CROATIAN ENERGY REGULATORY AGENCY

ANNUAL REPORT 2009.

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Introduction

Dear reader,

I am pleased to present to you the Report on the work of the Croatian Energy Regulatory Agency for the year 2009. Its content is an overview of the most important events on the energy market, the state of regulated energy activity and development of the energy, natural gas, biofuels, oil and oil products market in the Republic of Croatia. It also brings an overview of the security of electricity and natural gas supply as well as the method of regulating the public service obligation of electricity and natural gas supply. The Report also shows the most important activities of the Croatian Energy Regulatory Agency in performing prescribed tasks.

Within the scope of negotiations on Croatian accession to the European Union, Chapter 15 - Energy, has been temporarily closed.

In the Republic of Croatia, a process of restructuring and liberalization of the energy sector is underway, conforming to the requirements of the Croatian legislation in the energy sector, which is harmonized with the legislation of the European Union. Significant progress in the restructuring and liberalization process in 2009 has, among other things, been achieved by adopting the subordinate legislation for the gas sector.

Regarding the security of supply and further opening of the energy market, care should be taken regarding the construction of new energy facilities for the production of electricity and thermal energy, storage capacities for natural gas, oil and oil derivatives, terminals for liquefied natural gas, transmission systems and new delivery routes. With the construction of new transportable energy capacities, connecting the transmission systems of the Republic of Croatia with the transmission systems of the neighbouring countries, basic conditions for the development of a competitive energy market are created and the security of energy supply in the Republic of Croatia and the region is improved.

The event which exerted a highly significant influence on operation of the Croatian Energy Regulatory Agency is adoption of the "Third Package" of energy regulations of the European Union in July 2009, which entered into force on September 3, 2009 and will apply as of March 3, 2011.

The basic features of the "Third Package" are the following: larger role and greater power of national regulatory authorities, establishment of European Network of Transmission System Operators for Electricity and Natural Gas (ENTSO), increased requests for unbundling of transmission system, protection of energy customers, especially so called "vulnerable" customers and establishment of the Agency for Cooperation of Energy Regulators (ACER).

Pursuant to the "Third package", the Croatian Energy Regulatory Agency should, among other, have the authority to determine or approve the transmission and distribution tariffs or their methodology, to monitor and assess the investment plans of the transmission system operators, to monitor the transparency level of wholesale gas prices and to monitor the efficacy of the market opening and the market competition on both the wholesale and the retail level and be entitled to impose penalty to energy undertakings which act contrary to the regulations.

Though the Croatian Energy Regulatory Agency is largely ready for assuming the new authorities and tasks of the "Third Package", we are nevertheless intensively preparing so that the Croatian Energy Regulatory Agency could execute the new tasks in the energy sector of the Republic of Croatia as efficiently as possible.

President of the Managing Council,

Danijel Žamboki, MSc

SUMMARY AND MORE SIGNIFICANT EVENTS IN 2009

2. Summary and more significant events in 2009

2.1 An overview of the basic organizational scheme and authorities in the Agency

Pursuant to the Act on the Regulation of Energy Activities (Official Gazette "Narodne novine", No. 177/04 and 76/07), the Croatian Energy Regulatory Agency (hereinafter referred to as: the Agency) is obliged to submit a report on its operations to the Croatian Parliament on annual basis, especially regarding:

- observations relevant for the development of the energy market and public services within the energy sector,
- analysis of the energy sector,
- the results of follow-ups on the fulfilment of obligations of energy undertakings pursuant to Article 10, Paragraph 2 of the Act on the Regulation of Energy Activities and
- realization of the Agency's budget for the previous year.

Upon the acceptance of the Report, the Agency is obliged to publish it in its gazette or at theAgency's website in the Croatian language and translated into English.

The Agency was founded in 2004 pursuant to the Act on the Regulation of Energy Activities as an autonomous, independent and non-profit public institution with the purpose of establishing and implementing the regulation of energy activities in the electricity, thermal energy, gas and oil and oil derivatives sector.

Pursuant to the Decision of the Government of the Republic of Croatia on the Amount of Fees for carrying out the Regulation of Energy Activities (Official Gazette "Narodne novine", No. 155/08, 50/09 and 103/09) the assets for financing the Agency's work are provided from the following sources:

- the fee in the amount of 0.06% of the total annual income from sales of goods and/or services realized in the previous year by energy undertakings involved in energy activities based on the license for carrying out energy activities;
- one-time payments for the work of the Agency, more precisely the fees for issuing licences for carrying out energy activities, fees for acquiring the status of eligible producer and fees for the settlement of claims, complaints and requests.

Pursuant to the provision of Article 7 of the Act on the Regulation of Energy Activities, the Agency reports to the Croatian Parliament for its operation.

The legality of the Agency's operations and general acts is supervised by the Ministry of Economy, Labour and Entrepreneurship (hereinafter referred to as: the Ministry).

The financial operations of the Agency are supervised by the authorized public administration body or a legal person who has been granted public authorization.

Legislative framework

The legislative framework for the performance of activities within the competence of the Agency is defined by the following regulations:

1. the Act on the Regulation of Energy Activities (Official Gazette "Narodne novine", No. 177/04 and 76/07),
2. the Energy Act (Official Gazette "Narodne novine", No. 68/01, 177/04, 76/07 and 152/08),
3. the Electricity Market Act (Official Gazette "Narodne novine", No. 177/04, 76/07 and 152/08),
4. the Gas Market Act (Official Gazette "Narodne novine", No. 40/07, 152/08 and 83/09),
5. the Act on the Production, Distribution and Supply of Thermal Energy (Official Gazette "Narodne novine", No. 42/05 and 20/10),
6. the Act on Oil and Oil Derivatives Market (Official Gazette "Narodne novine", No. 57/06),
7. Act on Biofuels for Transportation (Official Gazette "Narodne novine", No. 65/09),
8. the Act on Ratification of Energy Community Treaty (Official Gazette "Narodne novine-International Agreements", No. 6/06 and 9/06),
9. the General Administrative Procedure Act (Official Gazette "Narodne novine", No. 47/09),
10. the Ordinance on Licences for Carrying Out the Energy Activities (Official Gazette "Narodne novine", No. 118/07 and 107/09),
11. the Decision on the Amount of Fees for Energy Regulatory Activities (Official Gazette "Narodne novine", No. 155/08, 50/09 and 103/09),
12. the Regulation on the Validity Period for Licences for Carrying Out Energy Activities (Official Gazette "Narodne novine", No. 50/09 and 105/09) and
13. and other subordinate legislation adopted pursuant to the Energy Act and other acts that regulate the carrying out of particular energy activities.

