ENERGY AGENCY
OF THE REPUBLIC OF SERBIA

ENERGY AGENCY ACTIVITIES

*

ENERGY MARKET IN SERBIA

2005– 2010

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FOREWORD

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Perhaps the most important idea the world grasped in the last decade was the fact that humankind was not on a sustainable path in terms of energy production and consumption. Therefore, only coordinated measures, integrated on the regional and wider international level can lead us to a safer energy future.

Signing the Treaty establishing the Energy Community in 2006, Serbia has formally joined regional and European energy integration process. The 2004 Energy Law created the basis for legal and institutional framework for these changes and provided for the establishment of the Energy Agency.

The Report includes a description of the most important changes which have occurred during electricity and natural gas market opening and partly oil market opening in the past six years, from 2005 to 2010 as well as the overview of the activities of the Agency in this period.

Serbian energy sector has changed to a great extent, in line with the commitments arising from the Energy Law. However, some of changes failed since persistence and responsibility fell short.

This is an opportunity for us to thank all those who supported our intentions to comply with professional criteria during staff recruitment procedures upon the establishment of the Agency. In addition, we would like to thank all those who supported the activities of the Agency and indicated all the potentials for the improvement of our work.

We would also like to thank the European Union for the support from the very beginning up to now as well as to the Pennsylvania Public Utility Commission for their willingness to share their precious decades-long experience through a three-year successful partnership.

We endeavoured to find an adequate place for the Agency in a sensitive setting between energy producers and energy suppliers and energy consumers and system users as well as to have the best possible cooperation with all state institutions, in compliance with our competence. During the preparation of by-laws within the competence of the Agency, especially of those on price regulation, we strived to include wide groups of professionals and interested parties in the process and provide them with a possibility to contribute to the creation of better solutions.

We considered it would be very important to integrate a part of our expert capacities in the activities of international regional institutions and regulators' association, so as we could strengthen our influence there.

Today, we need to be aware of the continuity of ever more evident instability of energy markets worldwide and its ever greater influence on Serbian customers. In the years to come, Serbia will have to introduce measures for climate change mitigation, including the increase in renewable energy share. The time of relatively cheap energy is almost behind us, as is the case with the whole world and the questions such as how to spend less energy and how to make it more available to low-income customers will become ever more important.

We believe that in the years ahead, facing ever more complex national and international conditions, the Agency will successfully take a great share of responsibility resulting from widened authorities and stronger independence and, in line with the best European practice; it will play a role of one of institutional pillars of the Serbian and regional energy markets.

Belgrade,

July 2011

President of Agency Council

Ljubo Maćić

This Report was prepared in July 2011. In early August 2011, the new Energy Law entered into force and thereby, among other things, the authority of the Energy Agency was extended and specified.

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ABOUT ENERGY AGENCY

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Energy Agency was established by the Energy Law as a regulatory body competent in the fields of electricity, natural gas, oil and oil derivatives and heat energy produced in combined heat and power plants. By carrying out the activities stipulated by the Law, the task of the Agency is to contribute to the creation of a stable regulatory framework for the development of an efficient and sustainable energy sector, which will be a safe pillar of economic development of the country.

The Agency started operating in 2005.

2.1 Organisation and management

The Agency is managed by the Agency Council whose members are elected by the National Assembly upon Government proposal among prominent experts in the energy sector and other sectors of significance for the activities of the Agency. The Agency Council consists of the president and four members with a five-year term of office. Two Council members have their first three-year term while the other two have a four-year one. The Agency Council holds accountable for its work to the National Assembly.

Bearing in mind the tasks within the Agency competence and the status of Serbian energy sector reforms, the Agency is organized into four departments:

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

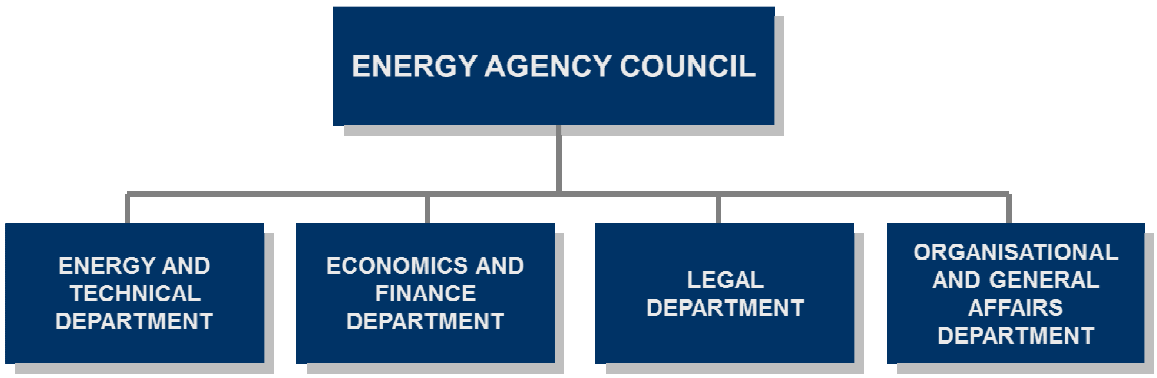

Figure 1. Agency organisational structure

The required degree of cross-department coordination in executing complex cross-functional tasks is achieved by having horizontal teams of experts from different departments.

2.2 Mission and vision

The mission of the Agency is the protection of short-term and long-term interests of energy customers in Serbia.

Short-term customer interests imply:

- Reliable energy supply through the provision of conditions for operational reliability of existing capacities, pursuant to applicable regulations and best practice and
- Prices of energy and services in line with valid operation costs and market conditions.

Long-term customers interests are realized through the provision of conditions for timely investments in new infrastructure aimed at covering future energy demand.

Agency recognises its *vision* in the creation of a stable regulatory framework, contributing to reliable and sustainable energy supply of customers at reasonable prices.

2.3 Scope of work

Pursuant to the Energy Law and international agreements, the Agency performs the following activities:

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

2.3.1 Price regulation

Price regulation activities include:

- establishment of methodologies for setting tariff elements for the calculation of the prices for the use of electricity transmission and distribution system, of natural gas transmission, distribution and storage system and of oil and oil derivatives transport system;
- establishment of methodologies for setting tariff elements for the calculation of prices of electricity, natural gas and heat energy (produced in facilities for combined electricity and heat energy production) for tariff customers;
- adoption of tariff systems for the calculation of prices for the use of electricity transmission and distribution system, of natural gas transmission, distribution and storage system, of oil and oil derivatives transport system and of natural gas storage facilities;
- adoption of tariff systems for the calculation of electricity and natural gas prices for tariff customers;
- establishment of criteria and procedure for the calculation of costs of the connection to transmission, i.e. transmission and distribution systems of electricity and natural gas respectively;
- issuing opinion on the prices for the use of electricity transmission and distribution system, of natural gas transmission, distribution and storage system, of oil and oil derivative system and of natural gas storage facilities;
- issuing opinion on electricity and natural gas prices for tariff customers;
- monitoring the implementation of methodologies and tariff systems and
- monitoring the activities undertaken by energy entities as regards accounts unbundling.

2.3.2 Energy market

The activities related to electricity and natural gas market include:

- giving approval for Electricity Market Code and monitoring its implementation;
- giving approval for Network Code and monitoring its implementation;
- giving approval for Natural Gas Storage Code and monitoring its implementation;
- establishment of criteria for obtainingeligible customer status;
- establishment of eligible customer status upon customer request;
- keeping eligible customers registry and
- monitoring the activities undertaken by energy entities as regards accounts unbundling.

Adoption of the Energy Law in 2004 enabled the introduction of competition in the energy sector in Serbia.

On the date of the entry into force of the Law, all electricity and natural gas customers represented tariff customers[1] and these were, pursuant to the Law, supplied by a trader established for electricity supply for tariff customers (PE Elektroprivreda Srbije), i.e. natural gas supply (PE Srbijagas) at regulated prices. At the same time, the customers complying with the criteria stipulated by the Law have a possibility to obtain the status of eligible customer[2] and thereby gain a possibility to purchase electricity on an open market.

2.3.3 Deciding upon appeals

This set of activities performed by the Agency as state administration activities include:

[1]Tariff customers are those who either do not have the possibility to choose an energy supplier on an free market or do not wish to do so, while they are supplied by a retail electricity trader for tariff customers at regulated prices

[2]Eligible customers are those purchasing energy for their own needs on an open market, i.e. from a supplier they choose themselves

- deciding upon appeals against decisions adopted by energy entities (system operators) on refusal to provide access to transmission or distribution system for electricity and natural gas, as well as to natural gas storage and to the systems for oil and oil derivatives transport;
- deciding upon appeals against decisions adopted by energy entities on connection of producers' and customers' facilities to electricity transmission, natural gas transmission or electricity and natural gas distribution system, i.e. against appeals due to failure to adopt decisions upon requests for connection.

2.3.4 Licencing

A set of activities as regards licencing energy entities for performance of energy activities (except for heat energy distribution and production in district heating companies), which are performed by the Agency as state administration activities stipulated by the Law (entrusted activities), includes:

- issuing licences for the performance of energy activities;
- revoking licences;
- monitoring compliance with licencing conditions and
- keeping registry of both issued and revoked licences.

2.3.5 International activities

An important segment of Agency activities implies implementation of international agreements signed by Serbia. First of all, these refer to 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 South-Eastern Europe countries and the European Community initiated the process of creation of the Energy Community aiming at the expansion of the common energy market of the European Union (EU) to the South-Eastern Europe market.

The main tasks of the Energy Community are the following:

- establishment of a stable regulatory and market framework in the South-Eastern 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 South-Eastern 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 Energy Community provides for the establishment of regional institutions necessary for the PanEuropean 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. Such a structure reflects the European Union institutions (European Council, European Commission, European Regulators' Group for Electricity and Gas – ERGEG and Florence and Madrid Forum), which were entrusted with some of state administration functions, in compliance with subsidiarity and proportionality principles.

Figure 2. Energy Community institutions

The Agency participates in the work of the Energy Community 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 integration).

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

2.4 Independence and responsibility

The Agency is an independent legal entity, functioning independently of any other state body, energy entities and those using their products and services, as well as of other legal and natural persons.

The Members of the National Assembly of the Republic of Serbia, members of the Assembly of the Autonomous Province of Vojvodina, members of Assembly committees, other elected and appointed persons or political parties' officials cannot be elected Council President and members. In addition, owners or co-owners of energy facilities, persons whose spouses or children or first cousins, regardless of the degree of kinship, are the owners or co-owners of energy entities cannot be elected Council President or member.

The funds for the establishment and work of the Agency are provided from the revenue obtained from licence issuance fees, part of the tariff for the access to and use of the system, as well as from other revenues collected from performing the duties stipulated in the law.

The Council President and members are held accountable for their work to the National Assembly. They submit a report to the National Assembly at least once a year. The report includes financial report verified by an independent auditor and a financial plan for the following year. Financial plan is approved by the National Assembly.

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AGENCY ACTIVITIES IN 2005–2010

AGENCY ACTIVITIES IN 2005-2010

The National Assembly of the Republic of Serbia elected the Council President and members on May 23, 2005. The Agency was registered at the Commercial Court on June 16, 2005 and it became fully operational in January 2006 after the engagement of staff, office space rental and equipment procurement and after the adoption of internal acts. The establishment and work of the Agency in the first two years upon its establishment in August 2005 was financed by the European Union. The European Union has continued providing support to the Agency so as to improve its professional capacities.

3.1 Price regulation

The activities listed by year:

2005

From August 2005 till the end of 2005, the Agency prepared the drafts of the legislation within the scope of its work, pursuant to the Energy Law (tariff systems, methodologies for the establishment of tariff elements, criteria and the method for the establishment of connection costs, etc.) for regulated activities in the fields of electricity, natural gas and oil.

2006

In 2006, the Agency adopted the following acts:

- Methodology on Criteria and Method for Calculation of Costs for Connection to the Electricity Transmission and Distribution System („Official Gazette RS“, No. 60/06);
- Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Electricity Transmission System („Official Gazette RS“, No. 68/06);
- Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Electricity Distribution System („Official Gazette RS“, No. 68/06);
- Methodology for Definition of Tariff Elements for Calculation of Electricity Prices for Tariff Customers („Official Gazette RS“, No. 68/06);
- Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Transmission System („Official Gazette RS“, No. 68/06);
- Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Distribution System („Official Gazette RS“, No. 68/06);
- Methodology for Definition of Tariff Elements for Calculation of Prices of Natural Gas Prices for Tariff Customers („Official Gazette RS“, No. 68/06);
- Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of System for Oil Transport through Oil Pipelines („Official Gazette RS“, No. 68/06);
- Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of System for Oil Derivatives Transport through Product Lines („Official Gazette RS“, No. 68/06).

The Agency Council adopted tariff systems and submitted them to the Government. The Government approved these methodologies in December 2006:

- Tariff System for Access and Use of Electricity Transmission System („Official Gazette RS“, No. 1/07);
- Tariff System for Natural gas transmission („Official Gazette RS“, No. 1/07);
- Tariff System for Oil Transport through Oil Pipelines and for Oil Derivatives Transport through Product Lines („Official Gazette RS“, No. 1/07);
- Tariff System for Access and Use of Electricity Distribution System („Official Gazette RS“, No. 1/07);
- Tariff System for Natural Gas Distribution („Official Gazette RS“, No. 1/07);
- Tariff System for Calculation of Electricity for Tariff Customers („Official Gazette RS“, No. 1/07);
- Tariff System for Calculation of Natural Gas for Tariff Customers („Official Gazette RS“, No. 1/07).

The Agency prepared and submitted certain instructions to energy entities. The instructions describe the type and scope of documentation and data which should be submitted to the Agency for the purpose of preparation and implementation of price regulation.

A draft of Methodology on Criteria and Method for Calculation of Costs of Connection to Natural Gas Transmission and Distribution System was prepared and submitted for public hearing.

2007

In 2007, the Agency adopted the following acts:

- Decision on Amendments and Supplements to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Transmission System („Official Gazette RS“, No. 1/07);
- Decision on Amendments and Supplements to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Distribution System („Official Gazette RS“, No. 1/07);
- Decision on Amendments and Supplements to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Natural Gas Prices for Tariff Customers („Official Gazette RS“, No. 1/07);
- Decision on Amendment to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of System for Oil Transport through Oil Pipelines („Official Gazette RS“, No. 1/07);
- Decision on Amendment to Decision on Establishment of Methodology on Criteria and Method for Calculation of Costs for Connection to the Electricity Transmission and Distribution System („Official Gazette RS“, No. 14/07);
- Decision on Establishment of Methodology on Criteria and Method of Calculation of Costs of Connection to Natural Gas Transmission and Distribution System („Official Gazette RS“, No. 18/07);
- Decision on Amendment to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Electricity Transmission System („Official Gazette RS“, No. 18/07);
- Decision on Amendment to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Electricity Distribution System („Official Gazette RS“, No. 18/07).

The Agency issued opinions on following price proposals:

- Prices of Access and Use of System for Oil Transport through Oil Pipelines:

  PE „Transnafta“, Pančevo 27/02/2007
- Prices of Access and Use of Electricity Transmission System:

  PE „Elektromreža Srbije“, Belgrade 05/07/2007
- Electricity Prices for Tariff Customers:

  PE „Elektroprivreda Srbije“, Belgrade 08/08/2007

2008

In 2008, the Agency adopted the following acts:

- Decision on Amendments and Supplements to Tariff System for Calculation of Electricity for Tariff Customers („Official Gazette RS“, No. 21/08);
- Decision on Establishment of Methodology on Criteria and Method of Calculation of Costs of Connection to Natural Gas Transmission and Distribution System („Official Gazette RS“, No. 48/08);
- Decision on Amendment to Decision on Establishment of Methodology on Criteria and Method for Calculation of Costs of Connection to Natural Gas Transmission and Distribution System („Official Gazette RS“, No. 54/08);
- Decision on Amendments to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Transmission System („Official Gazette RS“, No. 100/08);
- Decision on Amendments to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Distribution System („Official Gazette RS“, No. 100/08);
- Decision on Amendments and Supplements to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Electricity Distribution System („Official Gazette RS“, No. 116/08);
- Decision on Amendments and Supplements to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Electricity Distribution System („Official Gazette RS“, No. 116/08);
- Decision on Amendments and Supplements to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Electricity Prices for Tariff Customers („Official Gazette RS“, No. 116/08);

- Decision on Amendments and Supplements to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Transmission System („Official Gazette RS“, No. 116/08);
- Decision on Amendments and Supplements to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Distribution System („Official Gazette RS“, No. 116/08);
- Decision on Amendments and Supplements to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Natural Gas Prices for Tariff Customers („Official Gazette RS“, No. 116/08).

The Agency issued opinions on the following price proposals:

- Electricity Prices for Tariff Customers:
  - PE „Elektroprivreda Srbije“, Belgrade 20/02/2008
  - PE „Elektroprivreda Srbije“, Belgrade 28/07/2008
- Prices of Access to and Use of Electricity Transmission System:
  - PE „Elektromreža Srbije“, Belgrade 28/07/2008
- Prices of Access to and Use of Natural Gas Transmission System:
  - PE „Srbijagas“, Novi Sad 18/09/2008
  - „Yugorosgaz“ JSC, Belgrade 14/11/2008
- Prices of Access and Use of Natural Gas Distribution System:
  - PE „Srbijagas“, Novi Sad 18/09/2008
  - „Yugorosgaz“ JSC, Belgrade 14/11/2008
  - PUC (Public Utility Company) „Suboticagas“, Subotica 14/11/2008
  - PE „Gas-Ruma“, Ruma 16/12/2008
  - PE „Elgas“, Senta 16/12/2008
  - PE „Ingas“, Inđija 25/12/2008
  - PUC „Čoka“, Čoka 30/12/2008
  - „Gas“ LLC, Bečej 30/12/2008
  - PE „Kovin-gas“, Kovin 30/12/2008
  - „Drugi oktobar“, Vršac 30/12/2008
- Prices of Natural Gas for Tariff Customers:
  - PE „Srbijagas“, Novi Sad 18/09/2008
  - „Yugorosgaz“ JSC, Belgrade 14/11/2008
  - PUC (Public Utility Company) „Suboticagas“, Subotica 14/11/2008
  - PE „Gas-Ruma“, Ruma 16/12/2008
  - PE „Elgas“, Senta 16/12/2008
  - PE „Ingas“, Inđija 25/12/2008
  - PUC „Čoka“, Čoka 30/12/2008
  - „Gas“ LLC, Bečej 30/12/2008
  - PE „Kovin-gas“, Kovin 30/12/2008
  - „Drugi oktobar“, Vršac 30/12/2008

In 2008, the implementation of these regulations was analysed and consultations with energy entities on amendments and supplements to the following documents were initiated:

- Methodology on Criteria and Method for Calculation of Costs for Connection to the Electricity Transmission and Distribution System;
- Tariff System for Access and Use of Electricity transmission System and Tariff System for Access and Use of Electricity Distribution System.

2009

In 2009, the Agency adopted the following regulations:

- Decision on Amendments and Supplements to Decision on Establishment of Methodology on Criteria and Method for Calculation of Costs for Connection to the Electricity Transmission and Distribution System („Official Gazette RS“, No. 9/09);

The Agency issued opinions on the following price proposals:

- Electricity Prices for Tariff Customers:

PE „Elektroprivreda Srbije“, Belgrade	23/03/2009
PE „Elektroprivreda Srbije“, Belgrade	14/12/2009

- Prices of Access to and Use of Electricity Transmission System:

PE „Elektromreža Srbije“, Belgrade	23/03/2009
PE „Elektromreža Srbije“, Belgrade	14/12/2009

- Prices of Access to and Use of Electricity Distribution System:

„Centar“, Kragujevac	14/12/2009
„Elektrosrbija“, Kraljevo	14/12/2009
„Elektrovojvodina“, Novi Sad	14/12/2009
„Elektrodistribucija Beograd“, Belgrade	14/12/2009
„Jugoistok“, Niš	14/12/2009

- Prices of Access to and Use of Natural Gas Distribution System:

„Novi Sad-Gas“, Novi Sad	08/01/2009
PE „Srem-Gas“, Sremska Mitrovica	16/01/2009
„Rodgas“ JSC, Bačka Topola	16/01/2009
PE „Vrbas-Gas“, Vrbas	22/01/2009
PUC „Standard“, Ada	29/01/2009
„Sombor-Gas“ LLC, Sombor	29/01/2009
PE „Gas“, Temerin	29/01/2009
„Grejanje“, Zrenjanin	29/01/2009
„Beogas“ LLC, Belgrade	03/02/2009
„Gas-Feromont“ JSC, Stara Pazova	04/02/2009
PUC „7. Oktobar“, Novi Kneževac	10/02/2009
„Ekos“, Žitište	10/02/2009
„Interklima“ LLC, VrnjačkaBanja	19/02/2009
PUC „Graditelj“, Srbobran	12/03/2009
PE „Komunalac“, Novi Bečej	16/04/2009
„Polet“, Plandište	08/05/2009

- Prices of Natural Gas for Tariff Customers:

„Novi Sad-Gas“, Novi Sad	08/01/2009
PE „Srem-Gas“, Sremska Mitrovica	16/01/2009
„Rodgas“ JSC, Bačka Topola	16/01/2009
PE „Vrbas-Gas“, Vrbas	22/01/2009
PUC „Standard“, Ada	29/01/2009
„Sombor-Gas“ LLC, Sombor	29/01/2009
PE „Gas“, Temerin	29/01/2009
„Grejanje“, Zrenjanin	29/01/2009
„Beogas“ LLC, Belgrade	03/02/2009
„Gas-Feromont“ JSC, Stara Pazova	04/02/2009
PUC „7. Oktobar“, Novi Kneževac	10/02/2009
„Ekos“, Žitište	10/02/2009
„Boss petrol“ LLC, Stari Trstenik	10/02/2009
PUC „Graditelj“, Srbobran	10/02/2009
„Interklima“ LLC, Vrnjačka Banja	10/02/2009
PE „Komunalac“, Novi Bečej	10/02/2009
„Polet“, Plandište	10/02/2009
„Resava Gas“ LLC, Svilajnac	10/02/2009
„Sigas“ LLC, Požega	10/02/2009
PUC „Toplana-Šabac“, Šabac	10/02/2009
„Interklima“ LLC, Vrnjačka Banja	19/02/2009
PUC „Graditelj“, Srbobran	12/03/2009
PE „Komunalac“, Novi Bečej	16/04/2009
„Polet“, Plandište	08/05/2009

„Tehnoenergetika“ LLC, Kruševac 20/11/2009

- Prices of Access to and Use of System for Oil Transport through Oil Pipelines:

  PE „Transnafta“, Pančevo 27/03/2009

In 2009, the implementation of tariff systems and amendments and supplements to them were further analysed.

2010

In 2010, the Agency adoped the following acts:

- Decision on Amendments to Decision on Establishment of Methodology for Definition of Tariff Elements for Calculation of Natural Gas Prices for Tariff Customers („Official Gazette RS“, No. 64/2010 as of 10/09/2010);
- Decision on Amendment to Decicion on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Distribution System („Official Gazette RS“, No. 64/2010 as of 10/09/2010);
- Decision on Amendment to Decicion on Establishment of Methodology for Definition of Tariff Elements for Calculation of Prices of Access and Use of Natural Gas Transmission System („Official Gazette RS“, No. 64/2010 as of 10/09/2010);
- Decision on Amendment to Tariff System for Calculation of Electricity for Tariff Customers („Official Gazette RS“, No. 100/2010 as of 28/12/2010).

The Agency issued opinions on the following price proposals:

- Prices of Electricity for Tariff Customers:

  PE „Elektroprivreda Srbije“, Belgrade 24/12/2010

- Prices of Access to and Use of Electricity Transmission System:

  PE „Elektromreza Srbije“, Belgrade 24/12/2010

- Prices of Access to and Use of Electricity Distribution System:

  „Centar“, Kragujevac 24/12/2010
  „Elektrosrbija“, Kraljevo 24/12/2010
  „Elektrovojvodina“, Novi Sad 24/12/2010
  „Elektrodistribucija Beograd“, Belgrade 24/12/2010
  „Jugoistok“, Niš 24/12/2010

- Prices of Access to and Use of Natural Gas Distribution System:

  PUC „Beogradske elektrane“, Belgrade 11/02/2010
  PUC „Beogradske elektrane“, Belgrade 28/10/2010
  JSC „Sloga“, Kanjiža 11/02/2010
  „LP- Gas“, LLC, bankrupt, Novi Beograd 11/02/2010

- Prices of Natural Gas for Tariff Customers:

  PUC „Beogradske elektrane“, Belgrade 11/02/2010
  PUC „Beogradske elektrane“, Belgrade 28/10/2010
  „Užice-gas“, JSC, Užice 11/02/2010
  JSCZIP „Sloga“, Kanjiža 11/02/2010
  „LP- Gas“, LLC, bankrupt, Novi Beograd 11/02/2010

- Prices of Access to and Use of System for Oil Transport through Oil Pipelines:

  PE „Transnafta“, Pančevo 10/12/2010

In 2010, the implementation of tariff systems and amendments and supplements to them were further analysed.

Regular activities of the Agency since its establishment in 2005 include:

- cooperation and provision of expertise to energy entities as regards implementation of tariff systems in the fields of natural gas and electricity, as well as monitoring their adequate implementation;
- regular monitoring of the implementation of the Methodology on Criteria and Method of Calculation of Costs of Connection to Natural Gas Transmission and Distribution as well as the implementation of the Methodology on Criteria and Method for Calculation of Costs for Connection to the Electricity Transmission and Distribution System within the procedure of deciding upon appeals, thus providing necessary level of protection and directly contributing to adequate implementation of methodologies;
- preparaton and publication of amended and supplemented forms for submission of data for regular reporting on natural gas prices and effective electricity prices on Agency website.

3.2 Energy market

Activities listed by year:

2006

- PE Elektromreža Srbije (PE EMS) submitted the draft of the Transmission System Code to the Agency for the purpose of issuance of opinion. The Agency submitted objections to the draft and there were consultations organised between expert teams from PE EMS and the Agency in order to harmonise the positions and insert necessary amendments during 2006;
- The Agency Council adopted a decision on the modification of the minimum annual electricity production for obtaining the eligible customer status (thus providing him with a possibility to be supplied on an open market) from 25 GWh to 3 GWh as of January 1, 2007. Thereby, the level of electricity market opening (the share of energy delivered to the customers who have a possiblity to be supplied on an free marketin the total amount of energy delivered to all customers in Serbia given in percentage) was increased from 13% to 21%. This decision enabled potential market opening of 21%, with 350 possible eligible customers;
- The Agency established an eligible customer status only for one natural gas customer. The status is established upon customer request. There was no interest expressed for obtaining eligible customer status in the field of electricity, since electricity in the free market could not have been purchased at prices lower than those applied for tariff customers in Serbia.
- The Agency started keeping eligible customer registry and it represents one of regular activities of the Agency.

