,769	3,785,561
5.2	- costs of representation	291,766	244,058
5.3	- insurance premium	213,249	332,721
5.4	- payment operations	214,672	247,399
5.5	- membership	381,262	370,543
5.6	- taxes and fees	459,885	2,989,264
5.7	- other non-material expenditure	10,000	32,650
6	**Financial expenditure and other expenditure**	8,278,547	29,801,061
7	**Reserve for unexpected expenses/contingency and for equipment procurement**	**13,601,432**	**942,568**
	TOTAL EXPENDITURE	**192,648,853**	**186,214,515**

Notes related to Table 7-3:

In 2012 reporting year, total expenditure was covered by revenue and they coincide with total planned expenditure for 2012, i.e. it was 3.3% lower than the plan.

All main items of expenditure either coincide with the planned level or did not reach it at all. The biggest discrepancy in comparison to the planned expenditures is recorded with material costs which were 20% lower than the planned ones, primarily due to reserves from 2011.

Costs of salaries and allowances were 11.3% lower than the planned ones, primarily due to the implementation of wages limit in the last quarter of 2012. On the other hand, non-material costs recorded a substantial growth of 27.5% since, based on the Law on Setting Maximum Public Sector Salary prescribed that the difference between the salaries reimbursed in the fourth quarter of 2012 in comparison to the relevant month before should be calculated and transferred to the budget account. The costs arising from this item amount to 2,466,707 and they are given in the item representing taxes and fees.

In 2012, Agency's staff drain was continued (one legal expert) and one job vacancy invitation for an engineer did not succeed. These things are surely a consequence of a multi-year slower salary growth in the Agency in comparison to the public sector.

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, reduced solvency and considerable fluctuation of energy entities. Namely, a great number of them either stopped operating or their licence was temporarily or permanently withdrawn due to unpayment.

Total liabilities of the Agency on all bases on December 31, 2012 amounted to 78,540,123 RSD. 21,566,960 RSD are liabilities for issued licences and 56,973,163 RSD for regulatory fee. These liabilities are mostly related to the licence fee and regulatory fee for the fourth quarter of 2012 (41,532,000 RSD). 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 29,623,044 RSD on December 31, 2012. This correction includes correction of 16% 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 – 2011 as indicated in Table 8-3. In addition, procurements were made in 2012 from contingency funds and equipment procurement section, in line with public procurement plan. This was done mainly so as to replace a part of fixed assets which were written down, first of all computer equipment and cars.

Table 8-3: Purchase value of fixed assets of the Agency

RSD

	2007 - 2009	2010	2011	2012
Cars	0	1,893,554	3,019,655	2,126,167
Computer equipment, software, network	3,706,112	2,720,731	5,228,694	2,544,052
Office furniture and equipment	1,672,714	64,883	414,978	392,217
Telephone devices, telephone switchboard	318,339	224,090	337,582	120,694
Video surveillance, network	1,060,207	0	0	0
TOTAL	**6,757,372**	**4,903,258**	**9,000,909**	**5,183,130**

The value of assets which were not written down until December 31, 2012, amounts to 13,313,082 RSD, i.e. 40% of gross purchase value of assets, which indicates a high level of write-down and need to replace the fixed assets.

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Abbreviations and foreign phrases

ACER	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
REMIT	Regulation on wholesale energy market integrity and transparency, No. 1227/2011, adopted by the European Parliament and the European Council of Ministers
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
APKM	Autonomous Province of Kosovo and Metohija
MERZZS	Ministry of Energy, Development and Environment Protection
NIS JSC	Petroleum Industry of Serbia
PD	Daughter Company
RST	Russian – Serbian Trading Company
UNMIK	United Nations Interim Administration Mission in Kosovo, established by the Security Council by Resolution 1244 (1999)

Conversion factors for energy equivalents

	kJ	kcal	kWh	kg oe*
1 kJ	1	0.2388	0.000278	0.000024
1 kcal	4.1868	1	0.001163	0.0001
1 kWh	3,600	860	1	0.086
1 kg oe	41,868	10,000	11.63	1

*kilograms of equivalent oil

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