Agency's activity

The Agency's activity is laid down in the Act on Regulation of Energy Activities and includes the following activities in particular:

- Issuing licences for carrying out energy activities,
- Issuing decisions on granting the eligible producer status,
- Issuing tariff systems without the amounts of tariff items,
- Issuing a tariff system for oil transmission by oil pipelines,
- Issuing a decision on the amount of tariffs for the transmission of oil by oil pipelines,
- Issuing a Methodology of Providing Energy Balancing Services in the Electric Power System,
- Issuing ordinances on the amount of fees for connection to the network/system and for the connection power increase,
- Issuing opinions or approvals regarding rules and regulations within the energy sector,
- Monitoring cross-border capacities and congestion management,
- Performing monitoring operations (over the implementation of tariff systems and all prescribed fees, over the services rendered by energy undertakings, etc.),
- Customer protection,
- Settling disputes regarding carrying out regulated energy activities,
- Collaboration with ministries and competent inspectorates,
- Submitting requests for instituting offence proceedings and
- other activities.

The Agency's activities are of special interest to the Republic of Croatia, and the Agency performs them based on public authorization.

The Agency's operation is public and all activities are performed in line with the principles of transparency, objectivity and impartiality.

Agency's organizational scheme

The organizational scheme performance of the Agency is elaborated in the Agency's Articles of Association (Official Gazette "Narodne novine", No. 99/07 and 137/08). It enables efficient performance of professional work under the competence of the Agency.

The Agency has a Managing Council and Expert Services.

The Agency is managed by the President of the Managing Council.

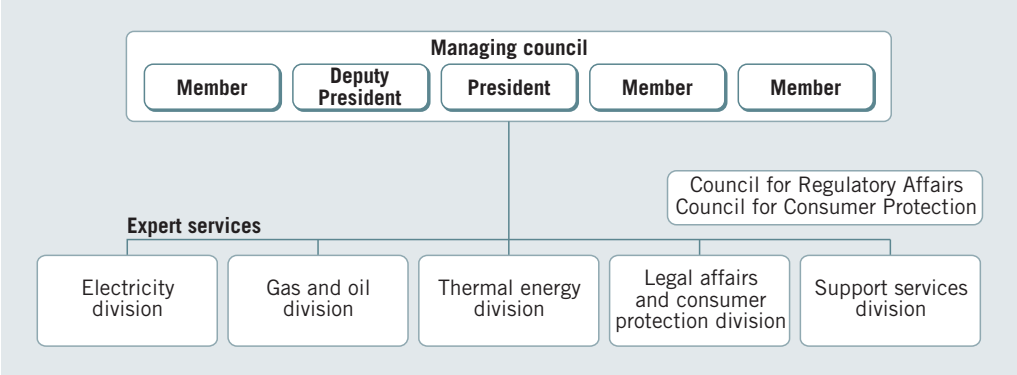
The Managing Council and its President perform activities based on public authorisations.

Expert Services perform professional, administrative and technical activities as required by the Agency. Main organizational units of the Expert Services are as follows:

- Electricity Division,
- Gas and Oil Division,
- Thermal Energy Division,
- Legal Affairs and Consumer Protection Division and
- Support Services Division.

The organizational scheme of the Agency is shown in Figure 2.1.1.

Figure 2.1.1. Organizational scheme of the Agency



The Divisions are managed by Directors appointed by the President of the Managing Council in accordance with the public invitation to tender for a period of four years with possibility of re-election.

The professional activities of the Agency are managed by Division Directors who report to the President of the Managing Council.

In 2009, the Agency employed seven new employees. Accordingly, as at December 31, 2009 the Agency had a total of 49 employees, the same as at August 1, 2010.

In 2009, 30 meetings of the Agency's Managing Council were held and in total 425 items on the agenda were discussed.

All decisions of the Managing Council are regular published at the Agency's website.

Customer protection

Within its competence, the Agency actively participates in customer protection in several ways such as:
- By way of monitoring the energy undertakings, controlling the quality of energy undertakings' services and by collecting and processing data regarding activities of the energy undertakings within the scope of customer protection, pursuant to provisions of the Energy Act and the acts that lay down the carrying out of respective energy activities, as well as by cooperation with the ministries and competent inspectorates, pursuant to special acts;
- Through Customer Protection Council whose members are also representatives of customer protection associations, which provides recommendations and opinions about measures on customer protection regarding implementation of energy activities regulation system, follows up issues regarding customer protection, valid regulations and their effects on customer protection, gives its opinion about legal acts and subordinate legislation related to customer protection and takes the initiative for amendments to the regulations within the scope of customer protection;
- Through resolution of individual claims and complaints from customers, based on public authorisations pursuant to the Act on the Regulation of Energy Activities.

Energy customers may claim the protection of their rights before the Agency through claims, complaints and petitions and other statements regarding the activities of the energy undertakings within the electricity, thermal energy, natural gas and oil sector.

A decision of the Agency on settling disputes brought before the Agency is final, but the unsatisfied party may initiate administrative proceedings by filing a suit to the Administrative Court of the Republic of Croatia.

In 2009, the Agency received a total of 90 claims, complaints and petitions from energy customers. Out of that, there were 20 claims, and two administrative disputes were initiated against the decision of the Agency within its scope of competence.

2.2 More significant events on the energy market

2.2.1 Electricity

Legislative framework

The regulation of the electric power sector of the Republic of Croatia is based on the Energy Act, the Electricity Market Act, the Act on the Regulation of Energy Activities and subordinate legislation adopted in the previous period based on said acts.

In October 2009, the Croatian Parliament adopted the Strategy for Energy Development of the Republic of Croatia (Official Gazette "Narodne novine", No. 130/09).

As to further changes of the legislative framework in 2009 related to the area of electricity, it should be mentioned that the Decision on the Amount of Tariff Items within the Tariff System for Electricity Generation, with the Exception of Eligible Customers, without Amount of Tariff Items (Official Gazette "Narodne novine" No. 103/09) were adopted by the Government of the Republic of Croatia and that the Agency adopted Amendments to the Methodology of Providing Energy Balancing Services in the Electric Power System (Official Gazette "Narodne novine", No. 70/09).

HEP - The operator of the transmission system (hereinafter referred to as: HEP-OPS) adopted the Ordinance on Allocation and Use of Cross-Border Transmission Capacities, Rules for Joint Annual Auction and Joint Monthly Auctions regarding allocation of cross-border transmission capacities in 2010 between regulation

field of HEP-OPS and MAVIR (Hungarian transmission system operator) and Rules for joint daily auction regarding allocation of cross-border transmission capacities between regulation fields of HEP-OPS and MAVIR (Hungarian transmission system operator).