2007

- Harmonisation of the Transmission System Code was continued between the Agency and PE EMS;
- Expert teams of the Agency and PE Elektroprivreda Srbije (PE EPS) started preparing Distribution System Code;
- PE EMS started preparing Electricity Market Code. Upon prior approval of the Agency, Electricity Market Code is passed by PE EMS, being electricity market operator. Expert teams from PE EMS and the Agency commenced consultations so as to harmonise their positions on it;
- PE Srbijagas started drafting Natural Gas Transmission System Code; the Agency submitted general objections to the Code draft, suggesting a modification of concept, structure and content of it;
- PE Transnafta started drafting Oil Transport System Code; the Agency submitted general objections to the Code draft, suggesting a modification of concept, structure and content of it.

2008

- On the session of April 17, 2008, the Agency Council gave an approval for the Electricity Transmission System Code prepared by PE Elektromreža Srbije. Electricity Transmission System Code was published in the „Official Gazette RS“, No. 55 as of May 27, 2008 as well as on the websites of the PE EMS and the Agency. A Commission for Monitoring Implementation of Electricity Transmission System Code was appointed. One of the members of the Commission is the representative of the Agency;
- PE EPS submitted a draft of Electricity Distribution System Code to the Agency; the Agency did not approve the submitted proposal. The Agency suggested preparation of a new draft in line with the remarks; PE EPS started working on a new Code draft;
- PE Transnafta submitted the draft of Oil Pipeline Transport System Code to the Agency. The first round of consultations between expert teams from the Agency and PE Transnafta was completed and PE Transnafta continued working on the Code draft, in line with the recommendations of the Agency;
- Expert teams from the Agency, PE Srbijagas and Yugorosgas started consultations on Natural Gas Transmission System Code;
- Expert teams from PE Srbijagas, PE Vrbas Gas and representatives from Gas Distibutors Association commenced their consultations on Natural Gas Distribution System Code;
- Expert teams from the Agency and PE EMS continued consultations on the preparation of Electricity Market Code. Upon completion of consultations on each chapter of the Code draft, PE EMS made a new Code draft and submitted it to the expert team of the Agency for further consideration on December 31, 2008;
- On the Council session as of February 7, 2008, a decision on the modification of minimum annual electricity consumption for obtaining eligible customer status was adopted. Pursuant to this Decision, eligible electricity customer status can be obtained by any customer, regardless of annual consumption, except for the households. Thereby, the level of electricity market opening was increased from 21% to 47%. The Decision enabled over 350,000 customers to obtain eligible customer status;

- On the session held on Feburary 7, 2008, the Energy Agency Council also adopted a decision on the modification of the minimum natural gas annual consumption for obtaining eligible natural gas customer status. Pursuant to the Decision, the status can be obtained by any customer, regardless of annual natural gas consumption, except to households. Thereby, the level of natural gas market opening was increased from 50% to 88%.

The above given Decisions on the eligible customer status represent the fulfillment of obligations assumed by ratification of the Treaty establishing the Energy Community, under which, all customers except households are bound to obtain eligible customer status as of January 1, 2008. Pursuant to the provisions of the Treaty, households will become eligible on January 1, 2015, at the latest.

2009

- PE EPS and the Agency continued working on harmonisation of positions on Distribution System Code. In the end of 2009, companies dealing with electricity distribution submitted their drafts of Distribution System Code to the Agency. On the session held on December 25, 2009, the Energy Agency Council approved Distribution System Code for all five electricity distribution companies;
- Expert teams from PE EMS and the Agency continued harmonising their positions on the draft of the Electricity Market Code;
- Remarkable progress was made on the preparation of the draft of Oil Transport System Code and on removal of remarks of the Agency;
- Small progress was made in the preparation of the draft of Natural Gas Transmission System Code, primarily since the creation of conditions for market opening and development in this field requires a new approach compared to the current practice;
- There was no progress in the work on gas Distribution System Code. The Code will be prepared once the basic foundations of natural gas market are adopted in theTransmission System Code;
- Eligible customer status was obtained by seven natural gas customers by the end of 2009. Again, there was no interest expressed for obtaining eligible electricity customer.

2010

- On the session held on May 26, 2010, the Agency Council approved Oil Transport System Code adopted by PE Transnafta, which was afterwards published in the “Official Gazette RS” No. 44/2010 as well as on the websites of PE Transnafta and the Agency. A Commission for Monitoring Implementation of Transport System Code is being appointed. A representative of the Agency will be a Commission member;
- With regards to the Transmission System Code of PE EMS and Distribution System Code adopted by all five companies dealing with electricity distribution, Agency activities imply, above all, analysing inititatives for amendments and supplements to the codes, i.e. the Agency participation in the work of two commissions monitoring codes implementation. Transmission Code commission was appointed by PE EMS, while a distribution commission common for all five distribution companies was appointed by PE EPS. One Agency representative is a member of each of them;
- Intensive efforts were made in terms of analysing the draft of the Market Code which has not been adopted yet. As the market operator, PE EMS submitted Electricity Market Code to the Agency on February 5, 2010 for the purpose of issuing an opinion. On April 16, 2010, the Agency sent an opinion on the Code draft to PE EMS. The most important Agency’s observation was with regards to incomplete legal basis for the proposed Code concept and proposed options. Drafting Market Code is expected to be finalised upon the adoption of the new Energy Law, i.e. the creation of a legal basis for the majority of proposed options;
- In the field of natural gas, there was slow progress made on drafting Natural Gas Transmission and Distribution System Codes. In the first place, it is due to the fact that creating conditions for market opening and development in this sector requires a new approach different from the one that has been taken so far. In addition, the operators are under-experienced in drafting this type of document. The Agency had a great number of remarks and suggestions with regards the options given in the Code proposed by PE Srbijagas. Some of the issues, such as market opening were not included in the Code. Analysis of possible options will be made and an adequate option will be selected. First of all, the operator is expected to intensify its work on the Code draft, while the Agency team will be involved in the analysis of proposed models where necessary. So as to hasten the Code adoption, with the EU assistance, PE Srbijagas engaged a consultant. Therefore, a new draft is expected during 2010. Other natural gas distribution system operators are expected to prepare their Codes only upon the adoption of the Codes of PE Srbijagas operators, for the purpose of system consistency and equal treatment of all system users;
- In 2010, there was no interest expressed as regards obtaining natural gas eligible customer status. A number of eligible customers switched to tariff customers status and therefore, including 2010, there are five natural gas eligible customers. In 2010, there was no interest as regards obtaining electricity eligible customer status either.

3.3 Deciding upon appeals

From the establishment till the end of 2010, 782 appeals were submitted to the Agency. The appeals were submitted both by natural and legal persons against the work and procedures of energy entities from different areas of their operations. 575 of them were filed against decisions of companies dealing with electricity and natural gas distribution with regards connection to the system. Settling these appeals is within Agency competence pursuant to the Law. 207 appeals represent different petitions and complaints of customers, the settling of which is not under Agency jurisdiction to a great extent.

Number of appeals and complaints has been increasing, i.e. in 2006 there were 85 of them, in 2007 – 112, in 2008 – 153, in 2009 – 238. In 2010, the number of appeals somewhat dropped and amounted to 194.

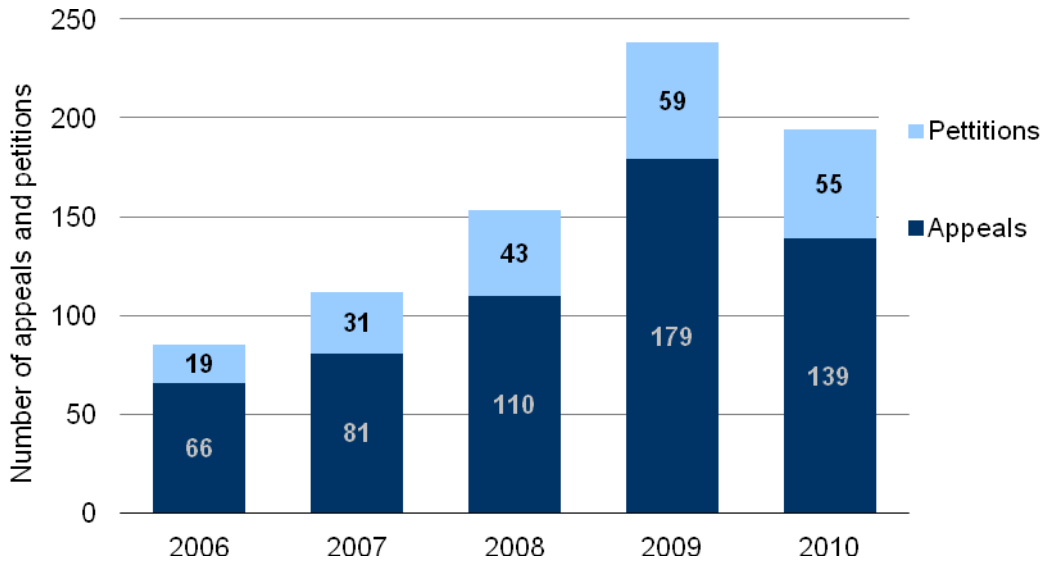


Figure 3. Number of settled appeals and petitions

The Agency processed all 575 appeals within its second instance competence which were filed for the reasons prescribed by the Law, i.e. in the following cases:

- due to failure of a competent energy entity to adopt a decision of first instance upon customer request for connection to electricity or natural gas distribution system (i.e. “administrative silence”) – 175 appeals;
- against decisions adopted by energy entities dealing with electricity or natural gas distribution denying connection to the system – 180 appeals;
- against decisions of energy entities dealing with electricity distribution approving connection to the system; however, the customers complain against connection costs or technical conditions under which the connection was approved, or in case of appeals filed against process decisions of energy entities dealing with electricity distribution on suspension of procedure or dismissal of requests – 220 appeals.

The greatest number of appeals was filed against decisions of electricity distribution companies – 527 appeals, while there were 48 of them filed against natural gas distribution companies.

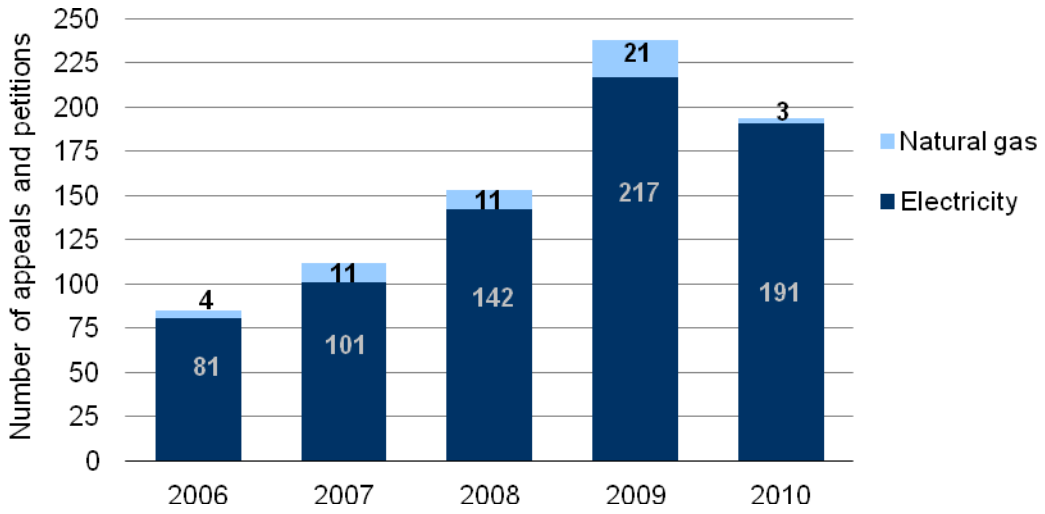


Figure 4. Number of appeals and petitions by sectors

The Agency prepared responses to all petitions and complaints which were not under Agency jurisdiction and submitted them to the complainants. At the same time, they were forwarded to competent state bodies for response purposes.

In the beginning of 2009, in order to reduce the number of appeals and harmonise the practice of electricity distributors applied upon requests for connection of natural or legal persons to the power grid, the Agency made an analysis of all submitted appeals and listed the most common reasons for annulment of decisions on connections in appeal procedures. So as to decrease the number of unlawful decisions adopted by distribution companies, upon the Agency request, a set of expert meetings were held with these companies. In the meetings, the Agency indicated the most common breaches of process and materially-legal regulations which lead to the adoption of unlawful decisions and stressed the commitments of the energy entities in terms of connection procedures prescribed by the law.

3.4 Licences

Upon the adoption of the “Rulebook on Conditions in Terms of Expert Personnel and Procedure for Issuance of Licences for Energy Activities Performance”, published in the “Official Gazette of the Republic of Serbia”, No. 117/2005 as of December 30, 2005, the Agency published prescribed forms and instructions for the submission of requests for the issuance of licences for performance of energy activities on the Agency website. From 2006 till the end of 2010, there were 1243 requests for licence issuance. 115 of them were submitted in 2010. More than 450 requests were submitted immediately before and after July 1, 2006 – the deadline for all energy companies who have already performed energy activities to obtain a licence in line with the Law. Until 2006, the Agency processed all submitted requests, completed the prescribed procedure and issued 132 licences to energy companies which comply with legal conditions. 5 appeals were withdrawn.

In 2007, incomplete requests from 2006 were processed. All requests from 2007 were processed and 288 licences were issued, while 37 requests were suspended.

In 2008, incomplete requests form 2006 and 2007 were processed. All requests form 2008 were processed and 281 licences issued. 81 requests were suspended.

In 2009, incomplete requests from previous years were processed. All requests from 2009 were processed. 115 licences were issued, with 32 requests suspended.

In 2010, incomplete requests from previous years were processed. All requests from 2010 were processed. 65 licences were issued. 46 requests were suspended.

Out of total number of 1243 requests which were submitted by the end of 2010, the Agency settled 1087 of them. 881 of them were licences, 206 requests were suspended.

During the procedure, the greatest number of documents was sent back to energy entities for supplements and corrections. Upon removal of recognised deficiencies and upon filing in all necessary documents, these requests are processed again so as to check the compliance with the conditions for licence issuance. However, the required documents are submitted at slow pace, which is why some requests are sent back to energy entities

more than once. For given reasons, there were 2123 requests and supplements processed by the end of 2010, with more than 100 unsettled requests.

Pursuant to the Law, the Agency keeps the registry of issued and revoked licences. The licence registry statement is published on the Agency website.

The Agency has no authorisation for energy entities which did not comply with the conditions for licence issuance.

Tables 1 and 2 indicate the number of requests and issued licences as of December 31, 2010.

Table 1. Number of requests and issued licences for each energy activity

No.	Activity	Number of requests	Number of processed requests and supplements	Approved licences
1	Electricity production with total installed capacity of 1MW or more*	11	14	6
2	Heat energy production in combined heat power plants – CHPs (combined cycle)	6	8	2
3	Electricity transmission	1	1	1
4	Transmission system operation	1	1	1
5	Electricity market organisation	1	1	1
6	Electricity trade for tariff customers supply	1	1	1
7	Electricity distribution	6	10	5
8	Electricity distribution system operation	6	10	5
9	Electricity retail for tariff customers supply	5	7	5
10	Electricity trade in the electricity market	55	54	46
11	Oil derivatives production	1	1	1
12	Oil pipeline transport	1	1	1
13	Oil product pipeline transport	0	0	0
14	Oil and oil derivatives storage	40	56	14
15	Oil and oil derivative trade	400	494	277
15a	Oil derivatives retail	549	1 163	389
16	Natural gas transmission	2	4	2
17	Natural gas transmission system operation	2	3	1
18	Natural gas storage	1	1	1
19	Natural gas storage operation	1	1	1
20	Natural gas distribution	40	108	36
21	Natural gas distribution system operation	38	91	36
22	Natural gas retail for tariff customers	42	51	36
23	Natural gas trade for tariff customers	13	18	2
24	Natural gas trade in the free market	20	24	11
TOTAL		**1 243**	**2 123**	**881**

* the licence is not necessary for power plants of less than 1 MW

Table 2. Number and share (in percentage) of requests and issued licences per each sector

Energy sector – groups of activities	Number of applications	Processed requests and supplements	Approved licences
Electricity and electricity and heat energy production in combined cycle	93 7.5%	107 5.0%	73 8.3%
Oil and oil derivatives	991 79.7%	1 715 80.8%	682 77.4%
Natural gas	159 12.8%	301 14.2%	126 14.3%

3.5 International activities

3.5.1 Athens Process and Energy Community Regulatory Board (ECRB)

Pursuant to the commitments arising from the Treaty establishing the Energy Community, the Agency actively participates in the work of Energy Community institutions (Energy Community Regulatory Board, Electricity Forum, Gas Forum, Oil Forum and Social Forum), 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 organization and procedures for the functioning of regional and PanEuropean electricity and natural gas markets through an active participation in the work of Energy Community institutions and their expert teams. The President of the Agency Council was elected president of the Energy Community Regulatory Board (ECRB) in late 2008. He held the position until March 2010. An Agency representative has been the chairman of the Energy Community Regulatory Board Working Group for Electricity (ECRB WG-E) since the beginning of 2007.

The Agency participated in the following activities of the Energy Community 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 South Eastern 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 South-Eastern 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 South Eastern Europe.

Natural gas

- preparation of the document ‘SEE Gas Survey 2007’, which includes the survey of infrastructure, legal and regulatory framework and needs for investments in SEE gas sector;
- preparation of regional studies – ‘Study on the Improvement of Interconnection, Interoperability, Transparency and Harmonisation of Operational Rules for Natural Gas Transmission in the Energy Community’ and ‘A Common Regulatory Approach for the Development of the Energy Community Gas Ring’.

Protection of vulnerable customers

- preparation of Guidelines for the protection of vulnerable customers, identifying the options for the protection of vulnerable customers as well as the practice in this field in SEE countries; an Agency representative is the chairman of the sub-group ECRB WG-C which deals with vulnerable customers;
- preparation of the National Action Plan for Protection of Vulnerable Customers – participation in the work of the inter-sectoral working group which works on the plan for a set of measures mitigating negative effect of energy prices growth on vulnerable population;

- preparation of a Report on Quality of Services in the Field of Electricity Delivery and Supply in Energy Community countries, which includes a survey of the legal framework and practice in terms of monitoring and regulation of the quality of services provided in continuity of delivery, voltage quality and commercial quality.

3.5.2 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 South Eastern and Eastern Europe, former USSR, NARUC – USA regulators association, as well as the regulators of certain countries in Asia and Africa. The Agency participates in the following ERRA activities:

- Licensing and Competition Committee – the Agency has been actively participating in the preparation of the Committee documents (identification of the best regulatory practice in several fields of theory and practice of licencing and energy markets). An Agency representative in this ERRA Committee was given a special reward for his contribution in the work of this association;
- Tariff/Pricing Committee - the Agency has been actively participating in the preparation of the Committee documents (identification of the best regulatory practice in several fields of theory and practice of pricing regulation) as well as in the update of the data base on electricity and natural gas prices including ERRA members from Europe and Asia. An Agency representative in this ERRA Committee was given a special reward for his contribution in the work of this association;
- Legal Regulation Working Group – this working group includes legal experts from ERRA members. The aim of their work is experience exchange and the improvement of licencing process, deciding upon appeals and other legal issues dealt with by regulatory bodies. An Agency representative is the Chairman of this working group;
- Technical Regulatory Exchange Program - ERRA financed bilateral experience exchange program between the experts from the Agency and HEO (Hungarian regulator) and SEWRC (Bulgarian regulator);
- Trainings - ERRA provided for the financing for Agency experts and Agency Council members in several training programs for highly specialized field of regulation theory;
- Partnership with Pennsylvania Public Utility Commission – ERRA, i.e. USAID provided for financing of the partnership program between the Agency and PA PUC (Pennsylvania Public Utility Commission) aiming at the exchange of experience, staff training and improvement of regulatory capacities of the Agency and the establishment of a long-term cooperation between the two regulatory agencies; the cooperation was initiated in 2007 and there was a successful follow-up in 2010.

The President of the Agency Council is the member of ERRA Presidium.

The Agency also participated in initial activities on regulatory aspects of regional consolidation of the natural gas transmission system, proposed by MOL Transport (Hungary). The Agency coordinated its activities with the Ministry of Mining and Energy and PE Srbijagas.

3.5.3 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.

3.6 Other activities

In 2008, 2009 and 2010, the Agency sent its proposals on the new Energy Law to the Ministry of Mining and Energy. In 2009 and 2010, the experts from the Energy Agency participated in the Work Group for the preparation of the Law. Apart from that, the Agency sent the proposals for the upgrade of the draft of the Law on Consumer Protection and the Law on Construction to the competent ministries. Upon request of the Ministry of Mining and Energy, the expert team from the Agency participated in the elaboration of the incentive mechanisms for renewable energy sources and analysis of incentive prices of electricity produced from renewables. The Agency also participated in the activities related to the accession of Serbia to the World Trade Organisation.

The Agency has been actively participating in the work of inter-sectoral work group (Ministry of Labour and Social Policy, Ministry of Mining and Energy, Ministry of Finance, PE Elektroprivreda Srbije, PE Srbijagas) with a task of

preparation of a set of measures which would mitigate the negative effect of electricity and natural gas price increase to vulnerable groups of population.

The Agency has initiated amendments of the Decree on Conditions for Natural Gas Delivery, so as to achieve a more distinguished and non-discriminatory calculation of delivered natural gas to customers who had their meters installed without automatic correction of delivered natural gas quantities to referent values of pressure and temperature. The amendments and supplements were made pursuant to the analyses of the previous practice with distributors, solutions applied in other countries and the most common appeals of customers against natural gas calculation procedure.

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

The Agency is dedicated to further professional training of the Agency staff to a great extent. To that end, in 2008 and 2009, apart from the already mentioned training programs, there was a set of trainings in the areas which are important for further improvement of the work of the Agency in the field of price regulation and energy market establishment.

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

The website of the Agency has been reorganised and expanded so as to improve communication with customers, energy entities and other institutions and so as to improve the transparency of the work of the Agency.

4

BASIC DATA ON SERBIAN ENERGY SECTOR

BASIC DATA ON SERBIAN ENERGY SECTOR

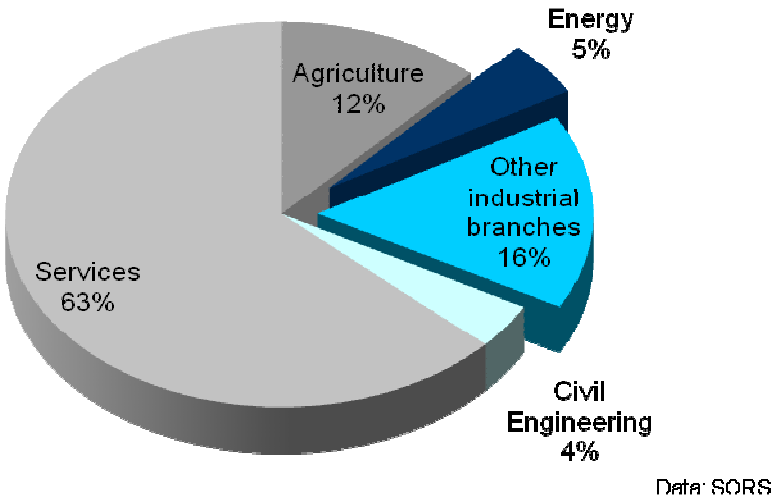
Annual demand of primary energy in Serbia without Kosovo and Metohija amounts to around 15 million tons of equivalent oil (Mtoe). 40% of the demand is imported.

This chapter includes basic data on the energy sector of Serbia, its share in macroeconomic values and comparison with the European Union in 2008. The reasoning behind indicating the data for 2008 is the fact that all the data for 2009 and 2010 have not been made available yet, especially for the European Union. Another reason for using 2008 data for comparison purposes is global crisis and its consequences in 2009, which were affecting the energy sector in particular. It is possible that the data on renewable energy sources share (RES) will be modified because of additional consideration of biomass consumption for heating purposes.

Table 3. Serbia in 2008 and 2009

	Unit	Year	
		2008	2009
Population (in the middle of the year)*	thousands	7 350	7 321
Area*	km^2	77 474	77 474
Gross Domestic Product (GDP)			
Pursuant to official exchange rate*	Billion €	33 418	29 967
Pursuant to official exchange rate*	Billion $	48 857	41 659
Pursuant to purchasing power parity **	Billion $	79 881	78 506
GDP per capita			
Pursuant to official exchange rate*	€	4 546	4 093
Pursuant to official exchange rate*	$	6 647	5 691
Pursuant to purchasing power parity **	$	10 822	10 635
Primary energy consumption***	Million toe	15.67	14.44
Import dependence***	%	40,2	33.7
Final energy consumption***	Million toe	8.41	7.59
RES share in gross final consumption***	%	13	15

** RSO, without Kosovo and Metohija*



***IMF*
**** MME, Energy balance*

Figure 5. Energy share gross added value in Serbia in 2008

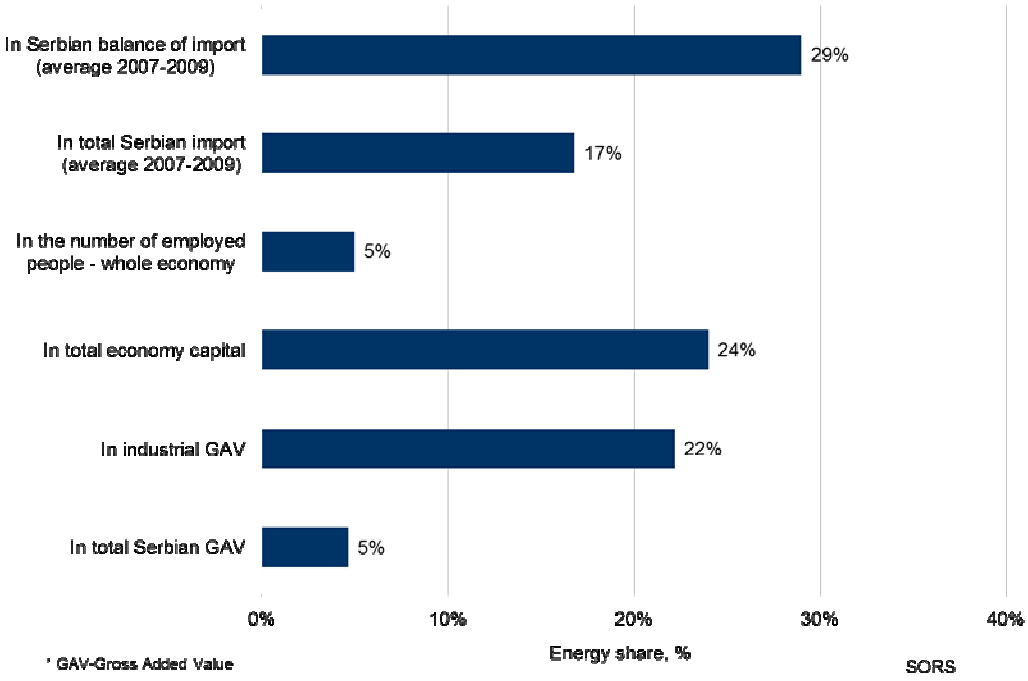


Figure 6. Energy share in gross added value, economy and import of Serbia in 2008

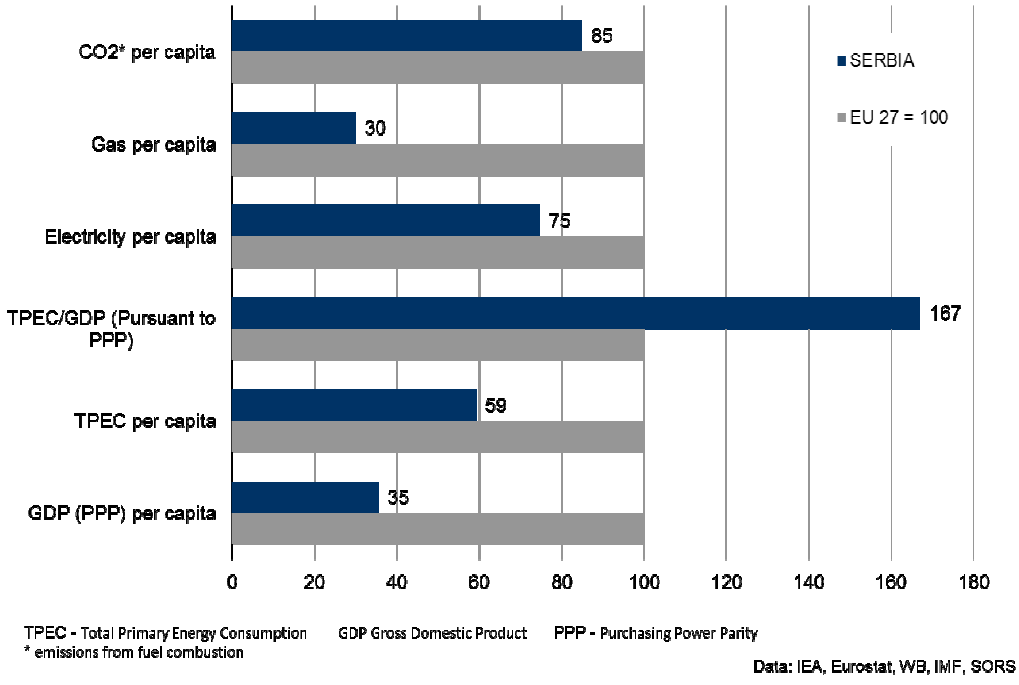


Figure 7. Figure 7. Comparable indicators for Serbia and the EU in 2008

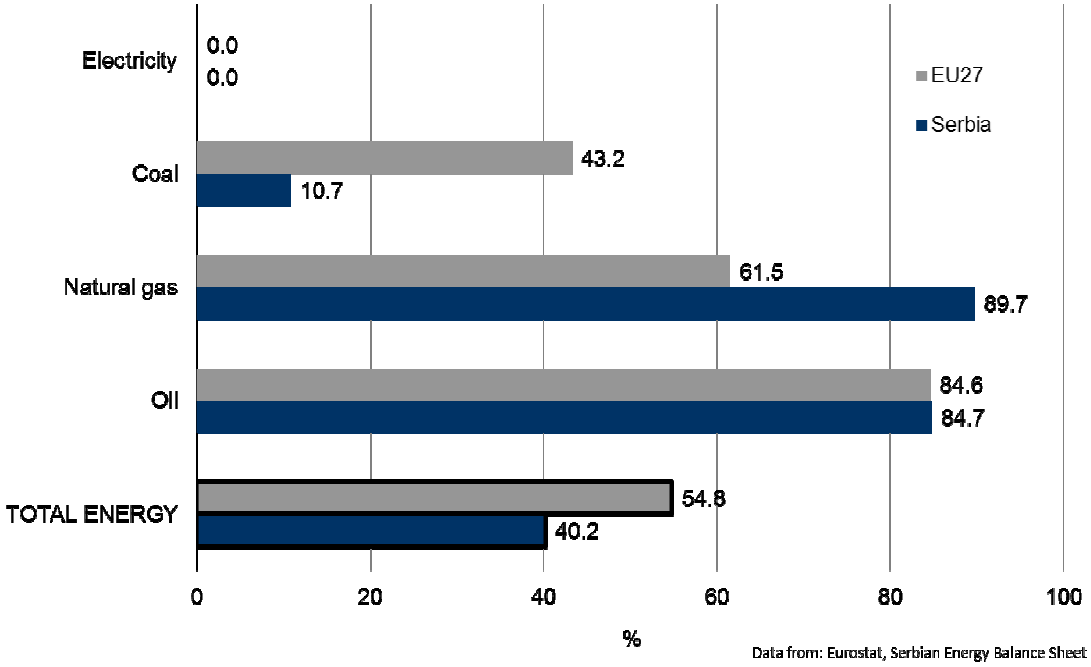


Figure 8. Import dependence of the energy sector of Serbia and of the European Union in 2008

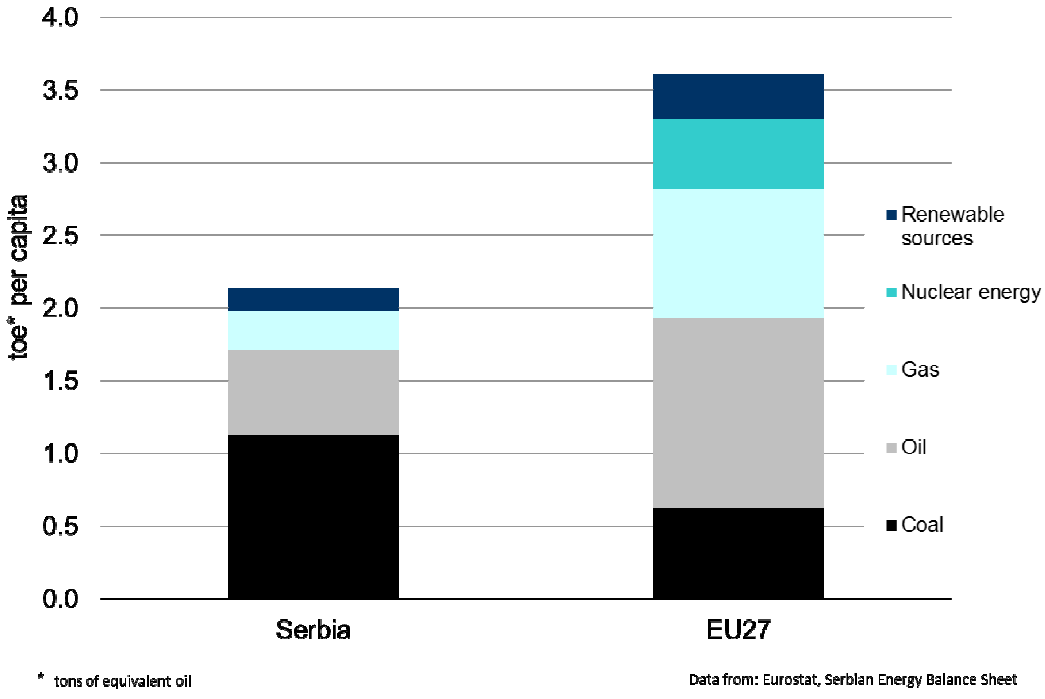


Figure 9. Primary energy consumption per capita in Serbia and the European Union in 2008

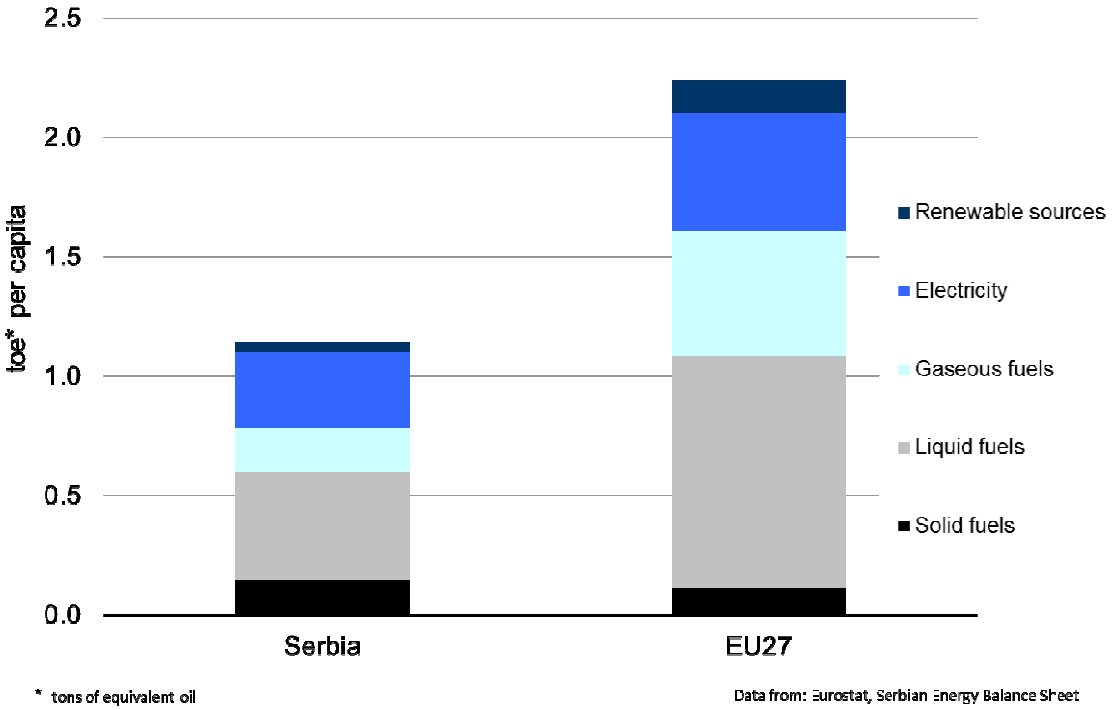


Figure 10. Final energy consumption per capita in Serbia and the European Union in 2008

5

ELECTRICITY

ELECTRICITY

5.1 Structure, capacities, consumption and production

5.1.1 Organisational and ownership structure

The existing structure of the power sector was created in 2005 via unbundling and internal reorganization of the vertically-integrated power public enterprise Elektroprivreda Srbije (Electric Power Industry of Serbia) upon the adoption of the Energy Law in 2004. The power sector structure as it is in the end of 2010 is indicated in Figure 11.

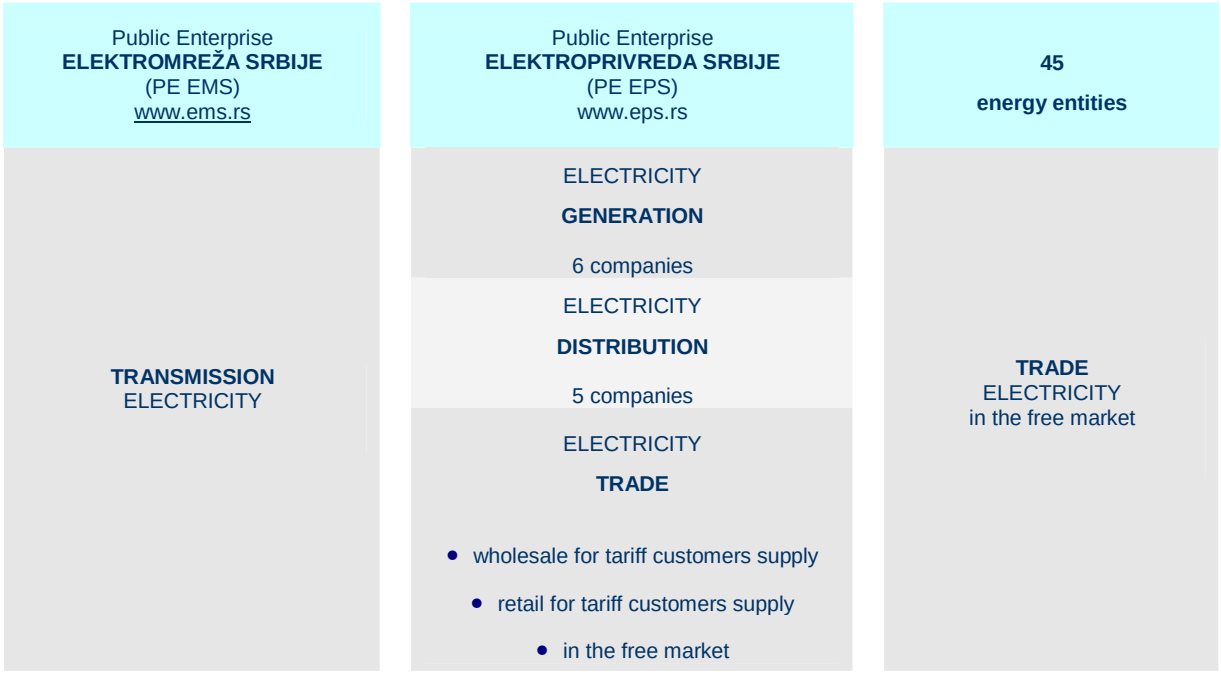


Figure 11. Organisational structure of the power sector

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

- Elektroprivreda Srbije (PE EPS), a vertically integrated company with 11 companies performing energy activities: electricity production, heat energy production in combined heat and power plants, electricity distribution and distribution system operation and electricity trade for the purpose of tariff customer supply, retail for tariff customers and trade in the electricity market;
- Elektromreža Srbije (PE EMS), for electricity transmission, transmission system operation and electricity market organisation (market operator).

Both enterprises are 100% state-owned.

Since 1999, a part of the power system on the territory of the Autonomous Province of Kosovo and Metohija is under UNMIK management.

Until the end of 2010, the Agency issued the licences for electricity trade (which includes wholesale, retail, import and export) in the electricity market to 46 companies. Pursuant to the Law, the trade for the purposes of tariff customers is performed by PE EPS.

5.1.2 Capacities

5.1.2.1 Electricity production

Total net installed capacity of the power plants within PE EPS amounts to 8,379 MW, including hydro power plants and the power plants on the territory of Kosovo and Metohija (KiM), which are under UNMIK jurisdiction. In lignite-fired thermal power plants, the installed capacity amounts to 5,171 MW, in hydro power plants – 2,835 MW, in natural gas-fuelled or mazoute-fuelled thermal power plants - 353 MW, in small hydro power plants – 19.7 MW. The lignite used in thermal power plants is produced in open pits which belong to PE EPS.

Total net installed capacity of the power plants within PE EPS out of the territory of KiM, including small hydro power plants amounts to 7,144 MW with the structure indicated in Figure 12. In thermal power plants, it amounts to 55% while in hydro power plants – 40%. Among other hydro power plants within 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 19.7 MW.

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

Table 4. Capacities for electricity production in 2010 (without KiM)

MW

Technology	Installed capacity
Hydro power plants	2 835
Thermal power plants (coal)	3 936
Thermal power plants – district heating companies	353
Gas fuelled power plants	-
Nuclear power plants	-
Other sources (renewable sources) – small PE EPS power plants	20
Small power plants –independent producers	55
TOTAL INSTALLED CAPACITY	**7 199**

The licences for electricity production are obtained by companies (economic entities) (C/EE), PE EPS associate companies, with electricity production as the core operation – C/EE Hidroelektrane Đerdap llc, C/EE Drinsko-Limske hidroelektrane llc, C/EE Termoelektrane Nikola Tesla llc, C/EE Termoelektrane i kopovi Kostolac llc and C/EE Panonske termoelektrane – toplane llc.

Other licence holders for electricity production include C/EE for electricity distribution Elektrosrbija llc, C/EE for electricity distribution Jugoistok llc and the company Milan Blagojevic – Namenska JSC Lucani, with small-scale production facilities connected to the distribution grid.

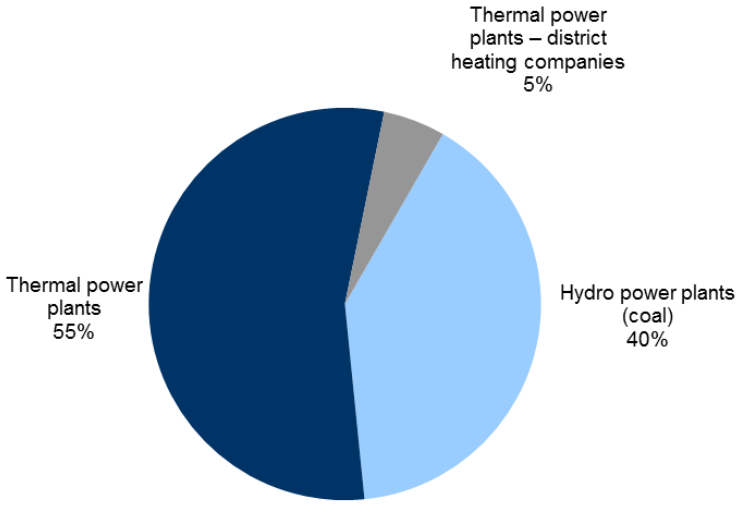


Figure 12. Structure of PE EPS production capacities in 2010 (without KiM)

5.1.2.2 Electricity transmission

The electricity produced in local power plants and from neighbouring systems is taken over into the transmission system and delivered to the customers connected to the transmission system, power distribution companies and neighbouring systems. The transmission system includes the lines with voltage of 400, 220 and 110 kV, with total length of over 9 400 km, transformer stations of installed capacity of around 17 100 MVA and 7 switchgear plants, owned by PE EMS and around 9 350 MVA installed in transformer stations owned by companies for electricity distribution, power plants, industrial customers, Železnice Srbije (Serbian Railways), etc.

Table 5.Transmission system of PE EMS (without KiM) in the end of 2010

Technical characteristics	Unit	Size, number
Network length per voltage levels	km	8 907
400 kV	km	1 514
220 kV	km	1 882
110 kV	km	5 512
Number of transformer stations		82
Number of switchgear plants		7
Number of (active) interconnections		25 (24)

5.1.2.3 Electricity distribution

Electricity distribution on the territory of Serbia without Kosovo and Metohija is performed within five companies for electricity distribution - Elektrovojvodina LLC Novi Sad, Elektrodistribucija Beograd LLC Belgrade, Elektrosrbija LLC Kraljevo, Jugoistok LLC Nis and Centar LLC Kragujevac. Distribution system without the territory of Kosovo and Metohija contains around 157,000 km of distribution lines, with voltage of 110, 35, 20, 10 and 0.4 kV and 34 735 MVA transformer stations with total installed capacity of 25 887 MVA through which electricity is distributed to end users.

There are 32,874 transformer stations owned by companies with total installed capacity of 24,735 MVA and around 151,000 km of distribution lines of all voltage levels. Their structure is given in Table 6.

Table 6. Distribution lines length in the end of 2010 (without KiM)

km

Voltage level	Distribution company					Total
	Elektrovojvodina	EDB	Elektrosrbija	Jugoistok	Centar	
110 kV	15	31	269	106	115	**536**
35 kV	1 377	978	2 289	1 681	702	**7 026**
20 kV	6 983	0	1 458	0	0	**8 441**
10 kV	660	4 264	13 086	9 234	3 852	**31 095**
0,4 kV	13 530	11 243	47 731	19 487	11 965	**103 956**
Total	**22 565**	**16 516**	**64 833**	**30 508**	**16 634**	**151 054**

5.1.3 Electricity consumption and production

Electricity demand in Serbia is met from local sources, based on local lignite reserves and hydro potential. After a 10-year stagnation and production decline in the 90s, PE EPS managed to increase the production level from existing capacities for around 30% from 2000 to 2010.

Table 7. Electricity production and consumption in period 2005 – 2010 (without KiM)

GWh

	2005	2006	2007	2008	2009	2010
Hydro power plants	11 924	10 850	9 930	10 011	11 045	12 420
Coal fired thermal power plants	22 138	23 361	24 016	24 661	24 880	23 162
Thermal power plants – district heating plants	382	180	483	367	139	222
Other power plants	57	53	40	40	48	61
Total production	**34 501**	**34 444**	**34 469**	**35 079**	**36 112**	**35 865**
Other (UNMIK)	1	21	88	0	44	93
IMPORT						
Electricity import	662	853	792	616	121	755
Long-term contract with EP Montenegro	1024	993	647	797	1116	1463
Annual contracts	3	0	249	121	85	86
Total import	**1 689**	**1 846**	**1 688**	**1 534**	**1 322**	**2 304**
TOTAL AVAILABLE	**36 191**	**36 311**	**36 245**	**36 613**	**37 478**	**38 262**
Electricity export	1 076	812	249	173	1 442	1 286
Long-term contract with EP Montenegro	1 285	1201	1 235	1220	1 184	1 204
Annual contracts	16	23	246	115	94	69
Total export	**2 377**	**2 036**	**1 730**	**1 508**	**2 720**	**2 559**
Pumping	962	852	864	878	903	1 049
Other (UNMIK)	169	99	133	59	71	145
Gross consumption	**32 683**	**33 324**	**33 518**	**34168**	**33 784**	**34 509**
Transmission network losses	1 423	1 295	1 286	1 224	1 106	1 065
Distribution network losses	4 225	4 434	4 583	4 671	4 864	4 957
Total losses	5 648	5 729	5 869	5 895	5 970	6 022
Losses to gross consumption rate	17.3%	17.2%	17.5%	17.3%	17.7%	17.5%
Final consumption	**27 035**	**27 595**	**27 649**	**28 273**	**27 814**	**28 487**

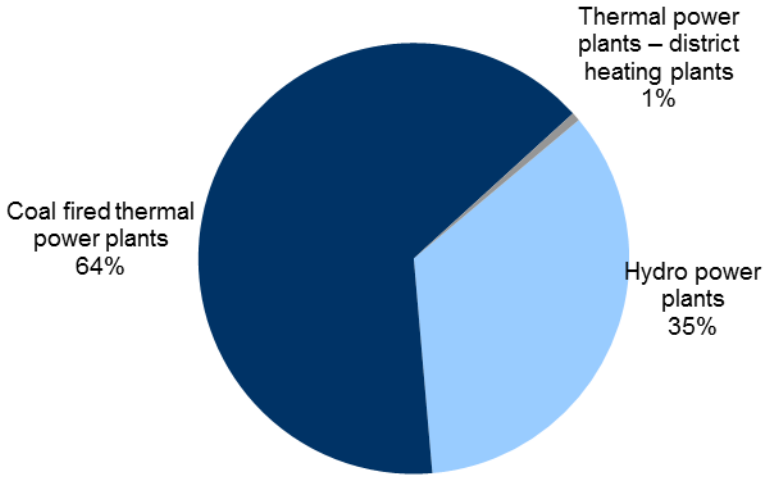


Figure 13. PE EPS production structure (without KiM)

In 2005-2010, total gross electricity consumption in the Republic of Serbia without the territory of KiM was increased for 5.6%, from 32 683 GWh in 2005 to 34 509 GWh in 2010, nevertheless there was a decrease in economic activities in 2009 and 2010 caused by global economic crisis. However, nevertheless the consumption growth trend, after the rehabilitation of power plants in the last 10 years, electricity import is necessary only in the coldest winter period and PE EPS became an electricity net exporter.

In 2010, in the power plants connected to the transmission and distribution system in Serbia, production reached 35 865 GWh. Thermal power plants fired by coal produced 64.6%, hydro power plants 34.6%, thermal power plants – district heating companies 0.6% and others, mostly small power plants connected to the distribution system – 0.2% of electricity. In 2010, there was outstanding production level in hydro power plants because of high inflows most of the year.

5.2 Regulation of energy activities in electricity sector

5.2.1 Unbundling of energy activities

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

Electricity transmission and transmission system operation were separated in 2005 into a separate company PE Elektromreža Srbije.

Within PE EPS, electricity production is separated into five companies. Electricity distribution is also performed in five companies which, in addition, perform electricity supply for tariff customers. Accounts are unbundled into distribution and supply areas, but there are different approaches in different companies in terms of criteria for separation of funds and personnel. The Energy Law did not prescribe legal unbundling of distribution and supply activities and these activities are performed in integrated distribution companies. Amendments and supplements to the Energy Law imply the separation of these activities in terms of legal form, which is also one of commitments arising from the Treaty establishing the Energy Community.

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

Table 8. Unbundling of energy activities

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

5.2.2 Price regulation

Although the new by-laws framework for price regulation, methodologies and tariff systems, were adopted by the Agency in 2006 and in early 2007, its implementation was initiated only in 2008, i.e.:

- electricity transmission prices since January 2008 (prices correction was made in August 2008) and
- electricity prices for tariff customers since 2008 (prices correction was made in August 2008).

Electricity distribution prices have been applied only since March 1, 2010. The most important reason for that is the delay in accounting unbundling of energy activities in companies for electricity distribution.

Electricity prices in Serbia are still under the “economic” level, which would provide for an adequate profit level, apart from covering operational costs and depreciation, which would secure a long-term sustainability of the system and the security of supply.

Figure 14 indicates electricity price structure for tariff customers, which has been applied since April 2010.