Electricity trading

Since the Ordinance on Allocation and Use of Cross-Border Transmission Capacities has been adopted following the annual allocation of capacities for the year 2009, the capacity was allocated on the annual level on all borders without auction. In 2009, HEP-OPS conducted at the borders with the Republic of Slovenia, the Republic of Serbia and Bosnia and Herzegovina monthly auctions for its own part of the available transmission capacity (ATC). MAVIR conducted joint monthly auctions for the total ATC on the Croatian-Hungarian border. Since April 2009, HEP-OPS has introduced the monthly auctions for its own part of the available transmission capacity at the borders with the Republic of Serbia, the Republic of Slovenia, the Republic of Serbia and Bosnia and Herzegovina. In 2009, the average monthly net transmission capacity (NTC) for import amounted to 2,581 MW, whereas for import amounted to 2,093 MW. The average allocated values for import into the Republic of Croatia amounted to 679 MW, whereas for export from the Republic Croatia amounted to 651 MW.

As to the generation of electricity, the energy undertaking HEP Proizvodnja d.o.o., managing 89% of generation capacities generated 92% of the total electricity in the Republic of Croatia in 2008. In 2009, the Agency issued three new licences for electricity generation, and all three cases involved generators of electricity which generate electricity from renewable energy sources and cogeneration.

The total consumption of electricity in the Croatian electric power system amounted to approximately 17.7 TWh and was lower by 1.1% than in 2008. Domestic production satisfied 68% of energy demands. 17% of energy was obtained through trading and 15% was obtained from the nuclear power plant NPP Krško. Hrvatska elektroprivreda d.d. (hereinafter referred to as: HEP d.d.) is a 50% co-owner of the nuclear power plant NPP Krško and disposes of 338 MW of the plant's power. The largest proportion of the electricity is generated in hydro power plants and amounts to 56.31%, followed by thermo power plants with a proportion of 43.35% and wind power plants with a 0.34% proportion.

In 2009, the Agency issued and renewed four (4) licences for the energy activity of trading,intermediation and representation on the energy market and issued one (1) licence for the energy activity of electricity trading.

In December 2009, the Agency gave consent to HEP-OPS to the new Ordinance on Allocation and Use of Cross-Border Transmission Capacity, Rules for Joint Annual Auction and Joint Monthly Auctions regarding allocation of cross-border transmission capacities in 2010 between regulation areas of HEP-OPS and MAVIR (Hungarian transmission system operator) and consent to the Rules for Joint Daily Auctions regarding allocation of cross-border transmission capacities between regulation areas of HEP-OPS and MAVIR (Hungarian transmission system operator).

Since the manner of definition of the reference price of balancing electricity caused large monthly oscillations, the Methodology of Providing Electricity Balancing Services in the Electric Power System was amended in June 2009 to introduce a new manner of definition of the reference price taking into account not only the mean value of the base energy price on the European Energy Exchange in Leipzig, but also the domestic prices of the electricity generation through the amount of the tariff item for generation of electricity for the operating energy of the household customers category with single-tariff energy measurement.

Electricity supply

According to the Electricity Market Act of 1 July 2008, all electricity customers were free to select their electricity supplier, i.e. they obtained the status of eligible customer. Only the customers from the household category and so called small customers could be supplied at regulated, resp. tariff rates under the terms of obligation to provide a public service, if they didn't want to select free their supplier on the market. The Act on Amendments to the Electricity Market Act of December 2008 lays down that HEP Operator distribucijskog sustava d.o.o. (hereinafter referred to as: HEP-ODS) as the energy undertaking performing all tasks of a distribution system operator shall also perform the tasks of supplier of tariff customers under the terms of obligation to provide a public service. Until 1 July 2009, only the customers from the household category can be supplied at regulated prices, if they want. Small customers were required to select a supplier until 30 June 2009 and conclude a contract on supply with the respective supplier. By the end of 2009, all customers connected at high voltage, a majority of customers connected at medium voltage and a large part of small customers concluded a contract on supply with a supplier of eligible customers based on market criteria. In 2009, five energy undertakings obtained a licence for electricity supply.

Transmission and distribution network infrastructure

The construction of a 400 kV power-transmission line Ernestinovo-Pecs, as one of the most significant electric power facilities in the transmission network, with the total length of 86.4 km and with the transmission capacity of 2x1100 MW, with expected completion in 2010 has continued. The construction of the respective power-transmission line shall greatly increase cross-border capacities and the possibilities of electricity trading in the region. The cross-border transmission line of 220 kV Mraclin-Prijedor at the border with Croatia and Bosnia and Herzegovina was reconstructed due to increase of supply security and the needs of the future thermal power plant TPP "Sisak C".

Regulation and unbundling of activities

Within the scope of monitoring the unbundling of activities, HEP-OPS submitted to the Agency the Annual Report on the implementation of the Program for Provision and Implementation of Transparency, Objectivity and Impartiality Criteria of HEP OPS in the period from July 2008 to December 2009. The Annual Report was published at the HEP-OPS website *(http://ops.hep.hr/ops/dokument)*.

HEP-ODS also delivered to the Agency the Report on the implementation of the Program for Provision and Implementation of Transparency, Objectivity and Impartiality Criteria of HEP ODS for 2009. The Annual Report was published at the HEP-ODS website *(http://www.hep.hr/ods/propisi)*.

Security of supply

In 2009, the activities on the construction of the hydro power plant "Lešće" with 42 MW power and additional cogeneration combined gas plant on the location of the TPP-HP Zagreb ("Block L") with 100 MW electric power continued. Project documentation was being prepared for the new cogeneration gas-steam plant TPP "Sisak C" with 230 MW power. Revitalization of several hydro power plants continued, which will provide additional 130 MW of generation capacities until 2011. In 2009, the Strategy of Energy Development in the Republic of Croatia was adopted. This Strategy defines the development of the Croatian energy sector until 2020.

2.2.2 Natural gas

Legislative framework

The regulation of the gas sector of the Republic of Croatia is based on the Energy Act, the Gas Market Act, the Act on the Regulation of Energy Activities and on the subordinate legislation adopted based on said acts.

In 2009, the following laws and subordinate legislation were adopted:
- Act on Amendments to the Gas Market Act (Official Gazette "Narodne novine", No. 83/09),
- Regulation on Amendments to the Regulation on the Security of Natural Gas Supply (Official Gazette "Narodne novine", No. 92/09),
- Regulation on Amendments to the Regulation on the Security of Natural Gas Supply (Official Gazette "Narodne novine", No. 153/09),
- General Conditions of the Natural Gas Supply (Official Gazette "Narodne novine", No. 43/09),
- Ordinance on the Natural Gas Market Organization (Official Gazette "Narodne novine", No. 50/09),
- Network Rules for the Transmission System (Official Gazette "Narodne novine", No. 50/09),
- Network Rules for the Gas Distribution System (Official Gazette "Narodne novine", No. 50/09),
- Rules for Use of the Gas Storage System (Official Gazette "Narodne novine", No. 50/09) and
- Amendments to the Tariff System for the Natural Gas Supply, with Exception of Eligible Customers, without the Amount of Tariff Items (Official Gazette „Narodne novine", No. 87/09).