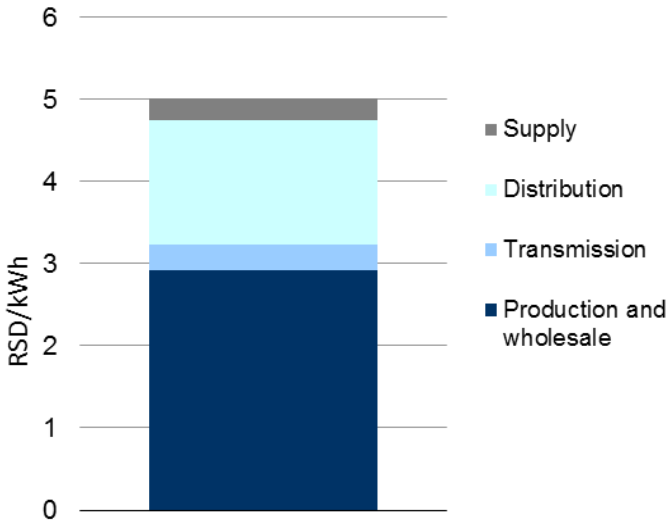


Figure14. Average selling electricity price structure for tariff customers

Figures 15 and 16 indicate the comparative survey of electricity prices for reference customers in households and industry in Serbia, the EU members and the region in the second half of 2010 calculated in line with EUROSTAT methodology. The prices in Serbia were the lowest ones in this period for both customer categories.

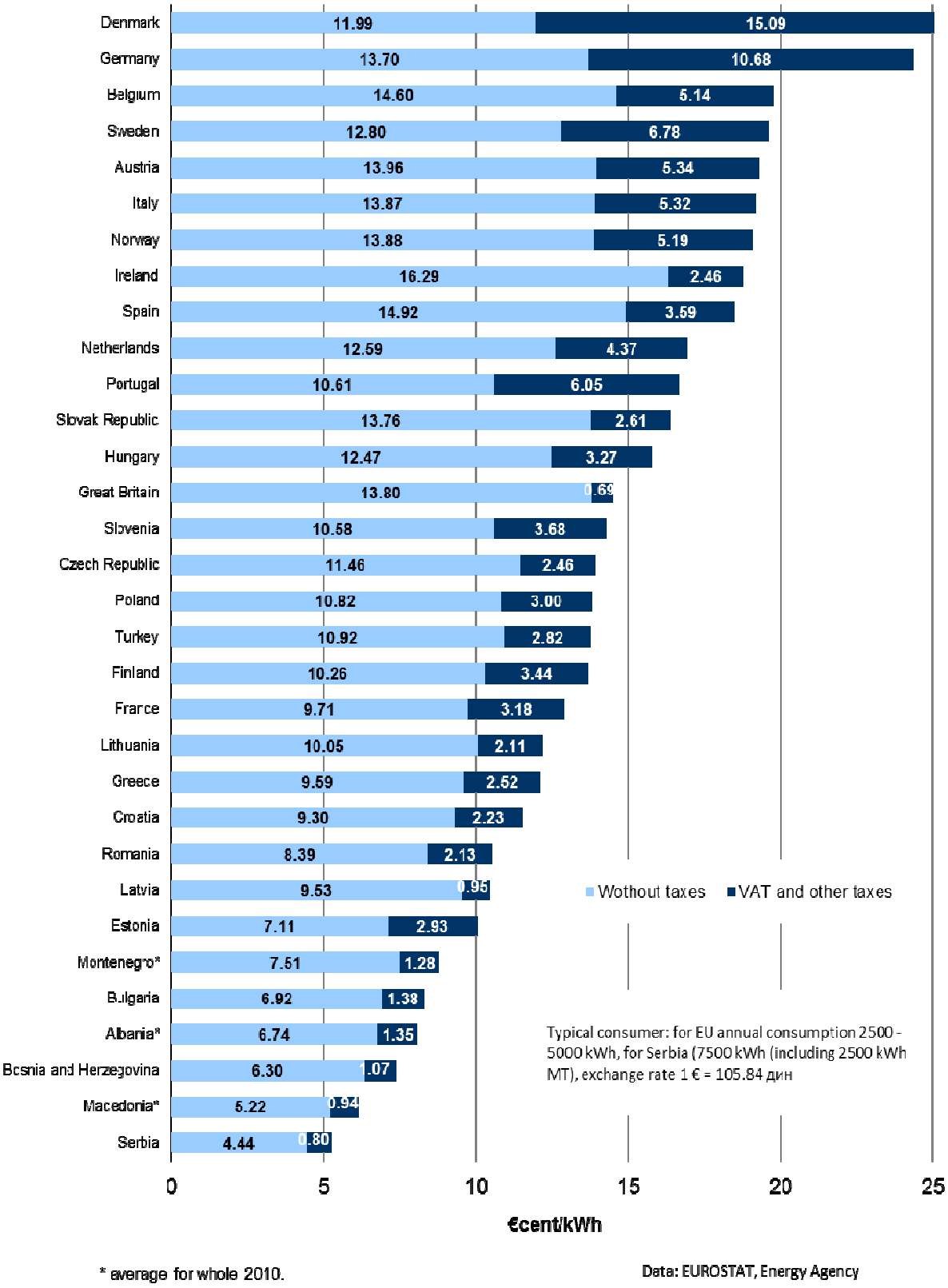


Figure 15. Household electricity prices – second half of 2010

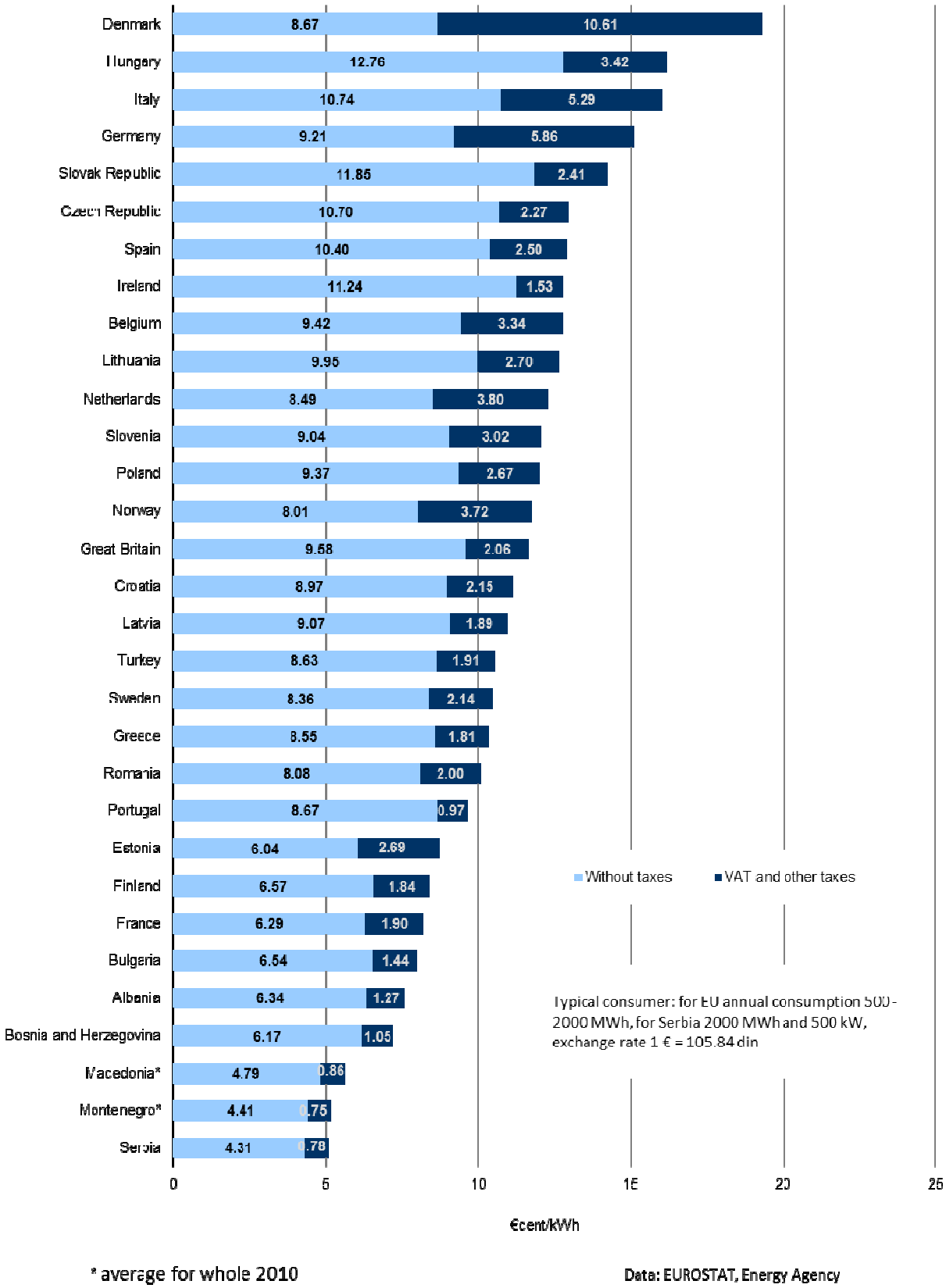


Figure 16. Industrial sector electricity prices – second half of 2010

Since 2000, electricity price have become several times higher (Figure 17). In the 90s, electricity price in Serbia was in the range 0.8 – 4.4 USc/kWh.

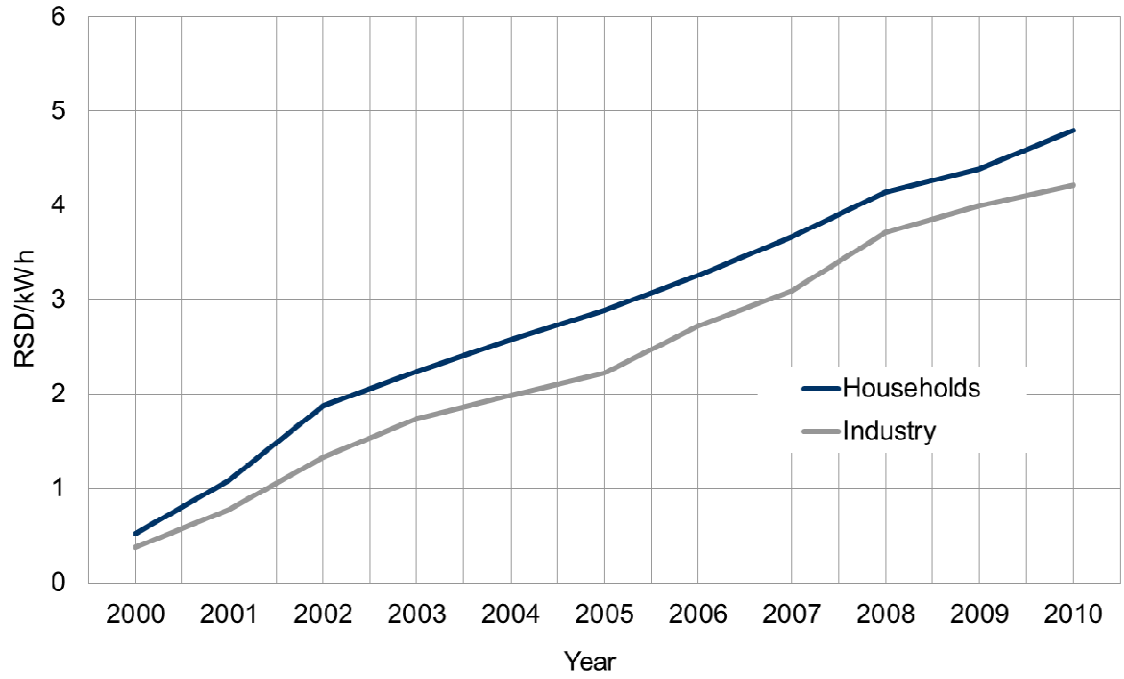


Figure17. Electricity price per customer category in 2005-2010

PRINCIPLES AND PROCEDURE FOR PRICE REGULATION

Regulated prices and free prices of energy and energy carriers

Energy sector reforms stipulated by the Energy Law should, among other things, provide for a free trade in electricity and natural gas market. So as to make this possible, it is necessary to separate transmission and distribution systems and these systems operation on legal, functional and accounting level from production, trade and other non-energy related activities and regulate them as natural monopolies in a specific way. Thereby, these activities are awarded with a special status, which implies an obligation on the side of energy entities performing these activities to provide their services to all market players – producers, customers and traders under the same conditions based on principles of transparency and non-discrimination at the prices established in advance, in line with regulated methodologies and tariff systems.

Tariff customers who are not in a position to select their supplier on their own will be supplied by electricity and natural gas at regulated prices. For this reason, trade for tariff customers' supply, i.e. retail trade for tariff customers supply are regulated in line with the rules for regulated activities.

Eligible customers can select electricity, i.e. natural gas supplier on their own at a price they agree on, while they pay for transmission and distribution services at regulated price.

Price regulation principles

Price regulation for products and services in the energy sector is performed based on the following principles: covering justifiable costs which provide short-term and long-term security of supply, i.e. sustainable system development, economic efficiency, stimulation of rational consumption, non-discrimination, i.e. equal conditions for all customers/users, as well as regulation efficiency, in line with the European Union regulations.

How are regulated prices of energy and services established?

The Agency establishes methodologies for price regulation and adopts tariff systems. Tariff systems are approved by the Government of the Republic of Serbia.

***Methodologies** for the establishment of tariff elements for calculation of prices determine procedures and rules for the establishment of maximum allowed revenue (MAR/MOP) and its allocation to tariff elements. Maximum allowed revenue is determined based on Rate of return method which implies that the revenue of an energy entity compensates for all justifiable costs arising during the regulated period through the performance of regulated energy activity, including adequate recovery of funds.*

General formula for calculation of maximum allowed revenue reads as follows:

$$MOP = OT + AM + PR * RS - OP + KE$$

where:

OT - allowed operating costs which include costs for procurement of materials, fuel, salaries, production services and non-material costs;

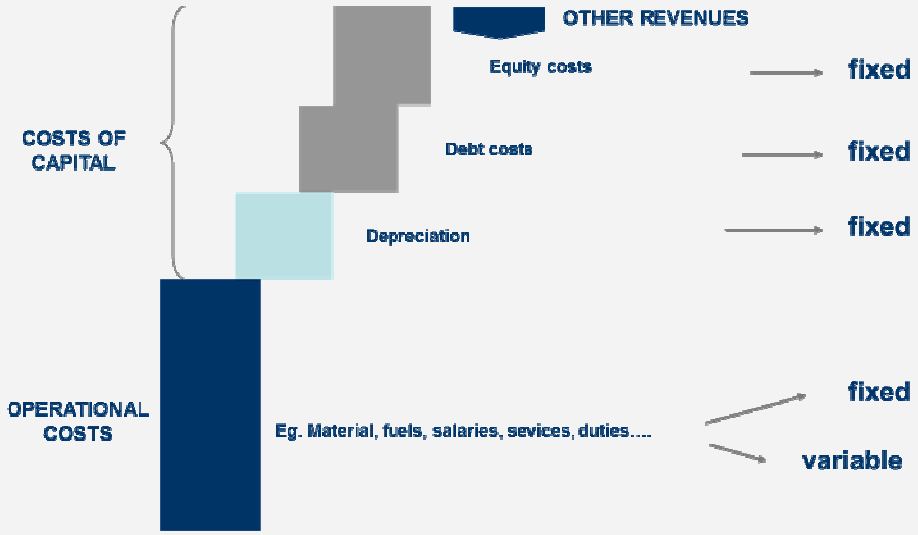
AM - depreciation costs in the regulatory period which include depreciation costs both for existing funds and for the funds which will be active in the regulatory period;

PR - return for active funds which a company can generate and which is calculated as weighted average cost of capital (PPCK) arising from the rate of return on equity and the rate of return on debt;

RS - regulated funds, i.e. net value of non-material investments, real estate, plants and equipment active in regulated operations;

OP - other revenues which a company can generate during the regulatory period, which were generated through the engagement of the funds allocated for core (regulated) operations, which can represent revenues from sales of by-products and services, revenues from sales of funds, etc.;

KE - correction element which corrects the deviations between planned maximum allowed revenue and the revenue generated by the company in the previous regulatory period.



Elements of maximum allowed revenue

Tariff elements are physical dimensions presenting the value of a product, i.e. service. In case of electricity, tariff elements, depending on concrete activity and the category of users, i.e. customers include: power, active energy, reactive energy and metering point, while in case of natural gas: energy carrier, capacity and metering point.

The amount of maximum allowed revenue which is allocated to certain tariff elements depends on the share of variable and fixed costs in total costs, energy balance sheets, structure and the network value, the ration between minimum and maximum system load and other objective technical and economic parameters.

***Tariff system** represents a set of rules and criteria based on which the maximum allocated revenue of the regulated activities is allocated to certain categories and groups of customers via tariff elements and tariff rates.*

Since each customer/user generates different costs with an energy entity, depending on the point of connection to the system and the energy consumption scheme, it is crucial to set the allocation criteria for maximum allowed revenue for energy customers, i.e. system users.

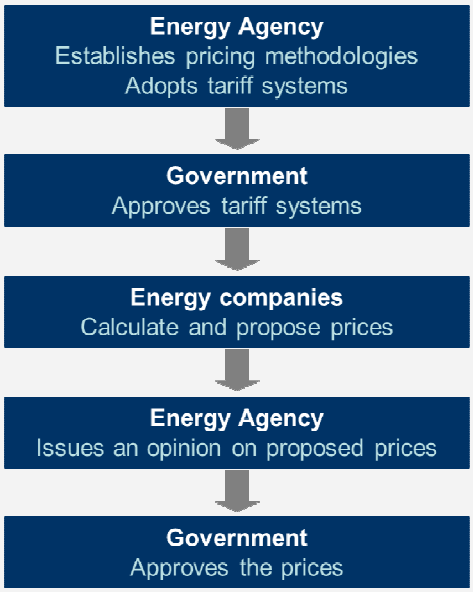
Tariff rates are numeric expressions of tariff elements, which depend on conditions for energy taking over, quantities and purpose of energy consumption and metering method. Prices for an individual customer/user, category or a group of customers/users based on which the amount each customer/user should pay for energy consumption, i.e. for the energy transmission/transport and distribution are established via the implementation of tariff rates to adequate quantities (tariff elements).

Elements for billing, as well as the method of billing the energy, i.e. transmission and distribution services for these systems users delivered to tariff customers, are determined by tariff systems.

Procedure for calculation of electricity and natural gas prices

Energy entities with regulated activities use methodologies and tariff systems to calculate and propose the prices of products (electricity, natural gas), i.e. services (transmission, distribution) for the following regulatory period and submit them to the Agency for opinion purposes. During the procedure of issuing opinion on proposed prices, based on submitted technical and economic data and other sets of documents, the Agency evaluates whether the prices were calculated in line with the methodologies and tariff systems, as well as whether the costs which were taken into account during the calculation of

maximum allowed revenue were justified. The Agency sends the opinion to the energy entity. The energy entity sends the price proposal with the Agency opinion to the Government for approval procedure.



Competence on price regulation

5.2.3 Regulation of electricity transmission

5.2.3.1 Electricity transmission and transmission system operation

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

Being an energy entity performing electricity transmission, PE EMS maintains the transmission system and interconnectors, ensures operational efficiency and functioning of the transmission system as a whole, takes safety measures during the use of transmission system and other transmission capacities, as well as the measures for environment protection and provides for transmission system development pursuant to five-year development plans. Table 5 indicates basic technical characteristics of the transmission system.

Being transmission system operator, PE EMS is in particular responsible for:

- establishment of technical-technological conditions for the connection of power facilities, devices and plants into a common system;
- operational management of transmission system;
- monitoring of the situation in production, transmission and distribution facilities, and approval of overhaul schedule for transmission system facilities;
- provision of security of power system operations;
- provision of system services (regulation reserve, regulation of frequency and exchange power, voltage regulation, etc.);
- obtaining rights for the use of available cross-border transmission capacities on interconnections of the Serbian power system;
- settling the problems with overload of transmission system elements, while securing equal position of all entities;
- harmonisation of operation handling in the transmission system;
- parallel operations of the power system of the Republic of Serbia and neighbouring power systems;
- realisation of cooperation with electricity market operator during planning and calculation of withdrawn electricity;

- harmonisation of deviations in electricity demand from contracted quantities;
- necessary amendments to the schedule of production capacities use in case of endangered security of power system operations, damages, wider deviations of consumption from contracted volumes, etc.

Since February 2007, the Methodology on Criteria and Procedure for Establishment of Costs for Connection to Electricity transmission and Distribution System has been implemented. After a two-year implementation period, the Methodology was amended and supplemented in early 2009.

After the favourable opinion of the Agency and the approval of the Government of the Republic of Serbia, on January 1, 2008, transmission prices were calculated in line with the Tariff System for Electricity System Access and Use, and the Methodology for Establishment of Tariff Elements for Calculation of Prices for Access and Use of Electricity transmission System for the first time. Prices were modified on August 1, 2008. In December 2009, the Agency issued an opinion in favour on new prices for the use of the electricity transmission system which have been applied since March 1, 2010.

Table 9. Transmission system tariffs

RSD/unit

Tariff element	Tariff rate	Unit	Tariffs 01/01/2008	Tariffs01/08/2008	Tariffs 01/03/2010
Power	Calculated power	kW	38.4331	41.6073	46.2279
	Extra power	kW	76.8662	83.2146	92.4558
Active energy	Higher day-time	kWh	0.1482	0.1623	0.1791
	Lower day-time	kWh	0.0741	0.0811	0.0895
Reactive energy	Reactive energy	kvarh	0.0942	0.1004	0.1171
	Extra reactive energy	kvarh	0.1884	0.2007	0.2342

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

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

Table 10. Harmonisation of PE EMS tasks with the requirements form Article 9 of Directive 2003/54/EC

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

5.2.3.2 Transmitted electricity quantities

In the period 2005-2010, electricity quantities transmitted through the transmission network on the territory of the Republic of Serbia without KiM, amount to between 41,200 GWh and 43,900 GWh. The biggest share of energy was delivered to electricity distribution systems (typically annually slightly above 70%), to the neighbouring systems, pump storage and pump plants for the purpose of pumping and to customers and other users whose facilities are directly connected to the transmission system. In this period, transmission grid losses were reduced for 3.38% of the total energy withdrawn in the transmission system in 2005 to 2.57% in 2010.

Table 11. Transmitted energy, maximum consumption and transmission grid losses in period 2005-2010(without KiM)

	Unit	2005	2006	2007	2008	2009	2010
Transmitted electricity	GWh	42 370	42 958	43 335	43 863	41 198	41 352
Maximum daily gross consumption	GWh	131 758	135 451	131 944	132 915	134 736	134 929
Maximum hourly load	MW	6 026	6 256	6 408	6 596	6 392	6 579
Transmission system losses	GWh	1 433	1 295	1 287	1 224	1 106	1 065
Transmission system losses (as % of transmitted electricity)	%	3.38	3.02	2.97	2.79	2.68	2.57

Electricity consumption in Serbia varies by season and therefore, maximum consumption is typically seen in wintertime either during the coldest days or immediately before holidays.

Maximum hour-to-hour load in period 2005-2010 amounted to 6 596 MW, realized on December 31, 2008 with average daily temperature of -5.9°C.

Maximum daily gross consumption amounted to 134 929 MWh realized on December 31, 2010 with average daily temperature of -8.4°C.

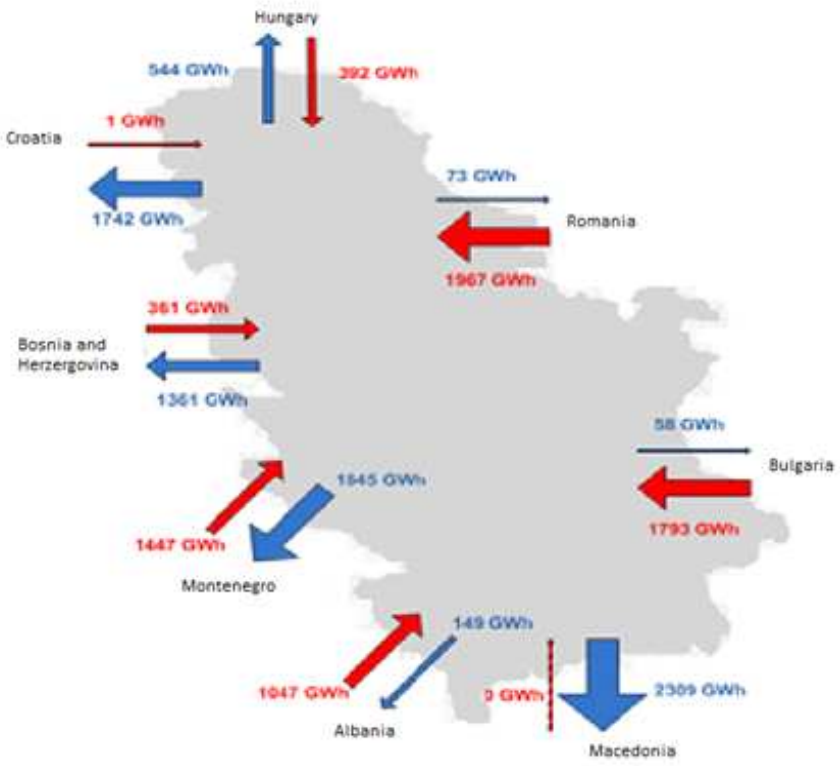


Figure18. Physical exchange of electricity on the borders of control areas in the Republic of Serbia in 2010 (GWh)

5.2.3.3 Allocation of rights for the use of transmission capacities on interconnection lines

Being the electricity transmission system and market operator in Serbia, PE Elektromreža Srbije 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.

The Republic of Serbia has eight borders and eleven interconnection lines (400kV and 220kV) where PE EMS allocates the rights to use transmission capacities on the segments of interconnection lines (PE EMS and neighbouring transmission system operators have 50% each of transmission capacity).

During 2006, PE EMS allocated the rights for the use of cross-border transmission capacities in line with the principles „first come-first serve" and „pro-rata". So as to comply with the requirements from the EU Regulation 1228/2003, the Republic of Serbia is obligated to apply these by the ratification of the Treaty establishing the Energy Community.

In 2007, PE EMS introduced market-oriented model of explicit auctions on all borders and in all directions of the control area of the Republic of Serbia. PE EMS implements annual, monthly and weekly explicit auctions whereas the payment in case of congestion is organised in line with „pay as bid"method. Pursuant to the requirements of the Regulation 1228/2003, in terms of transparency, relevant information on the auctions are published on the website of PE EMS, while a set of data is published on *entsoe.net* platform.

Since 2008, in order to develop a secondary cross-border capacity market, PE EMS has introduced the possibility to transfer the allocated right for the use of the cross-border capacity between market players (transfer of capacity rights), free of charge, with the permission and consent of PE EMS.