In addition, the Decision on the Gas Procurement Undertaking for the Suppliers of Tariff Customers in the Republic of Croatia (Official Gazette "Narodne novine", No. 92/09), the Decision on the Price of the Procurement of Gas to the Gas Procurement Undertaking for the Suppliers of Tariff Customers (Official Gazette "Narodne novine", No. 153/09), the Decision on the Amount of Tariff Items for the Transmission of Natural Gas in 2009 (Official Gazette "Narodne novine", No. 103/09), Decision on the Amount of Tariff Items for Natural Gas Storage (Official Gazette "Narodne novine", No. 73/09), Decision on the Amount of Tariff Items in the Tariff System for the Natural Gas Supply, with Exception of Eligible Customers, without the Amount of Tariff Items (Official Gazette "Narodne novine", No. 103/09), Decision on the Amount of Tariff Items in the Tariff System for the Natural Gas Supply, with Exception of Eligible Customers, without the

Amount of Tariff Items (Official Gazette "Narodne novine", No. 158/09 and the Decision on Implementation of the Special Measure to Mitigate the Natural Gas Price Increase in Households in 2010 (Official Gazette „Narodne novine", No. 158/09) were adopted in 2009.

In the course of 2009, the remaining two pieces of subordinate legislation were prepared: the Ordinance on the Fee for Connection to the Gas Distribution or Transmission System and for Increase of Connection Capacity and the Methodology of Providing Natural Gas Balancing Services in the Gas System. The Draft Proposal of the Methodology of Providing Energy Balancing Services in the Gas System was set down in the meeting of the Managing Council of the Agency in May 2010. Upon its adoption, the legislative framework for organizing the gas market in the Republic of Croatia will entirely be established. However, for the purpose of adoption and implementation of the provisions of the Methodology of Providing Energy Balancing Services in the Gas System it is required to amend the Ordinance on Organization of the Natural Gas Market and General Conditions of the Natural Gas Supply. In line with the above mentioned facts, the Draft Proposal of the Ordinance on the Organization of the Natural Gas Market was set down on the meeting of the Agency's Managing Council in May 2010 and submitted to the Ministry of Economy, Labour and Entrepreneurship for further procedure.

In February 2010, the Government of the Republic of Croatia adopted the Regulation on the Amount and the Payment Method of the Fee for Concession regarding Gas Distribution and Construction of the Distribution System (Official Gazette "Narodne novine", No. 27/10), whereas in April 2010 the Agency adopted Amendments to the Tariff System for the Natural Gas Distribution, without amount of the tariff items (Official Gazette "Narodne novine", No. 44/10).

Act on Amendments to the Gas Market Act

The main reason for the adoption of the Act on Amendments to the Gas Market Act is a harmonization with the new Act on Concessions (Official Gazette "Narodne novine", No. 125/08), which entered into force on 1 January 2009.

The Act on Amendments to the Gas Market Act includes in particular:
- the harmonization with the new Act on Concessions,
- introduction of the obligatory obtaining of Agency's opinion about a five-year plan of the network development of the production pipelines, transmission system, distribution system, gas storage system and LNG terminals,
- from the provisions the INA-Industrija nafte d.d., Zagreb (hereinafter referred to as: INA d.d.) as unambiguously defined gas procurement undertaking is being deleted and
- the obligation of data delivery pursuant to the Regulation on the Security of Natural Gas Supply and penalty clauses in case of the non-fulfilment of the respective obligation are being stipulated.

Regulation on Amendment to the Regulation on the Security of Natural Gas Supply and Regulation on Amendments to the Regulation on the Security of Natural Gas Supply

At the meeting held on September 30, 2008, the Government of the Republic of Croatia adopted the Regulation on the Security of Natural Gas Supply. At the moment of its adoption, INA d.d. was nominated as the gas procurement undertaking for the suppliers of tariff customers under Article 38, paragraph 1 of the Gas Market Act and the obligations of INA d.d. were stipulated accordingly.

In addition, the Act on Amendments to the Gas Market Act (Official Gazette "Narodne novine", No. 83/09) lies down that the Government of the Republic of Croatia defines the gas procurement undertaking for the suppliers of tariff customers. Since the Government of the Republic of Croatia defined the energy undertaking Prirodni plin d.o.o.[1] as the gas procurement undertaking for the suppliers of tariff customers, it was required to harmonize the provisions of the Regulation on the Security of Natural Gas Supply with the Gas Market Act with the first amendments.

Within the second Amendments to the Regulation on the Security of Natural Gas Supply, the following amendments were adopted:
- Three new definitions were added: "customers with highly sensitive technological and/or production process", "technological minimum" and "technical minimum",
- the obligation of submitting data on the technological and technical minimum was prescribed,
- the seven levels of measures for decrease or termination of the natural gas supply to particular customers for the purpose of elimination of the state of crisis were replaced with 11 levels which more thoroughly prescribe the above-mentioned measures and attribute more importance to the sensitivity of particular customer categories to decrease or terminate the natural gas supply and
- the content of the crisis plan was amended.

[1] *In 2009, INA d.d. founded a company Prirodni plin d.o.o. which obtained the licence for carrying out the energy activity of gas supply.*

General Conditions of Natural Gas Supply

Based on provisions of the Energy Act, the Government of the Republic of Croatia adopted the General Conditions of Natural Gas Supply in April 2009.

The General Conditions of Natural Gas Supply regulate:
- the procedure of issuing energy approval for connection and establishment of conditions for connection to the distribution or transmission system,
- Conditions for connection to the distribution or transmission system, natural gas supply and use of the gas system,
- Monitoring of the quality of service and the quality of natural gas supply,
- Mutual contractual relationships between energy undertakings and system users,
- Obligations and responsibilities of energy undertakings and system users,
- Conditions of measurement, calculation and charging of supplied natural gas,
- Conditions regarding implementation of limitations or outage of natural gas supply and
- Procedures of identifying and calculation of unauthorized natural gas consumption.

Ordinance on the Organization of the Natural Gas Market

In April 2009, the Minister of Economy, Labour and Entrepreneurship adopted the Ordinance on the Organization of the Natural Gas Market governing the procedure of reservation and allocation of gas system capacities, rules for capacities trading and balancing of gas system, rules for use of operative stocks, procedure for change of the gas supplier and other rules for carrying out access of the third party to the gas system. The gas market model which is in detail governed by the Ordinance on the Organization of the Natural Gas Market is based on the balance group as an organizational unit on the gas market, which balances the gas system and which is organized and managed by the head of the balance group.

Network Rules of the Transmission System

Network Rules of the Transmission System govern technical requirements for operation, managing and development of the transmission system which is managed by Plinacro d.o.o., the transmission system operator, for connection of the transmission system with other areas of the gas system, for connection to the transmission system and measurement rules regarding gas transmission.

Network Rules of the Gas Distribution System

Network Rules of the Gas Distribution System govern technical requirements for operation, managing and development of the distribution system, connection to the other areas of the gas system, connection to the distribution system and measurement rules regarding gas distribution.

Rules for the Use of the Gas Storage System

Rules for the Use of the Gas Storage System govern the technical requirements for operation, managing and development of the gas storage system, connection to the other areas of the gas system, connection to the transmission system and measurement rules regarding gas storage.

Amendments to the Tariff System for the Natural Gas Supply, with Exception of Eligible Customers, without the Amount of Tariff Items

The first reason for the adoption of the Amendments to the Tariff System for the Natural Gas Supply, with Exception of Eligible Customers, without the Amount of Tariff Items is the opening of the gas market. The gas market has been entirely opened since 1 August 2008 for all customers. In addition, the transitional and final provisions of the Gas Market Act under Articles 68 to 71 lay down the obligation of the public service for customers from the household category, who have a status, rights and obligations of a tariff customer. That means that they are supplied with the gas in a regulated manner and at a regulated price. Therefore, the Amendments to the Tariff System were adopted, which set out the tariff items only for tariff customers from a household category, but not for other customers from the commercial category.

The second reason is charging the final customers from the household category with the actual costs of gas

supply incurred to the gas supplier. Namely, according to the Decision on the Price of the Procurement of Gas to the Gas Procurement Undertaking for the Suppliers of Tariff Customers (Official Gazette "Narodne novine", No. 142/08) , i.e. according to the Decision on the Price of the Procurement of Gas to the Gas Procurement Undertaking for the Suppliers of Tariff Customers (Official Gazette "Narodne novine", No. 153/09) adopted by the Government of the Republic of Croatia, the price of gas procurement may vary proportionately to the increase or decrease of the actual lower calorific value of the delivered gas and it is calculated according to the prescribed formula, which means that the purchase price for the gas supplier may change every 15 days, which often happens in practice. Before the Amendments to the Tariff System came into force, the gas supplier could not charge the said cost in the same amount to the final customer from the household category because the gas price for these customers was defined in the fixed amount pursuant to the Decision of the Government of the Republic of Croatia (Official Gazette "Narodne novine", No. 154/08) and it contained the average cost on the annual level for the difference in the calorific value. For this reason, the Amendments to the Tariff System were adopted in order to enable that the cost of procurement of the natural gas caused by changes in the calorific value of the gas can be a variable component of the price for the tariff customers, charged according to the measured values specified in the invoices of the gas procurement undertaking to the gas suppliers.

2.2.3 Oil and oil derivatives

Legislative framework

The oil and oil derivatives market and the pertinent energy activities are regulated by the Energy Act, Act on the Regulation of energy activities and Act on the Oil and Oil Derivatives Act. In addition, according to the Act on the Air Protection (Official Gazette "Narodne novine", No. 178/04 and 60/08), the quality of oil derivatives which may be placed on the domestic market or which are used for personal needs is regulated by accompanying rules.

The conditions for wholesale trading and trading with foreign countries for oil derivatives are additionally govern by the Regulation on Terms and Conditions for Wholesale Trading and Trading with Foreign Countries for particular goods (Official Gazette "Narodne novine", No. 58/09 and 27/10).

In 2009, the following rules regarding the security of supply on the Croatian market of oil and oil derivatives were adopted:
- Decision on the Quantity and Structure of Compulsory Oil and Oil Derivatives Stocks for 2009 (Official Gazette "Narodne novine", No. 48/09),
- Ordinance on Particular Issues regarding Activity of the Croatian Agency for Compulsory Oil and Oil Derivatives Stocks (Official Gazette "Narodne novine", No. 64/09) and
- Plan of Securing, Dynamics of Establishing and Renewing of Compulsory Stocks of Oil and Oil Derivatives, of Storage Organization and Regional Schedule (Official Gazette "Narodne novine", No. 149/09).

With the aim of ensurance of oil derivatives introduction according to the strictest valid quality requirements, in 2009 the Program of Introduction to the Domestic Market of the Motor Fuel and Diesel Fuel with the Maximum Sulphur Content of 10 mg/kg was adopted (Official Gazette "Narodne novine", No. 81/09). The said regulation prescribe to the liquid oil fuel procurement undertakings (legal entities or natural persons involved in production, import and trading of liquid oil fuels) that they can put on market only the fuels which comply with the EURO V quality requirements at motorways and state roads, larger cities and tourist centres.

In April 2010, the Decision on the Quantity and Structure of the Compulsory Oil and Oil Derivatives Stocks was adopted (Official Gazette "Narodne novine", No. 41/10).

2.2.4 Biofuels

Legislative framework

The market of biofuels and corresponding energy activities are regulated by the Energy Act, the Act on the Regulation of Energy Activities and Act on Biofuels for Transportation.

The Act on Biofuels for Transportation regulates the production, trading and storage of biofuels, the use of biofuels in the transportation and adoption of programs, plans and measures for production inducement and use of biofuels for transportation. The purpose of the respective Act is achievement of goals related to

the sustainable development as regards transportation, reduction of negative impacts on the environment, enhancement of the security of fuel supply in an ecologically acceptable manner, satisfaction of fuel needs of customers and fulfilment of international obligations of the Republic of Croatia regarding reduction of the greenhouse gas emission. The goals are to be achieved by incentivising of production and use of biofuels for the transportation as replacement for diesel fuel or motor fuel.

In addition, the Regulation on Terms and Conditions for the Wholesale Trading and Trading with Foreign Countries additionally governs the conditions for the wholesale trading and trading with foreign countries, among others, also for biodiesel.

For the purpose of establishing of a complete legislative framework, the Act on Biofuels prescribes adoption of a range of subordinate legislation. Therefore, in April 2010, the Ordinance on Measures for Incentivising of Biofuel Use for Transportation (Official Gazette "Narodne novine", No. 42/10) that prescribes the measures for inducement of biofuel use for transportation and the manner of their implementation was adopted. Furthermore, it is expected that the Act on Biofuels will be amended in 2010 for the purpose of the complete harmonization with the European regulations.

2.2.5 Thermal energy

Legislative framework

The regulation of the thermal energy sector of the Republic of Croatia is based on the Energy Act, the Act on Thermal Energy Production, Distribution and Supply, the Act on the Regulation of Energy Activities and the subordinate legislation adopted according to the aforementioned acts.

In December 2008, the Government of the Republic of Croatia adopted Decision on the Amount of Tariff Items in the Tariff System for Energy Activities of Thermal Energy Production, Distribution and Supply (Official Gazette "Narodne novine", No. 154/08) (hereinafter referred to as: Decision on the Amount of Tariff Items of December 2008). The amounts of tariff items are valid since 1 January 2009.