In 2009, PE EMS allocated available cross-border transmission capacities on the borders of the control areas of the Republic of Serbia pursuant to the Rules for Allocation of Available Cross-Border Transfer Capacities on Borders of Control Area of Republic of Serbia and Balancing of Market Participants Schedules for period 01/01/2009 – 31/12/2009". PE EMS organizes and implements explicit auctions for cross-border transmission capacities on all the borders of the control areas of the Republic of Serbia on annual, monthly and weekly level. PE EMS implemented explicit auctions for 50% of available capacity with the payment in line with "pay as bid", while the allocation of the other 50% of capacities was organised by transmission system operators from the neighbouring countries, in line with their rules. All energy entities holding the licence issued by the Agency for electricity trade and with a contract signed with PE EMS "Contract on the right to use cross-border transmission capacity on the borders of control areas of the Republic of Serbia and operation plan balancing, for the period 01/01/2009 – 31/12/2009" were liable to bid. In 2009, 31 market players were liable to participate in the auctions. 18 of them actively participated in the auctions. Based on the Code published in November 2008, the first annual auctions for cross-border capacities for 2009 were organised. Annual auctions were organised on the following borders in both directions: Albania – Serbia, Bosnia and Herzegovina – Serbia, Croatia – Serbia, Hungary-Serbia, Macedonia – Serbia. In total, there were 15 participants and there was congestion on each border/direction. The general data on annual auctions are given in Table 12.

Table 12. General data on annual auctions for cross-border transmission capacities in 2009

Border – direction	Congestion scale: total requested/total allocated capacity	Number of participants in auctions	Price of the last accepted offer in case of congestion EUR/MWh
Alb-Ser	3.00	5	0.03
Bosnia and Herzegovina-Ser	4.30	11	0.30
Cro-Ser	3.80	10	0.64
Hun- Ser	4.30	12	0.81
Mac- Ser	5.40	9	0.52
Ser - Alb	6.56	10	1.83
Ser – Bosnia and Herzegovina	3.80	10	0.33
Ser -Cro	4.40	11	0.73
Ser - Hun	5.50	13	0.85
Ser - Mac	8.80	13	1.71

In 2009, PE EMS organised monthly auctions for each month, on all borders and in all directions, and there were 18 market players in total. In wintertime, when trade transactions are intensive on bilateral electricity market in the South-Eastern Europe region, on monthly auctions almost all directions face congestions almost all the time, due to considerable transit through the Serbian transmission system in direction north-northeast to south-southwest. In summer time, some of directions (Hungary – Serbia, Romania – Serbia, Serbia – Bulgaria,

Montenegro – Serbia, Albania – Serbia, Macedonia – Serbia) are from time to time out of overload mode and therefore, there are no congestions due to reduced volume of transactions in the electricity market in the region and reduction of transit through Serbian interconnections.

General data on monthly auctions are given in Tables 13 and 16.

Table 13. General data on monthly auctions of cross-border transmission capacities in 2009

Border – direction	No. of days with "0" capacity	Number of congestions/total number of auctions	Congestion scale: total requested/total allocated capacity	Number of participants in auctions (min.-max.)	Price of the last accepted offer in case of congestion EUR/MWh
Alb-Ser	5	7 / 14	1.10 – 1.80	0-5	0.01 – 0.21
Bosnia and Herzegovina-Ser	28	12 / 12	1.70 – 3.05	6-11	0.11 – 1.10
Bul-Ser	5	19 / 19	1.03 – 3.36	5-12	0.01 – 2.45
Cro-Ser	20	14 / 14	1.30 – 2.60	4-9	0.03 – 8.81
Hun- Ser	3	13 / 14	1.34 – 8.00	8-12	0.03 – 1.15
Mon-Ser	0	10 / 12	1.13 – 2.11	6-11	0.01 – 0.32
Mac- Ser	186	7 / 8	1.13 – 2.57	2-6	0.06 – 0.37
Rom-Ser	6	28 / 28	1.13 – 3.40	8-13	0.03 – 8.81
Ser – Alb	10	18 / 18	1.93 – 4.48	3-9	0.68 – 7.67
Ser – Bosnia and Herzegovina	0	16 / 16	1.15 – 2.60	4-8	0.02 – 0.41
Ser-Bul	5	15 / 15	1.03 – 4.70	5-13	0.01 – 5.67
Ser –Cro	20	15 / 16	1.33 – 5.40	3-11	0.10 – 1.30
Ser - Hun	3	15 / 15	1.35 – 3.80	10-15	0.10 – 2.60
Ser-Mon	0	21 / 21	1.12 – 2.85	5-9	0.06 – 0.59
Ser-Rom	5	17 / 17	1.15 – 2.97	5-12	0.10 – 5.23
Ser - Mac	6	14 / 15	1.25 – 2.70	5-12	0.03 – 0.21

Since January 2009, PE EMS initiated the implementation of weekly auctions for the allocation of available cross-border transmission capacities where full capacity available after annual and monthly auctions was offered. The first weekly auctions were organized by PE EMS in the first week of February 2009 and all the way during 2009. Only in February 2009, there was more interest shown for the participation in weekly auctions, since only in this period, PE EMS could offer considerable available capacity over 1-2 MW which was the average available transmission capacity in other weekly auctions in 2009. Namely, for February 2009, PE EPS turned back the whole already allocated capacity on the borders with Hungary, Romania, Bulgaria and B&H, and this capacity was available for weekly auctions. On average, there were 10 participants in these auctions. The greatest interest was shown for the capacity on directions Romania-Serbia and B&H-Serbia, the least interest for direction Albania-Serbia. Since March 2009 till the end of 2009, there were few offers of capacities on weekly auctions, due to a low value of available transmission capacity (ATC) after monthly auctions and constant congestions on all borders and directions on monthly auctions.

The Code enables the transfer of allocated transmission capacity so as market players could be offered as great capacity as possible, in line with the requirements of the Regulation 1228/03. Transfer of capacities on Hungarian-Serbian border in 2009 was organized on a weekly level, while there was a possibility of daily transfer on other borders.

PE EMS concluded "Technical agreement on reservation of cross-border transmission capacities on the borders of control areas of the Republic of Serbia" for 2009 with PE EPS so as to secure cross-border capacities for the realization of long-term contract on operational and technical cooperation with PE EPS and Elektroprivreda Crne Gore (EPCG) as well as for the procurement of the missing electricity quantities for the purpose of tariff customers supply in the Republic of Serbia. Table 14 includes the data on PE EPS already allocated capacities.

Table 14. PE EPS allocated cross-border transmission capacities in advance in 2009

MW

	Ser-Mon	Hun-Ser	Cro-Ser
January	55		
February	55		
March	55		
April	55		
May 01-18 19-31	 55 71		
June	110		
July	70		
August	55		
September	55		
October	55		
November	55		
December 01-13 14-31	 55 55	 230	 50

In 2009, PE EMS had follow-up discussions with transmission system operators from the neighbouring countries on the organisation of joint auctions in line with Regulation 1228/2003. They continued working on rules, contracts, documents and harmonisation of information systems aiming at automatic exchange of information with the representatives of transmission system operators from Romania (Transelectrica), Hungary (MAVIR) and Croatia (HEP-OPS).

Rules for 2010 (version 1.0) were published on October 26, 2009. Based on these Rules, in November 2009, annual cross-border capacities auctions were organised for 2010. Annual auctions were organised on all borders and directions of the Serbian control area. There were 17 participants in total and there was congestion on each border/direction.

Table 15. General data on annual auction of cross-border transmission capacities in 2010

Border – direction	Congestion scale: total requested/total allocated capacity	Number of participants in auctions	Price of the last accepted offer in case of congestion EUR/MWh
Albania-Serbia	4.60	8	0.20
Bosnia and Herzegovina-Serbia	5.60	12	0.84
Bulgaria-Serbia	6.50	14	0.86
Croatia-Serbia	3.88	8	0.28
Hungary-Serbia	8.30	16	0.39
Montenegro-Serbia	4.09	10	0.65
Macedonia-Serbia	4.00	12	0.23
Romania-Serbia	6.50	14	0.73
Serbia-Albania	7.48	12	3.21
Serbia –Bosnia and Herzegovina	5.63	9	0.27
Serbia –Bulgaria	8.40	15	0.88
Serbia -Croatia	5.00	11	0.76
Serbia –Hungary	8.30	16	0.74
Serbia –Montenegro	5.42	9	0.27
Serbia –Macedonia	5.40	13	0.89
Serbia-Romania	4.50	12	0.13

In 2010, PE EMS organized monthly auctions for each month, on all borders and directions. The number of participants is listed per each month, as well as the comparison chart for 2008 and 2009 in Table 16. The general data on monthly auctions are given in Table 17.

Table 16. Number of participants in monthly auctions for 2008, 2009 and 2010

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
No. of participants (2008)	13	12	12	12	13	13	13	12	12	14	14	12
No. of participants (2009)	14	13	18	16	11	15	16	14	12	13	15	14
No. of participants (2010)	15	16	16	17	17	18	16	17	17	18	17	16

Table 17. General data on monthly auctions for cross-border transmission capacities in 2010

Border – direction	No. of days with "0" capacity	Number of congestions/total number of auctions	Congestion scale: total requested/total allocated capacity	Number of participants in auctions (min.-max.)	Range of prices of the last accepted offer in case of congestion EUR/MWh
Alb-Ser	12	16 / 16	1.25 – 6.00	4 – 8	0.01 – 0.77
Bosnia and Herzegovina-Ser	0	14 / 14	1.57 – 4.52	8 – 12	0.11 – 0.91
Bul-Ser	26	19 / 19	1.32 – 5.96	6 – 14	0.07 – 4.28
Cro-Ser	8	15 / 15	1.06 – 2.03	5 – 08	0.02 – 0.11
Hun-Ser	4	12 / 14	0.92 – 3.00	8 – 14	0.03 – 0.31
Mon-Ser	0	14 / 14	1.12 – 3.93	6 – 13	0.02 – 0.54
Mac-Ser	6	13 / 13	1.60 – 4.40	4 – 8	0.03 – 0.93
Rom-Ser	5	25 / 26	0.96 – 3.67	7 – 16	0.01 – 4.21
Ser-Alb	11	20 / 20	3.06 – 7.40	5 – 9	0.37 – 5.74
Ser-Bosnia and Herzegovina	0	19 / 19	1.12 – 3.02	6 – 10	0.03 – 0.36
Ser-Bul	17	15 / 16	0.93 – 3.80	6 – 12	0.03 – 1.47
Ser-Cro	8	18 / 18	2.04 – 4.47	7 – 11	0.14 – 1.69
Ser-Hun	4	14 / 14	2.00– 3.56	12 – 16	0.12 – 2.00
Ser-Mon	0	21 / 21	1.23 – 3.15	5 – 9	0.02 – 0.53
Ser-Mac	6	19 / 19	1.31 – 3.26	6 – 10	0.07 – 1.51
Ser-Rom	5	21 / 22	1.20 – 7.60	6 – 12	0.01 – 1.02

In 2010, PE EMS allocated capacities on weekly level as well, for the capacity which was not allocated during annual and monthly auctions. In October 2010, in the 43rd and 44th week, upon the initiative of the Romanian transmission system operator and based on new calculations of ATC values on weekly auctions, ATC was increased to 50MW, from Romania to Serbia. It was the same case in December 2010, in 52nd and 53rd week, when on the Bulgarian border, from Bulgaria to Serbia, additional 50MW were offered on auctions. In 52ndweek, there were congestions on the border/direction Serbia-Bulgaria. General data on weekly auctions for given weeks are given in Table 18.

Since there were congestions on annual and all monthly auctions, there were either no available transmission capacities for other weekly auctions or these amounted to several MW only (available capacity after proportional reduction of capacities due to the same price bid by two or several participants).

Table 18. General data on weekly auctions of cross-border transmission capacity for 43rd, 44th, 52nd and 53rd week of 2010

Border – direction Period		ATC MW	Total requested capacity MW	Congestion scale: total demanded/total allocated capacity	No. of participants in weekly auctions	Price of the last accepted offer in case of congestion EUR/MWh
Bul-Ser	52nd week	50	105	2.10	3	2.27
	53rd week	50	50	1.00	1	0.00
Rom-Ser	43ra week	50	175	3.46	7	3.33
	44tn week	50	173	3.50	7	3.45
Ser-Bul	52nd week	10	10	3.00	3	0.10

Version 1.2 of the PE EMS Rules published on March 19, 2010 introduced an amendment in terms of capacity transfer. In 2009, and in the beginning of 2010, it was possible to have capacity transfer on a daily level on all borders, except on the border with Hungary, where it was possible to organise them on a weekly level. The amendments in these Rules version define an identical method for capacity transfer on all borders, i.e. it was possible to organise the transfer on the border with Hungary on a daily level.

For 2010, PE EMS concluded "Technical Agreement on Cross-Border Capacity Reservation on the Borders of Control Area of the Republic of Serbia and the Republic of Montenegro" with PE EPS so as to provide cross-border capacities for the realisation of the long-term contract on operational-technical cooperation between PE EPS and EPCG. The duration of the Technical Agreement for 2009 related to the provision of cross-border capacities on other borders so as to purchase missing quantities of electricity for the tariff customers supply in the Republic of Serbia was extended to January 2010.

Table 19 indicates the data on PE EPS allocated capacities in advance based on both agreements.

Table 19. Allocated cross-border transmission capacities in 2010 in advance

MW

Month	Border/direction					
	Ser-Mon		Bul-Ser		Hun-Ser	
January	55		11-31	125	01-10	55
					11-31	70
February	55					
March	55					
April	55					
May	01-16	65				
	17-31	110				
June	01-06	106				
	07-30	78				
July	70					
August	55					
September	55					
October	55					
November	55					
December	55					

Bearing in mind that organization of joint auctions is the next step in the development of cross-border transmission capacities market, PE EMS kept on developing its information systems. So as to adjust the system to new customer requirements and future joint auctions, modifications were introduced on the information system for the organisation of cross-border transmission capacity auction (DAMAS system). In addition, so as to increase the data protection level for participants in the electricity market, there were keys with electronic certificates (tokens) introduced for PE EMS information system access. Thereby, communication, integrity and data

protection were upgraded and at the same time a possibility to check transactions indicated by system users was introduced.

In the end of 2010, PE EMS made an agreement with the Hungarian transmission system operator (MAVIR) on organisation of joint auctions in 2011. It was agreed for 2011 for PE EMS to organise long-term auctions for the allocation of 100% of available capacity (annual and monthly auctions), while MAVIR was supposed to allocate the available capacity on a daily level. In line with this, a Contract was signed between PE EMS and MAVIR, based on which rules on allocation of capacities in joint auctions were adopted. All legal persons registered in the European Union countries are liable for participation in joint auctions as well as the companies registered in the signatory parties of the Treaty establishing the Energy Community of the South Eastern Europe. The payment in case of congestion is ogranised by “marginal price” method (last accepted bid).

In line with the Regulation 1228/2003, PE EMS continued discussions on organisation of joint auctions with the representatives of transmission system operators of Romania (Transelectrica) and Croatia (HEP-OPS).

There was a follow-up of the work on rules, contracts, documents and harmonisation of information systems so as to provide automatic data exchange.

Bearing in mind that the organisation of joint auctions is the next step in the development of cross-border transmission capacities market, PE EMS kept on developing its information systems. So as to adjust the system to new customer requirements and future joint auctions, modifications were introduced on the information system for the organisation of cross-border transmission capacity auction (DAMAS system).

In 2011 there was a follow-up of activities on the establishment of a Project team with a task to establish an Auction Office for the Southeastern Europe with headquarters in Podgorica (Montenegro) by the end of 2012. Most of transmission system operators from the region will participate in its work based on coordinated explicit auctions based on available transmission capacity quantities.

5.2.3.4 Balancing

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

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

At the moment (until the adoption of the Market Code), tertiary regulation is activated in line with the schedule for the engagement of production capacities submitted by PE EMS to the transmission system operator (PE EMS). Emergency exchange is organised in line with the contracts concluded between PE EMS and neighbouring transmission system operators. Balancing costs are compensated to PE EMS based on the tariff system for transmission network use.

5.2.4 Regulation of electricity distribution

5.2.4.1 Power distribution and distribution system operation

Electricity distribution and distribution system operation as well as electricity retail, for the purpose of tariff customers supply are performed by 5 legally independent companies within PE EPS, i.e.: Elektrovojvodina llc, Novi Sad, Elektrodistirbucija Beograd llc Belgrade, Elektrosrbija llc Kraljevo, ED Jugoistok llc Nis and ED Centar llc Kragujevac.

These energy entities are responsible for distribution system maintenance, functioning and development in line with the customers’ needs to whom they deliver electricity on a certain area, for the adoption of a development plan for a five-year period which defines the method and dynamics for the construction of a new distribution system and the reconstruction of the existing distribution system.

Being distributers, they are obligated to deliver electricity to customers in a reliable manner and with defined quality based on principles of transparency and non-discrimination.

Pursuant to the Energy Law, being electricity retailers for tariff customers, these energy entities are obligated to conclude a contract with tariff customers they supply.

Since February 2007, a Methodology on Criteria and Method for Connection Costs Establishment to Transmission and Electricity Distribution has been applied. After a two-year implementation, the Methodology was amended and supplemented in early 2009.

In 2009, distribution companies submitted the proposal of distribution system charges to the Agency for the first time and the corrections obtained a favourable opinion. Upon the approval of the Government, these prices have been applied since March 1, 2010. The implementation of these tariffs enables the customers connected to the distribution grid to select another supplier and buy electricity from the supplier offering the most favourable conditions.

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

During the preparation of annual investment plans, distribution companies are guided by the existing long-term development plans. Nevertheless, five-year development plans have not been adopted yet regardless the provisions of Article 103 of the Energy Law.

Table 20. Harmonisation of tasks of distribution companies with the requirements of the Article 14 of the Directive 2003/54/EC

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

5.2.4.2 Distributed electricity quantities

The electricity delivered to customers through the distribution system is practically fully withdrawn from the electricity transmission system, since only a small portion of it is provided from production capacities connected to the distribution system. Customer facilities which are directly connected to the transmission grid take over the electricity from the transmission grid, and therefore the energy is not presented within total delivered energy given in Table 21.

Table 21. Distributed electricity quantity in 2005-2010

GWh, %

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

5.2.5 Control and regulation of the quality of electricity distribution

The Energy Agency of the Republic of Serbia established the rules for monitoring of quality of electricity delivery from the transmission and distribution system, which have been implemented since January 1, 2009. The rules are defined based on the existing legal framework, international practice in the field of service quality monitoring regulation, existing practice in the companies in data collection, informal monitoring of user/customer needs and requirements.

The system for electricity service quality monitoring is being introduced in stages, so as the necesary measurement and aquisition systems, information and organisational infrastructure in transmission and distribution companies could be adjusted to the needs of customers and Agency requirements.

The rules for distribution service quality monitoring define the type, scope and form of data on technical and commercial quality aspects which the transmission company PE EMS and electricity distribution companies within PE EPS must collect, as well as the timelines for their submission to the Agency. Based on the data collected in such a manner, the indicators of technical and commercial aspects will be calculated in the field of electricity delivery and supply. Technical quality aspects include the monitoring of voltage quality on the point of delivery and continuity of supply, i.e. the number and duration of interruptions in electricity distribution. Commercial aspects provide for the evaluation of the quality relations between the energy transmission entity, i.e. distribution entity and customers in the process of providing the service of connection, metering, reading, billing, collection, resolving technical problems in delivery, addressing the customers' enquiries and requests, suspension and disconnection.

5.3 Electricity market

5.3.1 Market conditions and market opening

Adopting the Energy Law in 2004, the conditions were created for the introduction of competition in the power sector in Serbia, so as to increase the efficiency of the sector through market mechanisms in electricity production and supply areas, while still being attached to the economic regulation in the field of electricity transmission and distribution, as natural monopolies.

The transmission tariffs have been regulated since 2008, while the distribution tariffs have been regulated since March 2010. The Transmission System Code has been implemented since 2008 and the Distribution Codes since early 2010. The Codes regulate the rights and obligations of energy entities, network operators and system users.

Thereby, the conditions for a customer to enter the market were met.

Market Code is yet to be adopted (PE EMS is preparing it, the Agency is supposed to approve it). Regardless the progress made so far, the Code has not been adopted yet, since it is necessary to regulate the legal issues first which cannot be regulated by the Code. They will be regulated by the new Energy Law. The issues are as follows: electricity market model in the Republic of Serbia, basic rules and obligations of electricity market players, special rights and obligations of energy entities in terms of trading rules, as well as the content of Electricity Market Code.

The Energy Law in 2004 stipulates that all electricity customers are tariff customers. Pursuant to the Law, they are supplied by electricity by the trader established within PE EPS for tariff customers' supply at regulated prices. At the same time, the customers complying with the criteria defined by the Law are enabled to obtain the eligible customer status and thereby, they gain an opportunity to procure electricity in the open market.

In the first phase, upon the entry into force of the Energy Law, electricity market was potentially open for all customers with annual electricity consumption above 25 GWh. Thereby, potentially 13% of electricity market was open (for around 38 customers).

Since January 1, 2007, pursuant to the decision of the Agency Council, the eligible customer status was obtained by all electricity customers with annual consumption of over 3 GWh. Thereby, potentially 21% of electricity market was open (for around 350 customers).

Since February 2008, pursuant to the decision of the Agency Council, the eligible customer status was obtained by all customers except for households. Thereby, potentially 47% of electricity market was open.

Until the end of 2009, no electricity customer exercised the right to obtain the eligible customer status, due to low PE EPS electricity price in comparison to other possible supply sources.

Pursuant to the commitments arising from the Treaty establishing the Energy Community, there will be further gradual electricity market opening in Serbia the market could be open for households until 2015, too.

Table 22. Electricity market opening

Market opening phases	I	II	III	Plan
Year	2006	2007	2008-2009	2015
Market opening level [%]	13	21	47	100
Eligibility threshold [GWh]	25	3	All customers except households	All customers
Number of potential eligible customers	38	350	329 000	3.43 mil.
Number of actual eligible customers	0	0	0	-

Electricity market in Serbia includes two segments – regulated (securing tariff customers demand) and free market (where market players agree on transactions at free prices). The method for price establishment on both segments of electricity market is shown in Figure 19.

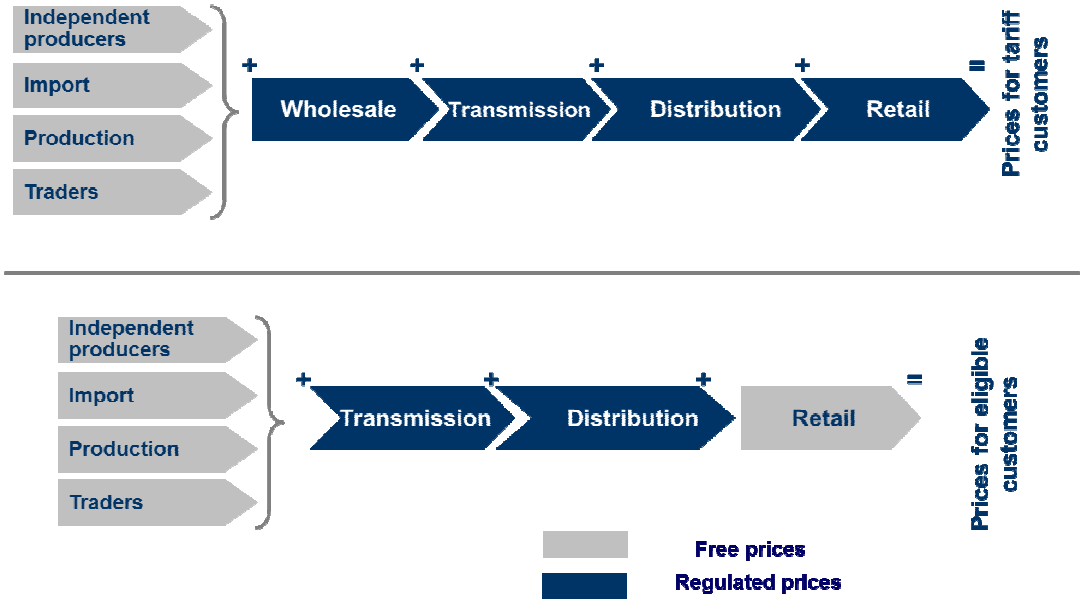


Figure 19. The establishment of prices for tariff and eligible customers

On the **regulated segment,** wholesale for tariff customers was entrusted by the Government of the Republic of Serbia to the PE EPS via contract. PE EPS is obligated to conclude annual contracts with producers for tariff customers and retailers for tariff customers at regulated prices. Electricity quantities for tariff customers are defined by annual electricity balance sheet, while the extra electricity for tariff customers can be sold on the free market by PE EPS.

Free wholesale electricity **market** is based on bilateral contracts between producers, traders and suppliers. Although there is electricity deficit in the region, which is expected in Serbia in middle-term as well, there are almost no independent electricity producers at all while the trader's activities are mostly limited to transit in an open market.

Since there is a dominant position of PE EPS, there are limited possibilities for the establishment of a free market of ancillary services development in Serbia. Transmission system operator orders ancillary services from electricity producers pursuant to the contract on system services between PE EMS and PE EPS.

5.3.2 Wholesale market

In 2010, there were in total 34 market players obtained the right to nominate schedules in the Serbian market area based on adequate contract concluded with PE EMS. However, only 22 market players exercised their right. PE EPS submitted electricity production, consumption and exchange plans, while 21 other market players submitted only electricity exchange plans (internal and cross-border transactions).

5.3.2.1 Electricity traders in the electricity market

The data on electricity traders activities in the free market have been collected by the Agency. In addition, market concentration level is estimated based on calculated indicators.

In the beginning of 2010, there were 41 licenced traders in the electricity market and during 2010 there were 6 new licences issued and one withdrawn. However, only 21 trader actively operated in electricity wholesale, import, export and transit. There were no operations in retail, since no eligible customers exercised the right to buy electricity in the free market so as to meet their own needs.

Figure 20 indicates annual electricity quantities traded in the free market, for each trader activity[3].

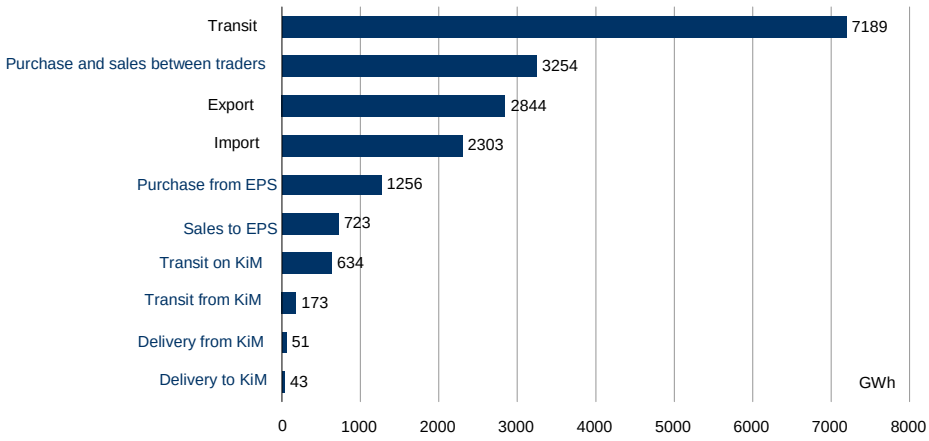


Figure 20. Electricity quantities for each trader activity in 2010

Relevant indicators of development level and electricity market concentration in Serbia in 2010 are given in Table 23. The following data are given for each of indicated trader activities:

- number of traders;
- traded 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 and[4]
- evaluation of market concentration level per individual activities.

Indicated data present market concentration level as moderate to extremely high, indicating the presence of dominant traders in all trading activities in Serbia in 2010.

Table 23. Electricity market concentration level in Serbia in 2010

Trade activity	No. of traders	Quantity [GWh]	Share of three traders with the greatest trade scale [%]	HHI	Level of market concentration
Trade with PE EPS					
Selling to EPS	7	723	71	2 242	High
Purchase from EPS	15	1 256	55	1 570	Moderately high
Wholesale between traders in the electricity market					
sales	19	3 254	55	1 745	Moderately high
purchase	19	3 254	48	1 241	Moderately high
Import and export of electricity					
Import	15	2 303	69	2 397	High
Export	19	2 844	59.5	1 605	Moderately high
Transit					
Transit	17	7 189	71.5		

[3] Electricity quantities indicated as Import and Export account for the electricity which has gone through customs import i.e. export procedure and they cannot be compared to export and import figures given in Table 7, chapter 5.1.3

[4] 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.

Total scale of cross-border electricity exchange on each border and direction in 2010 is indicated in Figure 21.

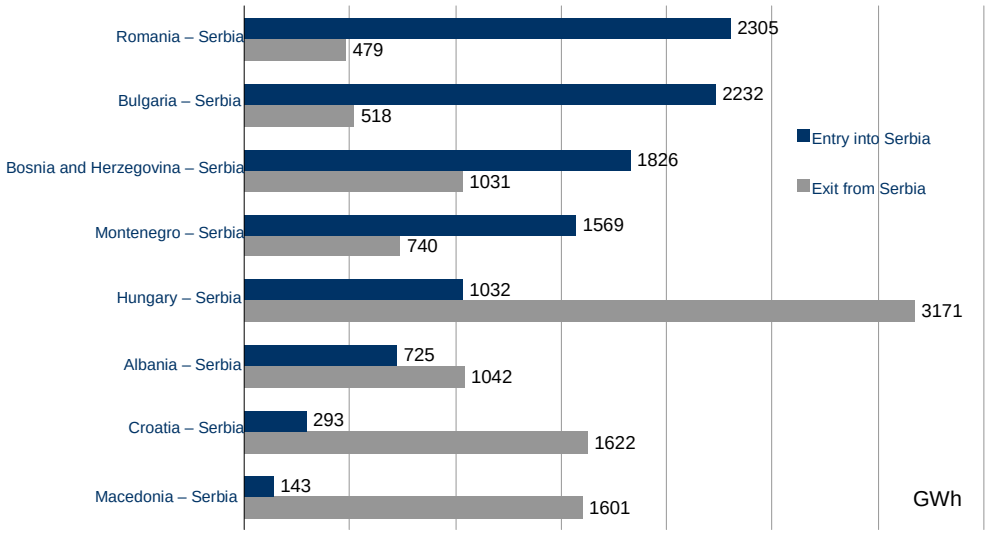


Figure 21. Cross-border exchange

Total electricity announced and confirmed through cross-border exchange programs in the Republic of Serbia was balanced in 2010. Total entry amounted to 10126GWh, while exit amounted to 10206GWh. The biggest amount of energy came from Romania, Bulgaria and Bosnia and Herzegovina, the greatest amount was delivered to Hungary, Croatia and Macedonia.

5.3.3 Retail market

The companies licenced for trade in the electricity market (in the end of 2010, there were 46 of them) are not active in retail marked due to non-existing interest of eligible customers for supplier switch.

Total final electricity consumption in Serbia in 2010 amounted to 28 487 GWh. Electricity consumption in Serbia (without KiM) in period 2005-2010, including electricity consumption taken over by producers for electricity production demand is given in Table 24.

Table 24. Electricity consumption structure in 2005-2010

GWh

Consumption category	2005	2006	2007	2008	2009	2010
Households	14 407	14 276	14 145	14 313	14 412	14 645
Other customers at low voltage (0,4 kV)	4 957	5 195	5 379	5 614	5 567	5 534
Total at low voltage (0,4 kV)	19 364	19 471	19 524	19 927	19 979	20 179
Customers at medium voltage (10, 20 and 35 kV)	4 967	5 125	5 247	5 345	5 127	5 317
Customers at high voltage (110 kV)	2 183	2 337	2 430	2 570	2 216	2 555
HPP and TPP consumption for production purposes	521	662	447	431	492	436
Total consumption	**27 035**	**27 595**	**27 649**	**28 273**	**27 814**	**28 487**

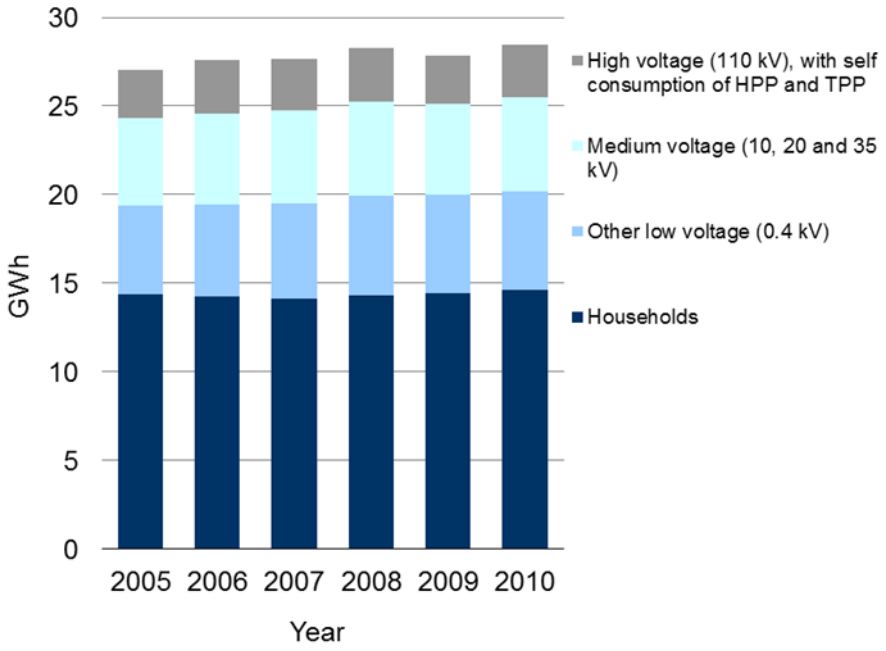


Figure 22. Electricity consumption structure in Serbia in period 2005-2010 (without KiM)

Total number of metering points for customer delivery in Serbia without KiM (without Železnice Srbije/Serbian Railway) in the end of 2010 amounted to 3 499 435 (Table 25). In the period 2005-2010, the number was increased for 5.2%.

Table 25. Number of metering points for delivered electricity in period 2005-2010

Consumption category	2005	2006	2007	2008	2009	2010
Households	2 959 457	2 986 850	3 020 590	3 056 972	3092 619	3122675
Other customers at low voltage (0,4 kV)	331 563	341 538	351 734	365 276	365363	372758
Customers at medium voltage (10, 20 and 35 kV)	3 571	3 646	3 758	3 994	4 104	3970
Customers at high voltage (110 kV)	29	29	29	29	32	32
Total number of metering points	**3 294 620**	**3 332 063**	**3 376 111**	**3 426 271**	**3 462 408**	**3 499 435**

5.4 Security of supply

Serbia is not rich in energy resources, but thanks to lignite reserves and hydro potential, Serbia covers almost all electricity demand through local resources.

Since 2000, to a great extent with financial assistance of international community as well as from increased revenues, reliability and efficiency of the plants were increased, first of all in thermal power plants and lignite mines which provide fuel for thermal power plants, as well as in the transmission grid. Thereby, security of electricity supply in Serbia was increased to a great extent and practically import was eliminated, which amounted to around 7% of the demand in the beginning of the last decade.

Pursuant to the ruling laws, the participation of independent electricity producers in the Serbian market could be possible after obtaining an act on entrusting the activity of general interest (in this case, electricity production) from the Government of the Republic of Serbia or through a conclusion of a concession contract.

Transmission grid of Serbia has been modernized significantly, modern measurement devices were implemented in system exits and more efficient management was enabled. Having central position in the region, the power system of Serbia has a significant impact on the energy flow and security of supply in other countries.

Investments in the distribution grid in the past decade were considerably lower and for this reason, apart from other ones, the performance of this section of the power system in considerate delay when compared to other segments.

Energy facilities are constructed upon previously obtaining the energy permit. The permit is issued by the Ministry pursuant to the Rulebook on criteria for energy permit issuance, application contents and energy permit procedure, adopted by the minister in charge of energy issues.

5.4.1 Electricity consumption forecast

Forecast implying average annual electricity consumption increase in Serbia in the future range from 1.0% to up to 1.5% in the following 10-15 years. The calculations do not imply the increase in energy efficiency in all consumption sectors.

5.4.2 Construction of new production capacities

PE EPS plans imply rehabilitation and modernization of a group of existing power plants and the construction of new ones which would be realized by PE EPS independently or in cooperation with strategic partners. The construction of new power plants is necessary so as to cover electricity consumption growth and replace the power plants which will be shut down due to their age and inability to comply with the requirements for environment protection. It is planned, but yet not expected to have a new capacity of greater scale before 2014.

Since 2017, all thermal power plants which do not comply with the EU norms on sulphur and nitrogen oxide emission have to be shut down and therefore, the oldest PE EPS inefficient power plants where the installation of desulphurization equipment is not justifiable will be decommissioned. Consumption growth and replacement of these power plants will be covered by the construction of other thermal power plants and power plants using renewable energy sources. It is estimated that up to 2020, it is necessary to increase the production capacity for over 1 700 MW.

Thermal power plants

Upon the completion of revitalisation and modernisation of TPP Nikola Tesla A6, 280 MW, it is planned to complete the revitalisation and modernisation of TPP Kostolac B, 640 MW until 2012.

The oldest thermal power plants Kolubara A1, A2 and A4, 87 MW will be decommissioned after 2012 due to their age, low efficiency, high production costs and environment protection.

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

In the end of 2010, collecting bids and selection of strategic partner for the construction of new power plants was in the final phase:

- Thermal power plants Kolubara B (2x350 MW) and Nikola Tesla B3 (new unit of 700 MW in the existing TPP Nikola Tesla B) which will be fuelled by local lignite; they could be commissioned 2016 at the earliest,
- thermal power plant-district heating company Novi Sad with gas-steam combined cycle with the 450 MW capacity fuelled by natural gas.

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

Hydro power plants

Revitalisation and modernisation of existing hydro power plants is either planned or already initiated. The goal is to have the installed capacity and annual electricity production increased as of 2011. Upon the completion of revitalisation of small hydro power plants Ovčar Banja and Međuvršje, the following activities are planned:

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

Use of renewable energy sources

In 2009, the Government adopted a Decree on incentive measures for electricity production through the use of renewable energy sources and combined electricity and heat energy production, which prescribes the incentive measures for electricity production 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 in MW.

The conditions for obtaining the privileged producer status are prescribed in the Decree on conditions for obtaining the privileged electricity producer status and criteria for evaluation of these conditions, adopted by the Government in 2009.

The implementation of the given decrees is under the jurisdiction of the ministry in charge of energy affairs.

Purchase prices for privileged electricity producers are given in Table 26. These prices are implemented by the end of 2012.

Table 26. Purchase prices for privileged electricity producers

No.	Type of power plant	Installed capacity (MW)	Incentive measure – purchase price (c€/1 kWh)
1	**Hydro power plants**		
1.1		up to 0.5 MW	9.7
1.2		from0.5 MW to2 MW	10.316 – 1.233*P
1.3		from 2 MW to 10 MW	7.85
1.4	Existing infrastructure	up to 2 MW	7.35
1.4	Existing infrastructure	from 2 MW to 10 MW	5.9
2	**Biomass fired power plants**		
2.1		up to 0.5 MW	13.6
2.2		from0.5 MW to 5 MW	13.845 – 0.489*P
2.3		from5 MW to 10 MW	11.4
3.	**Biogas fired power plants**		
3.1		up to 0.2 MW	16.0
3.2		from0.2 MWto 2 MW	16.444 – 2.222*P
3.3		over2 MW	12.0
4.	**Power plants fired by landfill gas from plants for municipal waste water treatment**		6.7
5.	**Wind to energy power plants**		9.5
6.	**Solar to energy power plants**		23
7.	**Geothermal energy to power plants**		7.5
8.	**Combined cycle power plants fired by fossil fuels**		
8.1		up to0.2 MW	C_0 =10.4
8.2		from0.2 MW to 2 MW	C_0 = 10.667–1.333*P
8.3		from2 MWto 10 MW	C_0 = 8.2
8.4	Existing infrastructure	up to 10 MW	C_0 = 7.6
9.	**Waste to energy plants**		
9.1		up to 1 MW	9.2
9.2		from 1 MWto 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 carrier" amounting to 27.83 RSD/ m^3 G (RSD/ m^3) – new natural gas price for energy entities dealing with natural gas retail for tariff customers purposes which does not include the charge for PE "Srbijagas" Novi Sad natural gas transmission system in line with the tariff rate "energy carrier"	

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

In 2011, target binding percentage for the increase in renewable energy share in gross final energy consumption in 2020 is expected to be set for the countries in the region as well.

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

5.4.3 Electricity transmission

Electricity transmission system operator is responsible for:

- Security, reliability and quality of electricity delivery;
- development which provides for a long-term capability of the transmission system to comply with rational requirements in terms of electricity transmission;
- non-discriminatory access to the transmission system;
- transmission system operation;
- proper operation and reliability of measurements of delivered electricity and
- organizing and administering electricity market.

5.4.3.1 Construction of new transmission capacities

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

In 2010, the construction of 3 overhead lines was finalised:

- 400 kV OHL Niš 2 – Leskovac;
- 110 kV OHL No. 190 AB – introduction in new TS Rimski Šancevi and
- 110 kV OHL Futog – Bačka Palanka – introduction in TS Čelarevo;

The following OHL are in different construction phases:

- 58 projects of construction (22), reconstruction (13), redesign (17) and recovery (6) of overhead lines. These are the most important: OHL 400 kV TS Leskovac 2 – Vranje 4 – border with Macedonia, OHL 400 kV TS Kragujevac 2 – TS Kraljevo 3, etc.;
- 39 projects on transformation substations and switchgear plants. The most important ones are the following: construction of TS 400/110 kV Beograd 20, 400/110 kV Vranje 4, TS 220.110 kV Bistrica, TS 400/220/110 kV Smederevo 3 (construction of switchgear plant of 400 kV and reconstruction of switchgear plant of 110kV), TS 400/110 kV Jagodina 4 – installation of another transformer 300 MVA, reconstruction of TS 400/220 kV Beograd 8 (the works are over, there is a design underway and ongoing location permit procedure), TS 400/220/110 kV Novi Sad 3, TS 400/220/110 kV Nis 2, TS 400/220/110 kV Pančevo 2, redesign and recovery of several TSs.

Within the development plan for 110 kV transmission grid, the five-year plan included the projects which will result in the compliance with the security criteria n-1 in southern Banat and Raška.

5.4.3.2 Interconnection overhead lines

The construction of interconnection overhead line of 400 kV between Serbia and Macedonia (Nis 2 – Skoplje) was initiated in 2008 and is supposed to be finalised (up to the border with Macedonia) by the end of 2011. The two-direction overhead line of 400 kV between Romania and Serbia TS Resica (Sokol) – TS Pančevo 2 is planned.

5.4.4 Electricity distribution

Distribution system operators – five companies dealing in electricity distribution established by PE EPS, perform the activities on electricity distribution, distribution system operation and electricity retail for tariff customers. Distribution system operator is responsible for:

- Secure and reliable operations of the distribution system and the quality of electricity delivery;
- distribution system operation;
- non-discriminatory and economical access to the distribution system;

- distribution system development providing for long-term capacity of the distribution system to meet the rational requests for electricity distribution;
- establishment of technical-technological conditions for the connection of power facilities, devices and plants into a single system;
- exchange of information between energy facilities and distribution system users which are necessary for a more efficient access to the distribution system, based on principles of transparency and non-discrimination and
- proper operation and reliability of electricity measurements on the exchange points into and from the distribution system.

The most important problem with distribution systems is high electricity losses level in the distribution network due to unauthorised use of electricity, old and inadequate metering equipment and overload of network elements. High losses result in decreased reliability and lower quality level (low voltage, etc.) in many segments of the network.

In line with the new Energy Law, distribution system operator will adopt ten-year development plans, harmonised with the transmission system development plan and connection requirements, so as to secure timely investments and secure and high-quality electricity delivery to customers.

5.4.4.1 Measures for an increased security of supply

A set of measures for the increase of security of energy supply to customers connected to the distribution network is planned. First of all, they include the finalisation of ongoing investments and new investments in network building. Other activities on facilities and operations modernization include:

- Revitalisation or replacement of old equipment in the distribution network;
- completion of the construction of TSs and construction of 12 new distribution TSs of 110/35 kV and 110/x kV, as well as the expansion of existing TSs;
- completion of the construction of TSs and construction of 8 new distribution TSs of 35/10 kV, as well as the expansion of existing TSs;
- construction and reconstruction of a set of overhead lines in the distribution network;
- construction of low voltage network, in line with the growth of local electricity consumption and transmission capacity development, as well as with the need to increase the quality of supply;
- improvement of measurement equipment in customer's facilities and further development and introduction of remote measurement system;
- reduction of losses in the distribution network and increase in the collection rate of delivered electricity;
- follow-up of distribution system operation development.

A part of investment activities includes projects financed by the World Bank: construction of TS Mačvanska Mitrovica and Arilje (phase I), TS Nis 8, TS Jagodina 3, TS Mosna (phase II).

There is an ongoing replacement of measurement devices in the distribution companies with more modern models. PE EPS established an expert group for the development of "Smart Grids". The task of the expert team is to design a profitable project on the modernisation of the system for electricity distribution and supply so as to provide monitoring, protection and automatised optimisation of the work of all system segments and installations between system users, plants, network, system users, including the most modern technologies such as electric cars.

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.

5.4.4.2 Reduction of electricity losses in the distribution network

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

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

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6

NATURAL GAS

NATURAL GAS

6.1 Structure, capacities, consumption and supply sources

6.1.1 Organisational and ownership structure of the natural gas sector

The existing structure of the natural gas sector of Serbia is established upon the adoption of the Energy Law in 2004. The gas sector structure on December 31, 2010 is given in Figure 23.

Naftna industrija Srbije (NIS) (Petroleum Industry of Serbia) www.nis.rs	**Public Enterprise SRBIJAGAS** www.srbijagas.com	**JSC YUGOROSGAZ** www.yugorosgaz.rs	**34 natural gas distribution companies**	**9 energy entities**
	TRANSMISSION of natural gas and transmission system operation	**TRANSMISSION of** natural gas		
	DISTRIBUTION of natural gas and distribution system operation	**DISTRIBUTION of** natural gas and distribution system operation	**DISTRIBUTION of** natural gas and distribution system operation	
PRODUCTION NATURAL GAS	**TRADE** NATURAL GAS: • wholesale for tariff customers supply • retail for tariff customers • in a free market	**TRADE** NATURAL GAS: • wholesale for tariff customers supply • retail for tariff customers • in a free market	**TRADE** NATURAL GAS: • retail for tariff customers	**TRADE** In NATURAL GAS In a free market

Figure 23. Organisational structure of natural gas sector

Pursuant to the Decision of the Government of the Republic of Serbia in 2005, former single Public Enterprise Petroleum Industry of Serbia – NIS was divided into three companies: NIS JSC, PE Transnafta, and PE Srbijagas.

PE Srbijagas was established on October 1, 2005 originating from organizational segments NIS – Gas and NIS – Energogas and the distribution network for natural gas in Pančevo NIS – Jugopetrol, which used to deal in the activities in the gas sector in the past. The company is 100% state-owned.

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

Natural gas transmission is performed by PE Srbijagas and Yugorosgaz JSC, while PE Srbijagas is the only transmission system operator on the Serbian territory.

Natural gas distribution and distribution system operation is performed by 36 companies.

Natural gas wholesale for tariff customer supply is entrusted by the state to the companies PE Srbijagas and Yugorosgaz JSC. Natural gas retail for tariff customers is performed by 36 gas distribution companies. Eleven companies obtained the natural gas retail licence in the free market.

Natural gas storing is performed by the company Underground Gas Storage Banatski Dvor, LLC established by PE Srbijagas and Gazprom Germania.

Yugorosgaz JSC was established in 1996. Yugorosgaz JSC activities include procurement of natural gas from Gazprom for all customers in Serbia, as well as the transmission, distribution and supply of natural gas for

customers. Current shareholders are Gazprom Moskva - 50%, PE Srbijagas - 25% and Central ME Energy and Gas, Vienna - 25%.

The greatest number of remaining 34 gas distributers are owned by municipalities, some of them have mixed ownership, some of them are private-owned.

6.1.2 Gas infrastructure capacities

Natural gas transmission and distribution systems are developed pursuant to the "Serbian Energy Sector Development Strategy until 2015" and the Program for the Implementation of the Serbian Energy Sector Development Strategy 2007-2012. The Government of the Republic of Serbia adopted an ambitious gasification plan in 2005.

6.1.2.1 Natural gas 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 2010, the length of the transmission system of PE Srbijagas amounted to 2 193 km in north and central Serbia, while the length of the Yugorosgaz JSC transmission system amounted to 65 km in southern Serbia (table 27). PE Srbijagas owns 97% of the gas transmission network, while Yugorosgaz JSC owns the remaining 3% of gas transmission lines.

Table 27. Length of transmission network in Serbia in period 2005-2010

km

	2005	2006	2007	2008	2009	2010
Transmission system length	2191	2207	2211	2215	2216	2258

Table 28 indicates the most important technical characteristics of the transmission system of PE Srbijagas.

Table 28. Main technical characteristics of the PE Srbijagas transmission system.

Capacity		Around 16 million m^3 / day)
Pressure		16 to 75 bar
Length		2 193km
Diameter		from DN 150 to DN 750
Lifetime		30 years (average)
Compressor station, power		4.4 MW
No. of entry points into the transmission system		
	Imported gas	1
	Indigenous gas	14
No. of exit points from the transmission system		
Metering and regulation stations on the transmission system exit point		158
Overtaking stations		2

Figure 24 indicates natural gas transmission system of Serbia in 2007. In the meantime, gas pipelines from Čačak to Užice and Čajetina, from Kraljevo to Kruševac and the bi-directional gas pipeline Main Junction Point Gospođinci – Underground Gas Storage Banatski Dvor were constructed.

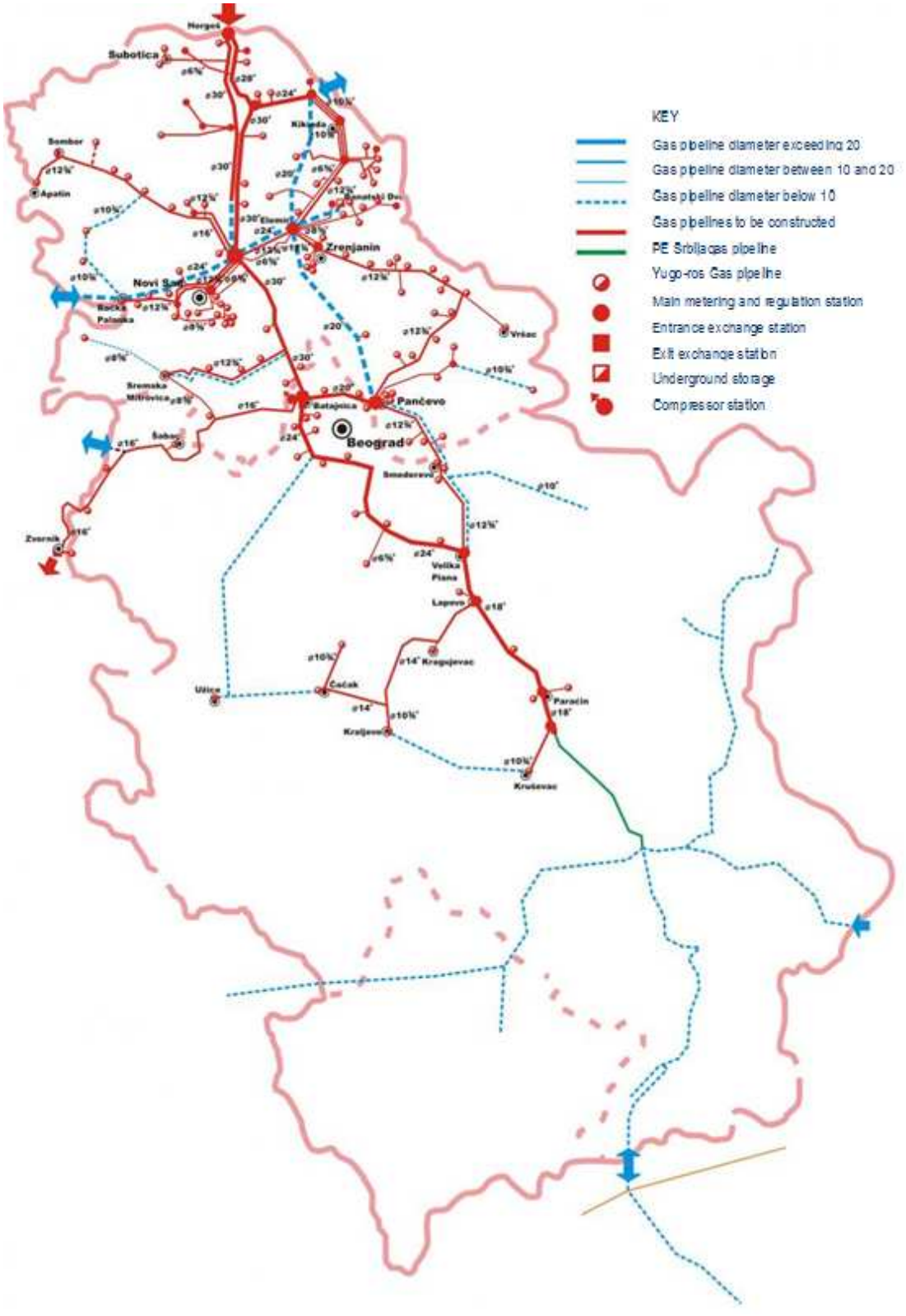

Figure 24. Natural gas transmission system in the Republic of Serbia.