Tariff System for Energy Activities of Thermal Energy Production, Distribution and Supply, without the Amount of Tariff Items

On 23 December 2008, the Managing Council of the Agency adopted the Amendments to the Tariff System for Services of Thermal Energy Production, Distribution and Supply, without the Amount of Tariff Items (Official Gazette "Narodne novine", No. 65/07 and 154/08). According to these Amendments all commercial customers of the Third category (kindergartens, schools, libraries, welfare centres, educational centres, pupils' hostels, churches, sports facilities, sports clubs, associations, faculties, educational institutions, nursing homes) according to the Decision on the Amount of Tariff Items in the Tariff System for Services of Thermal Energy Production, Distribution and Supply (Official Gazette "Narodne novine", No. 115/07 and 127/07) belong to the tariff group of "households on central thermal systems" resp. "households on local heating plants (separate boiling rooms)" two years after the effective date of the respective Amendments to the Tariff System. Following this period they are transferred to the tariff group of "industry and commercial customers on the centralized heating system", resp. "industry and commercial customers on local heating plants (separate boiling rooms)". This provision applied for the first time in 2009.

Decision on the Amount of Tariff Items of December 2008

The Decision on the Amount of Tariff Items of December 2008 defines the amount of tariff items under the Tariff System for the Services of Thermal Energy Production, Distribution and Supply in the following cities: Zagreb, Osijek, Sisak, Velika Gorica, Zaprešić, Samobor, Karlovac, Slavonski Brod, Split, Varaždin, Rijeka, Virovitica, Vinkovci, Vukovar and Požega. The Decision on the Amount of Tariff Items of December 2008 applied in the entire 2009 and in the heating season 2009/2010 in all aforementioned cities.

Ordinance on the Allocation and Calculation of Costs for Thermal Energy Supplied

The Ordinance on the Allocation and Calculation of Costs for Thermal Energy Supplied regulates the installation of thermal devices for internal distribution of supplied thermal energy, devices for regulating heat emission and devices for measuring the consumption of the thermal energy and it also prescribes the models of allocation and calculation of costs for the supplied thermal energy on a common thermal energy meter for

thermal energy customers that own separate parts of facilities representing an independent usage unit and they record thermal energy consumption via devices for local distribution of supplied thermal energy or by measuring it via a separate device for measuring the consumption of thermal energy.

Experiences gained in 2009 in the Republic of Croatia regarding application of devices for local distribution of the thermal energy supplied on the common thermal energy meter indicate the possibility of significant savings due to reduction of the thermal energy consumption, especially if all or the large part of co-owners of the independent usage units (flats and business premises) decide to install these devices. However, there are cases when by installing devices for local distribution of the thermal energy supplied the expected cost reduction of the thermal energy was not achieved, especially when the relative large number of co-owners did not install devices for local distribution of the thermal energy supplied, but the distribution is still based on the surface portion of the particular residential or business unit in the total surface of a building to which the thermal energy was supplied through the common thermal energy meter.

2.3 More significant events within the Agency's scope of work

2.3.1 Electricity

In 2009, the Agency was mainly focused on the following activities in the electricity domain:
- Analyzing the Proposal of the Amounts of Tariff Items for Production of Electricity for Tariff Customers,
- Monitoring the Rules on Managing and Allocation of Connection Line Capacities and harmonization of the capacity allocation scheme with the Directive (EC) No. 1228/2003 and the relevant guidelines. For that purpose, the Agency gave consent to HEP-OPS for the new Ordinance on Allocation and Use of Cross-Border Transmission Capacities.
- Collection and processing of data related to activities of energy undertakings for the purpose of control over unbundling of energy activities and quality of services provided by energy undertakings,
- Issuing and renewal of 14 licences for carrying out energy activities,
- Issuing 12 decisions on acquiring the status of eligible energy producer and
- Resolving a total of 105 cases, customer claims and complaints related to the activities performed by energy undertakings.

In 2009, the Agency adopted Amendments to the Methodology of Providing Electricity Balancing Services in the Electric Power System.

In 2009, within the cooperation with the ministries and competent inspectorates, the Agency issued its opinion regarding:
- Proposal of the Change of the Amount of Tariff Items in the Tariff System for Electricity Production, with Exception of Eligible Customers, without the Amount of Tariff Item and
- Draft Regulation on Incentives for Generation of Electricity from Renewable Sources and Cogeneration.

2.3.2 Natural gas

The Agency's activities in the gas sector in 2009 included the following:
- Preparation and adoption of the Amendments to the Tariff System for Natural Gas Supply, with Exception of Eligible Customers, without the Amount of Tariff Items,
- Setting out the Draft Ordinance on the Natural Gas Market Organization,
- Setting out the Draft Network Rules on the Gas Distribution System,
- Preparation of the Ordinance on the Fee for Connection to the Gas Distribution or Transmission System and for Increase in the Connection Capacity,
- Preparation of the Methodology of Providing Natural Gas Balancing Services in the Gas System,
- Issuing an opinion regarding the Draft General Terms and Conditions for the Natural Gas Supply,
- Issuing an opinion regarding the Draft Regulation on the Amendment to the Regulation on the Natural Gas Supply Security,
- Issuing an opinion regarding the Draft Regulation on the Amendments to the Regulation on the Natural Gas Supply Security,
- Issuing an opinion regarding the Proposals of the Amount of Tariff Items for the following activities:
  - transmission of natural gas (one opinion),
  - storage of natural gas (one opinion),
- Preparation of the Proposal of the Amount of Tariff Items for the following activities:
  - gas supply (76 proposals),

- Issuing 19 licences for carrying out energy activities, out of which one licence being issued for the purpose of gas production, supply and sales of natural gas from own production, gas supply and organization of the gas market respectively, eight licences being issued for gas distribution and seven being issued for the purpose of gas supply.
- extension of 11 licenses for carrying out energy activities of gas distribution and
- transfer of seven licenses for carrying out energy activities, out of which four licenses for gas distribution and three licenses for gas supply.

In the period from 1 January 2010 to 31 May 2010, a total of three licences were issued for carrying out the energy activities in the gas sector and one licence was extended.

In addition, the Agency set out the Draft Methodology of Providing Natural Gas Balancing Services in the Gas System, which is to be adopted.

2.3.3 Oil and oil derivatives

The Agency's activities in the oil and oil derivatives sector in 2009 included the following:
- Issuing 50 licences for carrying out energy activities, out of which one licence was issued for the transmission of oil derivatives through oil product pipelines and other transmission means, 35 licences were issued for oil, oil derivatives and biofuel transmission by road transportation, five licences for storage of oil and oil derivatives, four licences for oil derivatives wholesale, four licences for the LPG wholesale and one licence for trading, intermediation and representation on the energy market,
- Renewal of 55 licences for carrying out energy activities, out of which one being issued for transmission of oil derivatives through oil product pipelines and other transportation means, 44 licences for transmission of oil, oil derivatives and biofuels by a road transportation, four licences for storage of oil and oil derivatives and six licences for oil derivatives wholesale.

In the period from 1 January 2010 to 31 May 2010, a total of 12 licences were issued for carrying out energy activities in the oil and oil derivatives sector and seven licences were renewed.

2.3.4 Biofuels

The Agency's activities in the biofuel sector in 2009 included the following:
- Issuing three licences for carrying out energy activities, out of which one is issued for biofuel production, one is issued for biofuel storage and one is issued for biofuel wholesale.

In the period from 1 January 2010 to 31 May 2010, one licence for carrying out energy activities in the biofuel sector was extended. In addition, the Agency's representatives participated as working group members in preparation of Draft Proposal of Amendments to Biofuel Act and Draft Proposal of subordinate legislation, stipulated by the Act on Biofuels for Transmission.

2.3.5 Thermal energy

In 2009, the Agency issued several proposals, opinions, responses and adopted correspondingdecisions in the thermal energy sector as it regards the actions of energy undertakings and the protection of thermal energy customers upon requests submitted by the Ministry, the State Inspectorate, government and self-government bodies, energy undertakings, customer claims, complaints and requests and based on petitions of legal entities and natural persons.

In 2009, the Agency issued nine licences, renewed one licence and transferred three licences for carrying out energy activities for thermal energy production, distribution and supply.

Control over application of the Tariff System for Energy Services of Thermal Energy Production, Distribution and Supply

Pursuant to the Decision on the Amount of Tariff Items of December 2008 which lays down the amount of tariff items for energy undertakings carrying out energy activities of thermal energy production, distribution

and supply in the Republic of Croatia, all energy undertakings were obliged to apply the amount of tariff items starting from 1 January 2009. In 2009, the Agency conducted the control over application of the Tariff System and the amount of tariff items in all energy undertakings for the thermal energy production, distribution and supply in the Republic of Croatia. Opinions on the control findings regarding application of the Tariff System and the amounts of tariff items were adopted. They were published at the Agency's website.

The Agency conducted control over application of the Tariff System for Energy Services of the Thermal Energy Production, Distribution and Supply pursuant to the authorizations granted to the Agency by Article 29, Paragraph 7 of the Energy Act and by Article 9, Paragraph 1, Subparagraph 3, 8 and 13 of the Act on Regulation of Energy Activities. The Agency established, that the provisions of the Tariff System for Energy Services of Thermal Energy Production, Distribution and Supply, without the Amount of Tariff Items (Official Gazette "Narodne novine", No. 57/06, 88/06, 105/06, 116/06, 55/07, 65/07 - revised version and 154/08) and of the Decision on the Amount of Tariff Items for Energy Services of Thermal Energy Production, Distribution and Supply (Official Gazette "Narodne novine", No. 154/08) are applied in the prescribed manner by the following energy undertakings: energy undertaking TEHNOSTAN d.o.o. from Vukovar, energy undertaking TERMOPLIN d.d. from Varaždin, energy undertaking TOPLANA d.o.o. from Karlovac, energy undertaking VIRKOM d.o.o. from Virovitica, energy undertaking TEKIJA d.o.o. from Požega, energy undertaking VINKOVAČKI VODOVOD I KANALIZACIJA d.o.o. from Vinkovci, energy undertaking BROD-PLIN d.o.o. from Slavonski Brod and energy undertaking HEP TOPLINARSTVO d.o.o. from Zagreb, while certain shortages were identified in the energy undertaking ENERGO d.o.o. from Rijeka and energy undertaking HVIDRA d.o.o. from Split were identified.

2.3.6 International cooperation

Since its establishment in 2005, the Agency has achieved an active international cooperation with the regulators from the countries in the region as well as with the regulators of the EU member countries and the largest part of cooperation has taken place through membership in regulatory bodies at the European level, i.e. at the level of European regions and participation in professional working groups of these associations.

Within the international cooperation in 2009, the Agency's participation in the Energy Community Regulatory Board (ECRB) should be stressed as well as the engagement in the ECRB working groups: EWG (Electricity Working Group), CWG (Customer Working Group), CAO IG (Coordinated Auction Office Implementation Group) and GWG (Gas Working Group) and in the Athens Forum (electricity) and Gas Forum.

The Agency became a monitor in the ERGEG (European Regulatory Group for Electricity and Gas) and its working groups, at whose meetings the Agency representatives participated. The Agency's representatives participated in the Florence Forum (electricity) and Madrid Forum (gas) - at two of the most important conferences, where the regulation of the energy sector and energy market is being discussed.

The Agency participated in the MEDREG (Mediterranean Working Group on Electricity and Natural Gas), and its representatives are active participants of permanent working groups dealing with international issues, electricity, renewable energy sources, environment and energy efficiency. Since the establishment of the Agency, the Agency's representatives are standing members of Licensing Committee, Tariff Committee, Chairmen Committee as well as Legal Regulation and Gas Working Groups of the ERRA (Energy Regulators Regional Association).

REGULATED ACTIVITIES AND ELECTRICITY MARKET DEVELOPMENT

3. Regulated activities and electricity market development

3.1 Regulated activities

3.1.1 Transmission and distribution system

Transmission and distribution of electricity are regulated activities performed as public services. There is one transmission system operator in the Republic of Croatia- HEP-OPS. HEP-OPS is in charge of security and security of the electric power system operation and proper coordination of the production, transmission and distribution systems. The transmission electric power network and production facilities under the responsibility of HEP-OPS are shown in Figure 3.1.1. The basic data on the transmission network are shown in Table 3.1.1.

Figure 3.1.1. Scheme of transmission network and production facilities of the Croatian electric power system

Source: HEP-OPS

Table 3.1.1. Basic data on the distribution network as at 31 December 2009

Data type/voltage level	400 kV	220 kV	110 kV	Medium Voltage	TOTAL
Line length [km]	1.159	1.417	4.809	111	7.497
Transformer substations [pcs]	5	6	114	0	125
Installed power [MVA]	4.100	2.120	4.880	0	11.100

Source: HEP-OPS

The basic data on the transmission network are shown in the Table HEP - ODS is the sole distribution system operator in the Republic of Croatia. Territorial organization of 21 distribution areas of HEP-ODS is shown in Figure 3.1.2.

Figure 3.1.2. Distribution areas of HEP- ODS

Source: HEP-ODS

Main features of the distribution network of HEP-ODS are shown in Tables 3.1.2., 3.1.3. and 3.1.4.