6.1.2.2 Natural gas distribution

The length of the distribution network has increased since 2005 till 2010 for 42%, i.e. 14 299 km thus creating the conditions for the connection of new customers.

Table 29. Length of distribution network in Serbia in period 2005-2010

km

	2005*	2006*	2007*	2008	2009	2010
Distribution network length	10050	10385	10500	10873	13 437	14299

* estimate

Total length of the distribution network (without connections) in the end of 2010 amounted to 14 299 km with 250 000 connections (tables 29 and 30).

Table 30. Length of distribution network and number of delivery points on December 31, 2010

No.	Natural gas distributer	Legal form	Distribution network length (m)	No. of active connections
1	7. Oktobar, Novi Kneževac	PUC	49 452	1 607
2	Beogas, Belgrade	LLC	179 153	7 926
3	Beogradske elektrane, Novi Beograd	PUC	330 510	3 724
4	Boss petrol, Trstenik	LLC	24 084	16
5	Čoka, Čoka	PUC	27 095	810
6	Drugi oktobar, Vršac	C	198 040	10 479
7	Ekos, Žitište	PUC	214 041	3 999
8	Elgas, Senta	PE	62 800	1 741
9	Gas – Feromont, Stara Pazova	JSC	526 099	15 371
10	Gas – Ruma, Ruma	PE	444 131	6 877
11	Gas, Bečej	LLC	192 840	1 624
12	Gas, Temerin	PE	266 500	6 532
13	Graditelj, Srbobran	PUC	150 200	2 285
14	Grejanje, Zrenjanin	C	508 587	19 303
15	Ingas, Inđija	PE	347 466	8 840
16	Interklima, Vrnjačka Banja	LLC	101680	921
17	Komunalac, Novi Bečej	PE	116500	2301
18	Kovin – Gas, Kovin	PE	320.418	4733
19	Loznica - Gas, Loznica	LLC	119540	1 115
20	LP - Gas, Belgrade	LLC	51 386	1 393
21	Novi Sad – Gas,Novi Sad	C	2 358 892	45 325
22	Polet, Plandište	PUC	235 080	3 465
23	Resava Gas, Svilajnac	LLC	43 751	282
24	Rodgas, Bačka Topola	JSC	144 788	1 268
25	Sigas, Požega	LLC	19 901	258
26	Sloga, Kanjiža	JSC	171 300	3 985
27	Sombor – Gas, Sombor	LLC	169 000	1 556
28	Srbijagas, Novi Sad	PE	5 541 455	75 639
29	Srem - Gas, Sremska Mitrovica	PE	259 724	4 497
30	Standard, Ada	PUC	75 850	1 067
31	Suboticagas, Subotica	PUC	392 686	8 514
32	Tehnoenergetika, Kruševac	LLC	33120	524
33	Toplana – Šabac, Šabac	PUC	150 816	2 040
34	Užice – gas, Užice	LLC	84 527	35
35	Vrbas – Gas, Vrbas	PE	181 158	1 588
36	Yugorosgaz, Beograd	JSC	206 251	452
	TOTAL		**14 298 971**	**252 092**

The share of the distribution network of PE Srbijagas in total length of distribution network amounts to 38%. PE Srbijagas is the owner of the medium pressure distribution network, to which big natural gas customers are connected in most of the cities in Serbia.

6.1.3 Natural gas consumption and supply sources

Most of natural gas quantities are provided from import.

Indigenous production covered 8-10% of gas in period 2005-2008, but in 2009 and 2010, indigenous production increased and covered up to 15% of consumption. Indigenous natural gas production for end users amounted to 352 million m³ in 2010. NIS plants used 34 million m³ on the transmission or distribution system of PE Srbijagas, while the remaining quantities were delivered to the natural gas trader for the purpose of tariff customers' supply.

Most of natural gas quantities are provided through import from the Russian Federation based on the long-term contract (annexed every year). In 2010, natural gas import amounted to 1 968 billion m³, out of which 1 785 billion m³ from the Russian Federation, while 183 million m³ were imported from EON Hungary.

In 2010, 57 million m³ were injected in underground natural gas storage and 29 million m³ were withdrawn from the storage and delivered to customers.

Table 31. Natural gas production and consumption in 2005-2010 in millions

m^3

	2005	2006	2007	2008	2009	2010
Production delivered into the transmission system	253	250	254	257	307	331
Production delivered into the distribution system	24	26	23	24	21	21
Total production	**277**	**276**	**277**	**281**	**328**	**352**
Import from the Russian Federation	2116	2080	2132	2 176	1 509	1 785
Import from other sources	132	6	35	24	75	183
Total import	**2 248**	**2 086**	**2 167**	**2 200**	**1 584**	**1 968**
Withdrawal from underground storage	**0**	**0**	**0**	**1**	**15**	**29**
TOTAL AVAILABLE QUANTITY	**2 525**	**2 362**	**2 444**	**2482**	**1 927**	**2 349**
Natural gas producer demand	103	102	110	119	80	34
Gross consumption	**2 422**	**2 260**	**2 334**	**2 363**	**1 847**	**2 315**
Losses and transmission system consumption	3	3	3	2	3	3
Losses in distribution network	25	22	21	17	10	21
Injection into underground storage	0	4	14	110	104	57
Final consumption	**2 394**	**2 231**	**2 296**	**2 234**	**1 730**	**2 234**

6.2 Regulating energy activities in gas sector

6.2.1 Unbundling energy activities

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

Pursuant to the Energy Law, transmission, distribution and storing are unbundled in terms of accounting. In the meantime, storing activity was removed from PE Srbijagas to a separate company. New Energy Law introduces an obligation to legally unbundle energy activities of natural gas transmission and supply, which is in line with the international obligation to implement the EU Directive 2003/55 arising from the Treaty establishing the Energy Community.

In line with the Directive 2003/55, distribution companies with less than 100 000 natural gas customers connected to their network do not have to legally unbundle the supply activity. All distribution companies in Serbia have less than 100 000 customers and pursuant to Article 43 of the Energy Law, distribution, supply and other non-energy activities have been unbundled in terms of accounting.

Table 32. Unbundling energy activities

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

6.2.2 Price regulation

Although the new legal framework for price regulation (methodology for establishment of tariff elements, tariff systems, methodology for establishment of costs for connection to the network) was adopted by the Agency in 2006 and in early 2007, the implementation was initiated only in 2008, i.e.:

- natural gas transmission prices are valid as of October 15, 2008;
- natural gas distribution prices are valid as of October 15, 2008, for customers connected to the PE Srbijagas network, while for most of remaining customers as of the first half of 2009;
- natural gas prices for tariff customers are valid as of October 15, 2008 for PE Srbijagas customers, while for other customers as of the first half of 2009.

Natural gas purchase costs account for a dominant share of over 90% in total gas price for end users. Figure 25 indicates the structure of average selling natural gas price for tariff customers of PE Srbijagas applied as of October 15, 2008 all the way thorough 2009 and 2010.

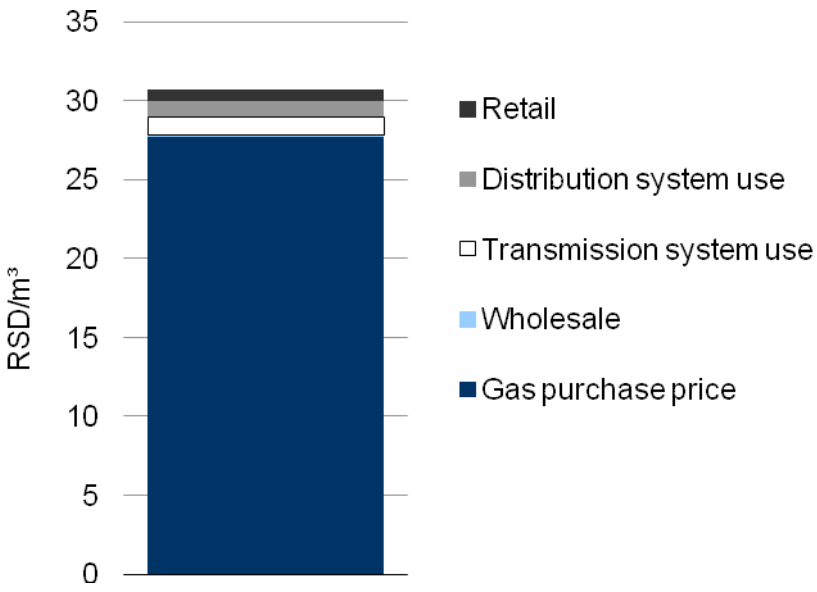

Figure 25. Structure of average selling natural gas price for tariff customers of PE Srbijagas as of October 15, 2008

Figure 26 indicates the comparison of natural gas price for reference customer – household category purchasing gas from PE Srbijagas, in Croatia and in the EU countries, in the second half of 2010, calculated in line with the EUROSTAT methodology. Compared to the household prices in other countries, only households in Romania

have lower prices than the households in Serbia. For the first two listed countries, indigenous gas share accounts for more than 50% in the resource structure.

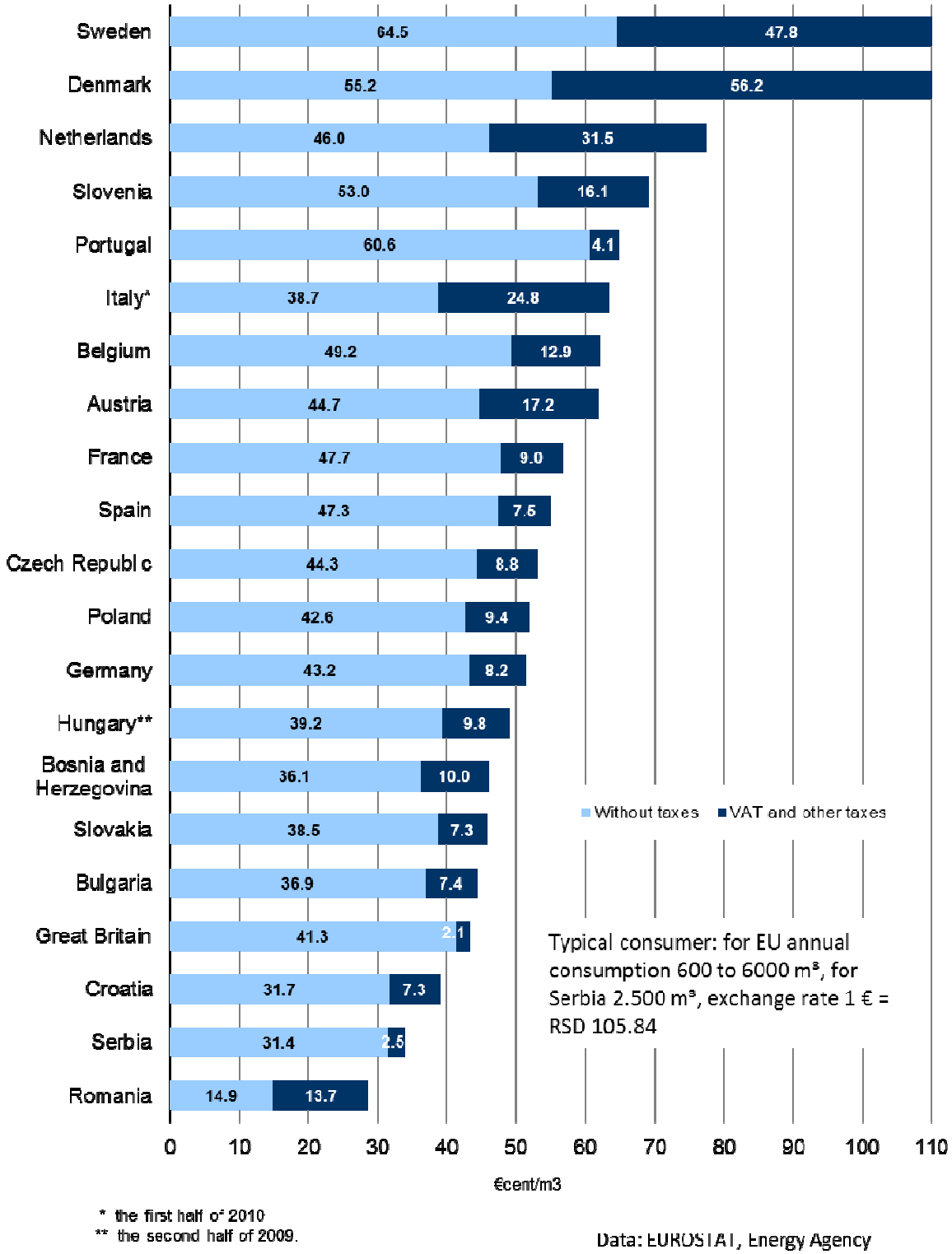

Figure 26. Natural gas prices for households – second half of 2010

Figure 27 indicates the comparison of natural gas price for reference customer - industry category purchasing gas from PE Srbijagas, in Croatia and in the EU countries in the second half of 2010. Only customers in Romania and Great Britain have lower prices for this category

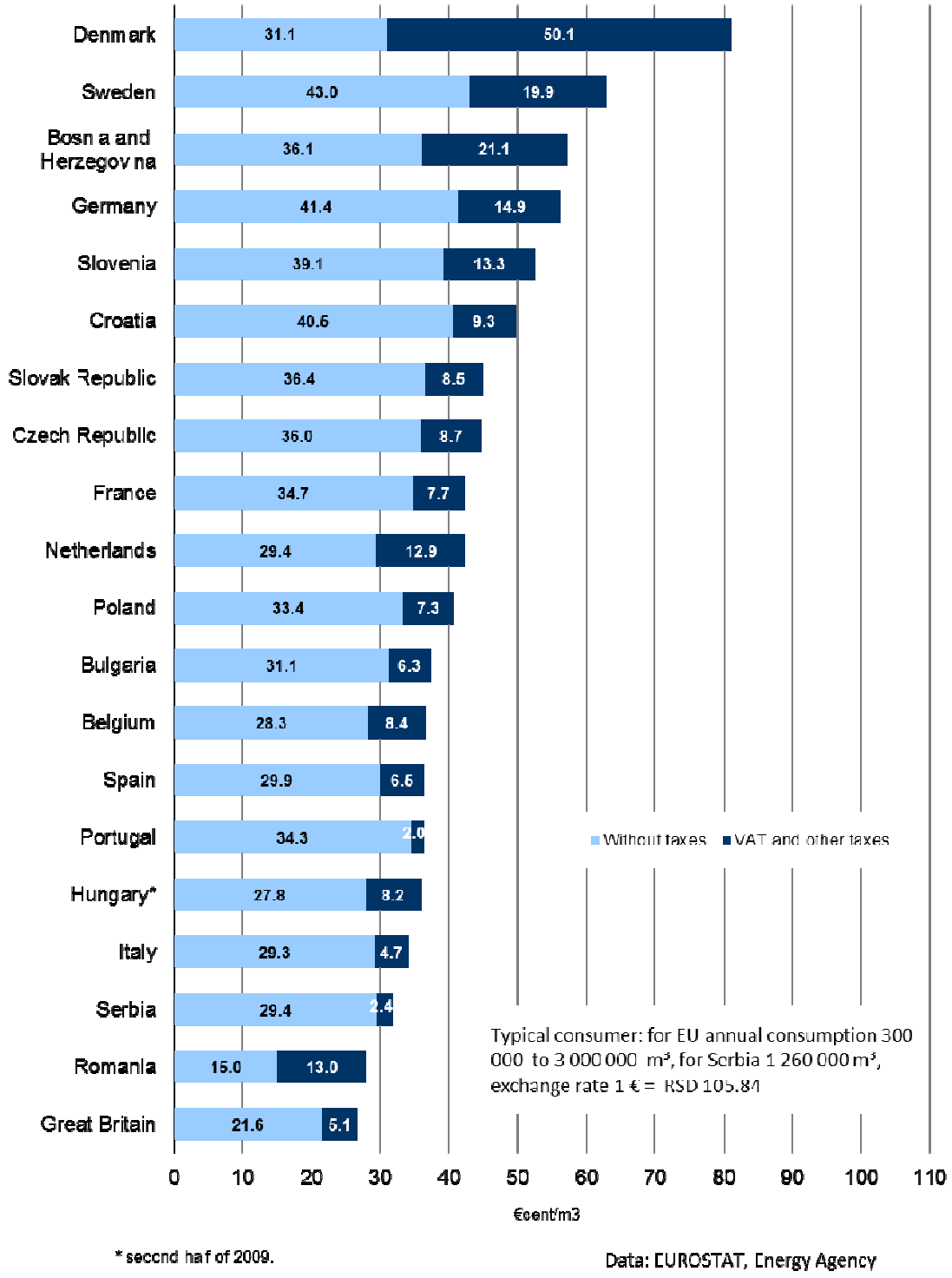

Figure 27. Natural gas prices for industry – second half of 2010

6.2.3 Regulation of natural gas transmission

6.2.3.1 Natural gas transmission and transmission system operation

Natural gas transmission is performed by PE Srbijagas and JSC Yugorosgaz, while PE Srbijagas operates the whole transmission system.

Natural gas transmission operators are responsible for safe natural gas transmission from the entry into natural gas transmission system to the point where natural gas is delivered to natural gas distributers, i.e. points where natural gas is delivered to customers connected to the transmission system as well as for functioning,

maintenance and development of the natural gas transmission system, pursuant to technical regulations and standards applicable for the energy activity they perform, and environmental protection conditions established by the law and other regulations.

Transmission system operator, PE Srbijagas is in particular responsible for:

- establishment of technical-technological conditions for connection of gas facilities, devices and plants;
- natural gas flow and pressure regulation;
- provision of security of transmission system operation;
- operational management of natural gas transmission system;
- harmonisation of manipulation in the transmission system;
- harmonisation of the operation of the natural gas transmission system of the Republic of Serbia and neighbouring gas transmission systems;
- monitoring of technical and functional capability of transmission and distribution facilities and approval of transmission facilities overhaul schedule;
- covering deviations between the current consumption and contracted natural gas quantities;
- use, maintenance and improvement of the monitoring system and natural gas transmission system management.

On October 10, 2008, upon the opinion in favour issued by the Agency, the Government of the Republic of Serbia approved the proposal of prices for the use of transmission network submitted by PE Srbijagas, and as a follow-up, the prices for the use of transmission network of JSC Yugorosgaz. It was the first time transmission prices and prices for transmission system operation were applied and calculated in line with the Tariff System for Access and Use of the Natural gas transmission System and Methodology for Establishment of Tariff Elements for Calculation of Prices for Access and Use of the System for Natural gas transmission System adopted by the Agency (Table 33).

Table 33. Transmission system charges

Natural gas transmission operator	Tariff rate		
	Energy carrier (RSD/m^3)	Capacity (RSD/m^3/day/year)	Energy carrier for system operation (RSD/m^3)
PE Srbijagas, Novi Sad	0.52	35.51	0.36
Yugorosgaz, JSC, Belgrade	1.35	66.28	0.36

Since February 2007, the Methodology on Criteria and the Manner for Establishment of Natural gas transmission and Distribution System Costs has been implemented. Since May 2008, new Methodology recognizing the existing experience has been implemented.

PE Srbijagas has neither adopted the Transmission System Code yet (inadequate content of the draft submitted to the Agency in the previous phases), nor the five-year development plan – the Energy Law did not define the deadline for the adoption of these documents. The Law did not stipulate the obligation of the system operator to adopt a Market Code, and therefore, it is necessary to include commercial and financial elements in the Transmission System Code. So as to facilitate the adoption of the Transmission System Code, PE Srbijagas hired a consultant with the EU support and the new draft is expected to be prepared in 2011.

Table 34. Harmonisation of PE Srbijagas tasks with requirements of Article 9 of Directive 2003/55/EC

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

6.2.3.2 Natural gas transmitted quantities

Natural gas quantities transmitted through the natural gas transmission system in period 2005-2010 are given in Table 35.

Table 35. Natural gas transmission (2005-2010)

Million m^3

	2005	2006	2007	2008	2009	2010
Production	253	250	254	257	307	331
Import	2 248	2 086	2 167	2 200	1 584	1 968
From storage	0	0	0	1	15	29
Cross-border transmission	386	369	319	313	237	249
Total transmission	**2 887**	**2 705**	**2 740**	**2 771**	**2 143**	**2 577**

6.2.3.3 Capacity allocation of on interconnection lines and congestion management

Being the transmission system operator, PE Srbijagas is responsible for the capacity allocation of on interconnecting gas pipelines and for congestion management. Natural Gas Transmission System Code will also define the mechanism for the allocation of capacities on interconnecting lines.

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

Firm entry capacity on the border with Hungary of 540,000 m^3/h (12.96 million m^3/day) had the average use of 56% in 2005, 52% in 2006, 53% in 2007, 53% in 2008, 38% in 2009 and 47% in 2010, bearing in mind that natural gas consumption is very unbalanced during different seasons and that the utilization of the capacities is considerably lower in summertime. During the coldest winter days, there were interruptions in gas supply for some industrial customers, due to the impossibility to import necessary gas quantities. Possible sources of imported natural gas are from the Russian Federation, from the direction Austrian – Hungarian border, from underground storages in Hungary or from Hungarian gas producer. Limiting factors included limited capacity of the interconnection line with Hungary and the withdrawal capacity from underground gas storage Banatski Dvor of only 1 million m³/day. The highest daily quantity overtaken on the border with Hungary in 2010 amounted to 13.7 million m³/day. Out of these quantities, 12.1 million m³/day for customers in Serbia and 1.7 million m³/day for cross-border transmission towards Bosnia and Herzegovina. Realized daily import is higher than the defined interconnector capacity, since the Hungarian transmission operator offered the capacities higher than12.96 million m³/day as interruptible capacity, i.e. the Hungarian transmission operator could not guarantee their every-day availability. Increase in capacities for natural gas withdrawal from the underground storage into transmission system is expected in winter season 2011/2012. Maximum capacity for natural gas withdrawal from underground storage is not known. Installed equipment is for withdrawal capacity of 5 million m³/day. With the available interconnector capacity for the supply of natural gas customers in Serbia of 11 million m³/day and interconnector

utilization rate of 90%, it is possible to have annual import of 3.6 billion m³, which is over 50% higher rate than the annual import for 2005-2010.

6.2.3.4 Balancing

Being transmission system operator, PE Srbijagas is responsible for natural gas system balancing in the Republic of Serbia.

System balancing is realized through the modification of nominations for imported gas quantities and the use of linepack during the day, as well as through the interruption of natural gas delivery to customers who have the possibility to use alternative fuels, mazoute in the first place, during the period of peak load when the needs exceed the interconnection capacity with Hungary.

Commissioning the underground natural gas storage Banatski Dvor, LLC should provide a considerable source for transmission system balancing for the transmission system operator.

6.2.4 Regulation of natural gas distribution

6.2.4.1 Natural gas distribution and distribution system operation

Energy entities providing natural gas distribution services are responsible for maintenance, operation and distribution system development, in line with the needs of customers they deliver natural gas to in a certain area.

There are 36 companies in Serbia which obtained the licence for distribution, distribution system operation and natural gas trade for tariff customers. New Energy Law stipulates bundling the distribution and distribution operation activities.

Since February 2007, the Methodology on Criteria and Method for Establishment of Cost for Connection to the Natural gas transmission and Distribution system has been applied. Since May 2008, the new Methodology which recognizes previous experience in its implementation is applied.

On October 10, 2008, upon the opinion in favour of the proposed prices, issued by the Agency, the Government of the Republic of Serbia approved the proposal of prices for distribution network tariffs submitted by PE Srbijagas. It was the first time that the tariffs for distribution and operation of natural gas distribution system are implemented in a way determined by the Tariff System for access and use of natural gas distribution system and Methodology for Establishment of Tariff Elements for Calculation of Prices for Access and Use of Natural Gas Distribution System. The approval of the tariffs for use of a distribution system for the majority of other distributers was given in the first half of 2009.

Only two distributers have submitted distribution system code so far. These proposals did not have the required content. The Agency presented the content proposal to distributers explained in detail. The Energy Law stipulated minimum content of the Distribution System Code which regulates technical conditions for the customer connection to the system, technical conditions for the connection to the transmission system, technical and other conditions for safe functioning of the distribution system and for the provision of a reliable and continuous customer supply with natural gas, procedure in case of crisis, rules on third party access to the distribution system, functional requirements and accuracy of measurement devices, natural gas measurement procedure, etc.

The content of Distribution System Code is partly related to the solutions given in the transmission system code. Therefore, the latter one should be adopted first. So as to speed up the adoption of system codes, PE Srbijagas, with the EU support, engaged a consultant. In 2012, a new draft is expected.

In Table 36, the harmonization of the tasks of distribution companies with requirements arising from Article 12 of the Directive 2003/55/EC is indicated.

Table 36. Harmonisation of distribution companies tasks with requirements from Article 12 Directive 2003/55/EC

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

Natural gas which is distributed through the distribution system to customers is to a great extent withdrawn from the natural gas transmission system, while only a small share is provided from natural gas production connected to the distribution system. Table 35 indicates natural gas quantities delivered to customers (without customers connected directly to the transmission system).

6.2.4.2 Distributed natural gas quantities

Natural gas quantities distributed through natural gas distribution system in the period 2005-2010 are indicated in Table 37.

Table 37. Distributed natural gas quantities in period 2005-2010

million m^3

	2005	2006	2007	2008	2009	2010
Total quantities on the point of entry into distribution system	1 428	1 439	1 332	1 349	1 159	1 306
Withdrawn from the transmission system	1 404	1 413	1 309	1 325	1 138	1 285
Production connected to distribution system	24	26	23	24	21	21
Delivered to households	296	292	276	279	272	269
Delivered to other customers	1 107	1 125	1 035	1 053	877	1 016
Losses in distribution system	25	22	21	17	10	21
Losses in distribution system (as% of quantity at the entry of distribution system)	1.75	1.53	1.58	1.26	0.86	1.61

6.3 Natural gas market

6.3.1 Market conditions and market opening

Adopting the Energy Law in 2004, the introduction of competition in natural gas sector in Serbia was initiated aiming at the increase of sector efficiency through the market mechanism effect in natural gas trade and supply, thereby keeping the regulation of natural gas transmission and distribution operation and gas storage operation as natural monopolies.

Transmission and distribution use of a system fees have been regulated since October 2008 (for PE Srbijagas), i.e. the first half of 2009 (for other gas distributers).

Thereby, one of the most important conditions for customers' entry into the market was fulfilled.

Market development requires the adoption and effective implementation of transmission and distribution system codes which will define all mutual rights and obligations of transmission operators, i.e. natural gas distributers and system users. These rules are adopted by energy entities, with the Agency approval.

On the day of entry into force of the Law, all natural gas customers were tariff customers, for whom, pursuant to the law, natural gas is provided by a trader for tariff customers' supply within PE Srbijagas at regulated prices. At the same time, there is a possibility for the customers complying with the criteria stipulated by the Law to obtain the eligible customer status and thereby, gain the possibility to procure natural gas in the market.

In the first phase, as of the day of entry into force of the Energy Law, natural gas market was open for all the customers with annual consumption exceeding 50 million m^3. Thereby, potentially around 50% of natural gas market was open in Serbia.

Since February 2008, based on the Decision of the Agency Council, all customers obtained the eligible customer status regardless of their annual natural gas consumption, except households with annual consumption lower than 50,000 m^3. Thereby, potentially around 87% of natural gas market was open. Seven customers used their eligible customer status and 1,059 million m^3 of gas was delivered to these customers, i.e. 46.6% of total consumption.

Natural gas market opening in Serbia will be continued until 2015 when the households will be also in a position to choose their gas supplier, this being the obligation of Serbia arising from the ratification of the Treaty establishing the Energy Community.

Table 38. natural gas market Opening

Market opening phases	I	II	Planned
Year	2005-2007	2008-2009	2015
Market opening [%]	50	87	100
Eligibility threshold [million m^3]	50	All customers except households	All customers
No. of potential eligible customers	60	10 367	27 5000
No. of actual eligible customers	0	7	-

The obstacles for market development in the past were limited capacities on the entry into the transmission system in peak load periods, as well as only one direction and supply source. In that respect, the situation will be improved in the future regarding capacities through the introduction of gas storage Banatski Dvor.

The Energy Law established natural gas market model consisting of two segments – regulated (providing tariff customers) and free market (with market players negotiate natural gas price). Price establishment procedure for both natural gas market segments is given in Figure 28.

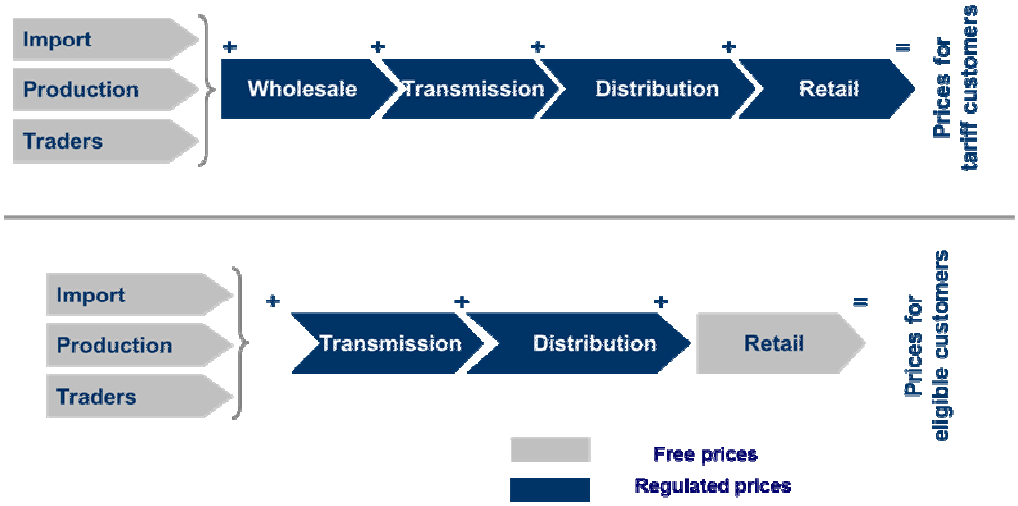

Figure 28. Gas price establishment procedure for tariff and eligible customers

In the **regulated segment**, wholesale for tariff customers is assigned to PE Srbijagas by the Government of the Republic of Serbia through a contract. Namely, PE Srbijagas is obligated to conclude an annual contract on natural gas procurement with the local producer, import-based or in the market, and to conclude a contract on natural gas sales with retailers for tariff customers at regulated prices.

In the free market, based on bilateral contracts, an eligible customer may select his natural gas supplier, while the traders are obligated to pay the regulated transmission price, i.e. transmission and distribution price for eligible customers connected to the distribution system.

Although there are 11 licences issued for free market trade, the only active trader in the market was PE Srbijagas as the wholesale trader for tariff customers, i.e. as a trader in the free market for eligible customers.

Finalization of regulation in line with the directives and the EU regulation, finalization of the Transmission System Code and their implementation, operation of the underground storage within planned scale, installation of adequate measurement equipment on the transmission system exits are the preconditions for the establishment of a functional natural gas market in Serbia.

6.3.2 Retail market

Out of total natural gas quantities delivered to end users, the share of customers connected to the transmission system amounted to around 40%, i.e. 40% in 2005, 36% in 2006, 42% in 2007, 40% in 2008, 33% in 2009 and 42% in 2010. The remaining quantities are delivered to the customers connected to the distribution system.

The greatest share of natural gas for end users is sold and delivered by PE Srbijagas: 87% in 2005, 84% in 2006, 84% in 2007, 83% in 2008, 80% in 2009 and 83% in 2010. The quantities delivered by other distributers as retailers are relatively stable, while the reduction of the share of PE Srbijagas in 2009 is due to sales reduction, above all, to big customers.

The second biggest retailer and natural gas distributer is Novi Sad Gas, with around 4% of total quantities. Individual share of other retailers in total quantities amounts to below 2%. The delivery of remaining retailers in 2009 was as follows: 5 retailers delivered between 20 and 30 million m^3, 4 of them delivered between 10 and 20 million m^3, 23 of them delivered less than 10 million m^3. In 2010, one of them delivered more than 30 million m^3, 4 of them delivered between 20 and 30 million m^3, 6 of them delivered between 10 and 20 million m^3, while 25 of them delivered less than 10 million m^3.

The number of natural gas customers in the end of 2008 amounted to around 242 000, in the end of 2009 to 246,389, in the end of 2010 to 252 092. Out of the given number in 2010, 240 725 or 95.5% represent households.

Household consumption accounted for 12% of total final consumption in 2005, 13% in 2006, 12% in 2007, 12% in 2008, 16% in 2009 and 12% in 2010. Natural gas consumption in households in 2005-2010 is slightly reduced due to natural gas price increase while it has been stabilized in the past two years to around 270 million m^3. Since there is an increased number of customers, average consumption per household is also slightly decreasing.

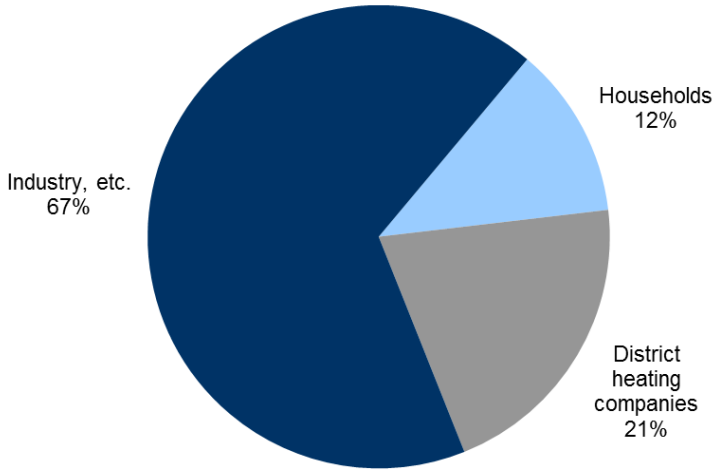

Figure 29. Natural gas consumption structure in Serbia in 2010

Table 39. Retailers' natural gas delivery 2008-2010

000 m^3

No.	Retailer	2008				2009				2010			
		Households	DHC	Industry, etc.	Total	Households	DHC	Industry, etc.	Total	Households	DHC	Industry, etc.	Total
1	7. Oktobar, Novi Knezevac	1 121	0	473	1 594	904	0	394	1 298	889	0	429	1 318
2	Beogas, Belgrade	12 774	0	614	13 388	14 035	0	1 263	15 298	13 454	0	1 483	14 937
3	Beogradske elektrane, Belgrade	3 586	0	662	4 248	4 037	0	770	4 807	3 522	0	902	4 424
4	Boss petrol, Trstenik	0	0	252	252	0	0	320	320	1	0	1 259	1 260
5	Coka, Coka	474	0	530	1 004	392	0	444	836	399	0	514	913
6	Drugi oktobar, Vrsac	10 510	1 619	15 178	27 307	9 751	1 570	13 843	25 164	9 609	1 540	14 820	25 969
7	Ekos, Zitiste	2 122	249	1 187	3 558	1 850	275	1 053	3 178	1 788	278	1 157	3 223
8	Elgas, Senta	1 880	0	711	2 591	1 521	0	24	1 545	1 637	0	703	2 340
9	Gas – Feromont, Stara Pazova	20 309	702	6 013	27 024	19 581	752	5 479	25 812	19 594	765	6 897	27 256
10	Gas - Ruma, Ruma	7 502	626	7 824	15 952	6 696	463	3 659	10 818	6 479	708	7 898	15 085
11	Gas, Becej	2 138	0	1 089	3 227	1 833	0	1 065	2 898	1 782	0	1 169	2 951
12	Gas, Temerin	7 775	0	957	8 732	7 158	0	977	8 135	7 209	0	1 190	8 399
13	Graditelj, Srbobran	1 901	0	856	2 757	1 658	0	498	2 156	1 582	0	1 221	2 803
14	Grejanje, Zrenjanin	18 441	0	3 813	22 254	17 285	0	3 810	21 095	17 287	0	4 296	21 583
15	Ingas, Indjija	10 114	0	8 788	18 902	9 810	0	5 377	15 187	9 650	0	7 159	16 809
16	Interklima, Vrnjacka banja	964	0	623	1 587	992	0	1 447	2 439	1 006	0	1 576	2 582
17	Komunalac, Novi Becej	1 881	0	1 036	2 917	1 628	0	797	2 425	1 488	0	997	2 485
18	Kovin – Gas, Kovin	3 942	1 200	7 968	13 110	3 350	1 025	3 187	7 562	3 583	1 174	5 069	9 826
19	Loznica – Gas, Loznica	1 322	805	937	3 064	1 338	836	1 678	3 852	1 368	998	2 113	4 480
20	LP – Gas, Belgrade	2 056	0	14	2 070	2 272	0	15	2 287	2 391	0	16	2 407
21	Novi Sad – Gas, Novi Sad	57 768	829	24 633	83 230	57 540	858	20 085	77 625	54 031	888	27 277	82 196
22	Polet, Plandiste	2 194	0	1 986	4 180	2 009	0	2 154	4 163	2 026	0	3 545	5 571
23	Resava Gas, Svilajnac	281	0	24	305	385	0	2 733	3 118	391	0	2 234	2 624
24	Rodgas, Backa Topola	1 294	0	4 909	6 203	1 217	0	4 250	5 467	1 274	0	4 826	6 100
25	Sigas, Pozega	0	0	0	0	52	0	1	53	229	0	13	242
26	Sloga, Kanjiza	2 927	0	2 544	5 471	2 461	0	2 139	4 600	2 284	0	2 442	4 726
27	Sombor – Gas, Sombor	1 939	724	5 089	7 752	1 916	702	3 375	5 993	2 029	2 619	6 098	10 746
28	Srbijagas, Novi Sad	80 720	393 202	1 390 238	1 864 160	80 426	375 468	934 871	1 390 365	79 881	431 019	1 353 478	1 864 378
29	Srem-Gas, Sremska Mitrovica	6 235	116	5 940	12 291	6 159	74	6 085	12 318	6 200	262	6 604	13 066
30	Standard, Ada	1 316	0	738	2 054	1 060	0	571	1 631	1 076	0	821	1 897
31	Suboticagas, Subotica	10 963	0	14 778	25 741	10 284	0	12 610	22 894	10 478	0	14 324	24 802
32	Tehnoenergetika, Krusevac	0	0	0	0	0	0	0	0	676	0	53	729
33	Toplana – Sabac, Sabac	0	0	0	0	0	0	0	0	1 000	0	98	1 098
34	Uzice-gas, Uzice	0	0	0	0	0	0	0	0	20	0	62	82
35	Vrbas- Gas, Vrbas	2 440	0	12 834	15 274	2 238	0	10 981	13 219	2 189	0	9 279	11 469
36	Yugorosgas, Belgrade	26	24 458	7 154	31 638	60	23 990	6 587	30 637	296	24 517	7 992	32 805
	Total:	**278 915**	**424 530**	**1 530 192**	**2 233 865**	**271 901**	**406 013**	**1 052 542**	**1 730 456**	**268 797**	**464 768**	**1 500 015**	**2 233 580**

ENERGY AGENCY OF THE REPUBLIC OF SERBIA

6.4 Security of supply

Security of natural gas customers' supply depends on the availability of the Russian import gas to a great extent. Limited gas pipeline capacity on the entry into country, unavailability of natural gas storage and the fact that there is only Russian gas being imported, resulted in supply interruptions of a great number of natural gas customers in January and February 2009. It is not expected to face these problems in the years to come, since there is an increased possibility to import gas through Hungary. In addition, the underground storage in Banatski Dvor started operating. It is expected that the storage will increase the withdrawal capacities in wintertime.

6.4.1 Natural gas consumption forecast

The most important changes for natural gas sector reflect in considerable natural gas price increase, conclusion of an agreement between the Republic of Serbia and the Russian Federation on the construction of the South Stream gas pipeline and the establishment of a joint company for natural gas storing. Global economic crisis affects natural gas consumption, i.e. affects the decrease.

Estimation envisages natural gas consumption to grow in the years to come. First of all, it is related to households, commercial customers, district heating systems and industry (without dominant natural gas share in total operation costs), due to the construction of new distribution networks in the areas which have not been gasified yet.

Natural gas consumption for industries with high natural gas consumption, first of all the industries using natural gas as a raw material, will depend on natural gas price and the efficiency of the industry.

Significant natural gas customers within industrial plants in future are considered to be the automobile factory in Kragujevac and Oil Refinery Pančevo Pančevo.

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

6.4.2 Projects for security of supply increase

As stated previously, the security of supply will be considerably increased through the beginning of operation in the underground storage Banatski Dvor with withdrawal capacity of 5 million m^3/day.

The construction of the South Stream gas pipeline, which is expected to be finalised by the end of 2015 will provide for a long-term security of natural gas supply in Serbia.

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. There were discussions held on connecting the systems between system operators, but no concrete projects have been presented yet. There is an ongoing preparation of the feasibility study for the connection with Bulgaria. project for connection with Croatia is being considered within the plans on the construction of the South Stream gas pipeline.

The implementation of the Directive 2004/67/EC which is expected upon the amendments to the Energy Law will determine concrete obligations of gas companies on security of supply in terms of necessary infrastructure and provision of natural gas for a defined group of customers in case of extremely low temperatures which, statistically speaking, occur once in two decades.

For World Bank purposes, in 2008, a regional gasification study for South-Eastern countries was prepared. Taking into consideration the country size and gas infrastructure which is not fully developed, the Study proposes the construction of several gas pipelines which would be interconnected in a Gas ring connecting the countries of the South-Eastern Europe.

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

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

The implementation of the Directive 2004/67 EC, which is expected upon the adoption of the new Energy Law will create the basis for the establishment of concrete commitments of gas companies in terms of security of supply, i.e. necessary infrastructure and provision of natural gas for a defined group of customers in case of extremely low temperature which statistically speaking occur once in 20 years' time.

7

OIL AND OIL DERIVATIVES

OIL AND OIL DERIVATIVES

7.1 Organisational and ownership structure of the oil sector

Oil sector restructuring was initiated by the adoption of the Energy Law in 2004.

7.1.1 Oil and oil derivatives production

Total crude oil consumption in 2010 in Serbia amounted to around 2.75 million tons. Crude oil is produced by NIS Naftagas company (associate of the Petroleum Industry of Serbia – Gaspromnjeft) and it includes both local production and the production in Angola. Local production in 2010 amounted to around 870 thousand tons (31.7%), while in Angola to around 80 thousand tons. The remaining 1.87 million tons (68.3%) were provided from import, primarily from Russia (Ural oil type).

Crude oil is processed in oil refineries in Pančevo and Novi Sad.

Oil derivatives, being final products, except those from refinery processing, are also provided from import. In 2010, around 0.94 million tons of derivatives were imported, mainly Euro diesel (EH 590) and liquid petroleum gas.

In 2005-2010, there was a growing LPG consumption of over 20%, as well as the total drop of motor fuels consumption of 5%, with simultaneous non-leaded motor fuel consumption growth with leaded motor fuel consumption decrease. In addition, there was diesel consumption increase of over 3%, while Euro diesel consumption decreased almost for 50% and diesel D2 consumption dropped for approximately 35%.

Oil derivatives consumption structure includes motor fuels – 72%, heavy fuel oil – 16%, other derivative – 12%.

NIS is the only company licenced for oil derivatives production, i.e. refinery processing in Serbia.

7.1.2 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 is around 150km. In 2005-2010 around 16.6 million tons of oil was transported in total, while only in 2010 around 540 thousand tons of local oil and 1.89 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. This type of transport is not a licenced energy activity.

In Serbia, there are still no commercial product lines for oil derivative transport, but the construction of these lines is within a five-year development plan of PE Transnafta. Oil derivatives are transported by means of classic transport (barges, railway and road tanker).

7.1.3 Oil and oil derivatives trade

In addition to oil and oil derivatives trade, as wholesale, retail in oil derivatives on motor fuel stations is also a licenced energy activity. Up to December 31, 2010, there were 216 energy entities licenced for wholesale and 384 retailers. In Serbia, there are retail activities on around 1450 public supply stations, while the biggest retailers are NIS-Gaspromnjeft, Lukoil-Beopetrol, OMV and Intermol.

Oil and oil derivatives trade licences which have been issued until December 31, 2010 imply that licenced oil and oil derivative trade is performed either in the so called transit, i.e. without previous storage phase, or on licenced facilities-reservoirs. Technical conditions for trade (reservoirs for trade) are defined in the disposition of the Agency certificate issuing the licence, while the disposition includes an indicator on total licenced capacity, location and the relevant oil derivative the energy entity plans to trade in. With reference to this, the ruling Law on Trade (“Official Gazette RS”, No. 53/10) which has been implemented since January 1, 2011 does not establish the wholesale implicitly without previous storage phase as a trade type, which was explicitly recognized in previous versions of the laws which were annulled on December 31, 2010.

In addition, licenced energy activities include oil and oil derivatives storing (gases, gasoline, diesel and heavy fuel oil types). Up to the end of 2010, there were 13 storage facilities licenced, NIS being the biggest one.

7.2 Regulation of oil and oil derivatives transport

7.2.1 Unbundling energy activities

Oil transport through oil pipelines is a regulated energy activity performed by PE Transnafta, which was established on October 1, 2005. Prior to the company establishment, this activity was performed within a single NIS system.

7.2.2 Price regulation

The only prices which are regulated are those for oil transport through oil pipelines. The legal framework for pricing regulation (methodology for the establishment of tariff elements and tariff system) was adopted by the Agency in 2006. The implementation was initiated in regulatory 2007. Further price establishment was prepared for regulatory 2009, the latest one for 2010. In 2005-2010, oil transport through oil pipelines was not based on contracted transport principles at different prices for local crude oil and imported crude oil.

Table 40. Transport system fee

Oil pipeline transporter	Oil pipeline section	Tariff "energy carrier" (RSD/tons/100 km)	Government approval
PE Transnafta, Pančevo	Sotin – Novi Sad	154.58	"Official Gazette RS", No. 33 as of April, 10, 2007
	Novi Sad – Pančevo	115.28	
	Sotin – Novi Sad	179.76	"Official Gazette RS", No. 88 as of October, 28, 2009
	Novi Sad – Pančevo	122.22	

7.3 Key elements of oil sector development

The 2004 Energy Law defined free oil derivative prices. The requirements in terms of quality of oil derivatives in the market, as well as the way the level of harmonisation of oil quality with the prescribed level are defined by the Rulebook on Technical and other Requirements for Liquid Fuels of Oil Origin, i.e. by the Rulebook on Technical and other Requirements for Liquid Petroleum Gas (“Official Gazette RS”, No. 36/09). These Rulebooks also define the procedure for installation marking used for oil derivatives trade, while other technical conditions, including necessary reservoir capacities for trade in each of oil derivatives types are defined by the Rulebook on Minimum Technical Conditions for Trade in Goods and Provision of Services in Commodities (“Official Gazette RS”, No. 47/96, 22/97, 6/99, 99/05, 100/07 and 98/09).

In total, oil derivatives price for end user, apart from being affected by determined customs record keeping rates, excises and taxes, it is affected by exchange quatations, both of crude oil and oil derivatives which are allowed to be imported, USD exchange rate, refinery processing costs, costs of crude oil and oil derivatives storing and transport. Final oil derivative price is also influenced by trading costs, goods insurance, environment insurance, oil and derivatives forwarding, etc. Since, being one of activities of the Agency, pricing regulation principles are implemented strictly in oil transport through oil pipelines, which have a minor share in final oil derivative price, there was no analysis made on average prices of individual oil derivatives in 2005-2010.

The prospects for oil sector development in future will primarily depend on market reaction to annulation of the Decree on Conditions and Procedure for Oil, i.e. Oil Derivatives Import and Processing, which was valid up to December 31, 2010. The annulment of the Decree presents a significant change on a way to oil market opening. There is a possibility for the local oil market to be affected by the announcement of the construction of a new oil refinery in Smederevo which would lead to the extension of the existing oil pipeline from Pančevo. In addition, PE Transnafta’s five-year development plan includes the construction of the product line in several phases which would consequently enable derivatives transport to Novi Sad through Pančevo and Smederevo to Nis, with a possibility to include Pristina. International projects in this field (PEOP) are currently on hold. The implementation of commitments arising from the Treaty establishing the Energy Community (Emergency Oil Stocks Directive 2006/67/EC) in local legislation in terms of minimum mandatory oil and oil derivatives stocks will greatly affect the development of oil and oil derivative market.

8

ACTIVITIES OF GENERAL INTEREST AND CUSTOMER PROTECTION

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8.1 Activities of general interest

Legal framework for the realisation of the commitment of public supply in the energy sector of Serbia is stipulated by two major laws: Law on Public Enterprises and Activities of General Interest ("Official Gazette RS", No 25/2002) and the Energy Law. The Law on Public Enterprises and Activities of General Interest regulates the activities of general interest and the commitment of public supply as stipulated by directives 54 and 55 which are in detail regulated by the Energy Law, which is *lex specialis* in this case. The Law on Public Enterprises and Activities of General Interest defines the activities which can be performed by a public enterprise or an entrepreneurship, or other form of an enterprise when these are entrusted by a competent body (by contract or concession). The main objective of the establishment of these companies 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.

On the other hand, the Energy Law defines 16 activities as activities of general interest in the fields of electricity, natural gas and oil in the energy sector.

In the field of electricity, they include the following: electricity production; electricity transmission; transmission system operation; electricity market organization, electricity trade for tariff customers; electricity distribution and electricity distribution system operation.

In the field of natural gas, they include: natural gas transmission, natural gas transmission system operation, natural gas distribution, natural gas distribution system operation, natural gas storing, natural gas storage operation and natural gas trade for tariff customers.

The 2004 Energy Law defines a set of obligations in terms of public service and end user protection.

8.2 Customer protection

Electricity and natural gas customers protection is provided by the Energy Law, by-laws regulating general conditions for electricity and natural gas supply and through the regulation of prices for services such as electricity and natural gas delivery and the regulation of prices for electricity transmission and distribution, i.e. natural gas transmission and distribution, while for tariff customers, the energy prices for end users as well are also regulated.

The Decree on Electricity Supply conditions ("Official Gazette RS", No. 107/2005) defines in more detail the rights and obligations of energy customers, suppliers, as well as the conditions under which certain customers cannot be disconnected from the network in case of unsettled liabilities.

In addition, there is a system developed so as to protect energy vulnerable customers (customers with low income level, disabled people, the ill, etc.) in cooperation with several ministries, organized by the ministry in charge of social policy. The Agency is involved in this project and the Agency prepared the document "Comparative analysis of protection of energy vulnerable customers in different countries".

Competent institutions from the European Union and the Energy Community 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 activities serving as wider customer protection and which is actively dealt with in the Agency are measures and preparation activities which are organized so as to adopt the rules on technical and commercial quality of electricity delivery. The Agency is also involved in the definition of mandatory elements of the electricity and natural gas bills which are supposed to provide all necessary information to the customers in terms of their consumption and costs structure, as well as the guidelines for customers how to exercise their rights.

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

Support to the most vulnerable customers in Serbia is given based on the decision on discounts given by the public enterprise Elektroprivreda Srbije. Centers for social work determine which customers are entitled to discounts and they submit the lists to the distribution companies. The customers entitled to discount are those who are entitled to allowances as well as the customers in need of social funds (pensioners with the lowest pension level, the disabled, those under constant medical care, the poor and the families entitled to child allowance for the third and fourth child). 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) and
- 25% 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).

Discount to electricity price

	2008		2009		2010	
	No. customer months	Amount	No. customer months	Amount	No. customer months	Amount
		RSD 000		RSD 000		RSD 000
5% discount	12 748 266	1 112 623	14 697 742	1 251 575	15 162 606	1 386 502
MOP	213 893	49 691	209 392	56 384	163 435	55 236
Social care allowance	324 008	85 420	200 918	62 787	248 199	70 414
Total	**13 286 167**	**1 247 734**	**15 108 052**	**1 370 746**	**15 574 240**	**1 512 152**

MOP – allowances - families with no income or with income under social security level
According to the list, there are 785 346 customers entitled to this type of assistance, while there were 364 508 of them on the Distribution company list on December 31, 2010.

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

According to the list, there are 377 065 customers, all of them being on the list of the Distribution company on December 31, 2010.

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

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