Table 3.1.2. Line lengths per voltage levels in 2009

Voltage level	Length [km]
Lines 110 kV	77,9
Lines 35 i 30 kV	4.725,1
Lines 20 kV	5.030,7
Lines 10 kV	30.341,5
Network 0,4 kV	62.558,9
Household connections	30.204,0
Total	132.938,2

Source: HEP-ODS

Table 3.1.3. Transformer substations per voltage levels in 2009

Voltage level	Own	Joint*	Total
Substations 110/ 30 i 110/35 kV	0	30	30
Substations 110/35(30)/10(20) kV	0	29	29
Substations 110/10(20) kV	8	37	45
Substations 35(30)/10(20) kV	324	24	348
Substations 20/0,4 kV	3.421	299	3.720
Substations 10/0,4 kV	20.916	1.676	22.592
Total	24.669	2.095	26.764

* Owned by HEP-OPS and/or customers

Source: HEP-ODS

Table 3.1.4. Transformers per voltage levels in 2009

Voltage level	Installed Power [MVA]	No.
Substations 110 kV	2.192,0	70
Substations 30 i 35 kV	4.416,6	691
Substations 20 kV	1.028,7	3.709
Substations 10 kV	6.532,7	21.987
Total	14.170,0	26.457

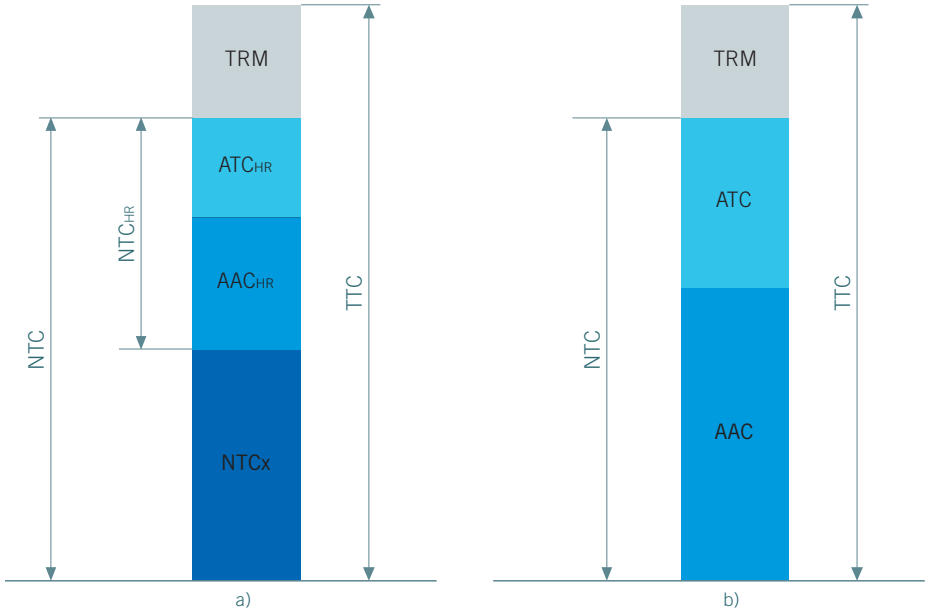
Source: HEP-ODS

3.1.2 Cross-border capacities and congestion management

Pursuant to the Article 10, Paragraph 2, Subparagraph 1 of the Act on the Regulation of Energy Activities and in cooperation with the regulatory bodies of the neighbouring countries to which the electric power system is connected, the Agency shall especially monitor rules on managing and allocation of interconnection capacities and the organization which eliminates congestion within the national distribution network/system.

The principle of the allocation of cross-border transmission capacities for borders with the Republic of Serbia, Republic of Slovenia and Bosnia and Herzegovina is shown in Figure 3.1.3.a. Croatian part of the available transmission capacity for auction (ATCHR) is defined as a total transmission capacity (TTC) that is established in accordance with the neighbouring transmission system operator, reduced by the transmission reliability margin (TRM), reduced by the net transmission capacity belonging to the neighbouring transmission system operator (NTCx) and reduced by the already allocated capacity (AACHR). The principle of allocation at bilateral auctions is shown in Figure 3.1.3.b. The available transmission capacity (ATC) defined as a total transmission capacity (TTC) reduced by the transmission reliability margin (TRM) and by the already allocated capacity (AAC) is being allocated.

Figure 3.1.3. Principles of establishing cross-border transmission capacities



Since January 2007 the Rules on Allocation and Use of Cross-Border Transmission Power have been applied by HEP-OPS. In December 2008, the new Ordinance on Allocation and Use of Cross-Border Transmission Capacities (hereinafter referred to as: Ordinance) was adopted. The Agency approved this Ordinance, considering that it eliminated all shortcomings of the Rules valid up to that moment since the said Rules were not in full compliance with the Regulation of the EC 1228/2003 and the pertinent guidelines for the congestion management.

Since the Ordinance was approved upon the annual allocation for 2009, the capacity was allocated on the annual level on all borders without the auction. The cross-border transmission capacities for all directions for the Croatian part of the NTC (Net Transmission Capacity) value allocated at annual level for the period from 1 January 2009 to 31 December 2009 are shown in Table 3.1.5. Only one request was submitted for each direction and the entire available capacity was allocated. International codes of respective countries are HR (Republic of Croatia), SI (Republic of Slovenia), HU (Republic of Hungary), BA (Bosnia and Herzegovina) and RS (Republic of Serbia).

Table 3.1.5. Capacities allocated at annual level per border for 2009

Direction	Available [MW]	Requested [MW]	No. of requests	Allocated [MW]
HR ← BA	175	175	1	175
HR → BA	175	175	1	175
HR ← SI	250	250	1	250
HR → SI	250	250	1	250
HR ← RS	50	50	1	50
HR → RS	50	50	1	50
HR ← HU	300	300	1	300
HR → HU	100	100	1	100
Import	775	775	-	775
Export	575	575	-	575

Source: HEP-OPS

In 2009, HEP-OPS conducted at the borders with the Republic of Slovenia, Republic of Serbia and Bosnia and Herzegovina monthly auctions for its part of ATC (Available Transmission Capacity). MAVIR, the Hungarian transmission system operator conducted common monthly auctions for the ATC on the Croatian-Hungarian border. Since April 2009 HEP-OPS has been introduced daily auctions of its part of ATC at the borders with the Republic of Slovenia, Republic of Serbia and Bosnia and Herzegovina.

The capacity is allocated at a daily level in accordance with the arrival of requests up to the completion of ATC (first come-first served).

During the preparation for the new regime of cross-border capacity allocation with interconnection lines between the Republic of Croatia and the Republic of Hungary HEP-OPS prepared a new Draft Ordinance on Allocation and Use of Cross-Border Transmission Capacities and prepared in cooperation with MAVIR a Proposal of Bilateral Rules for Annual and Monthly Auctions on the Croatian-Hungarian border and a Proposal of Bilateral Rules on Daily Auction on the Croatian-Hungarian border. In November 2009, the Agency gave its prior approval for the Draft Ordinance.

Average winter and summer values of cross-border net capacity (NTC) for 2008 and 2009 are shown in Table 3.1.6. Winter values refer to January, February, March, October, November and December, whereas summer values refer to April, May, June, July, August and September.

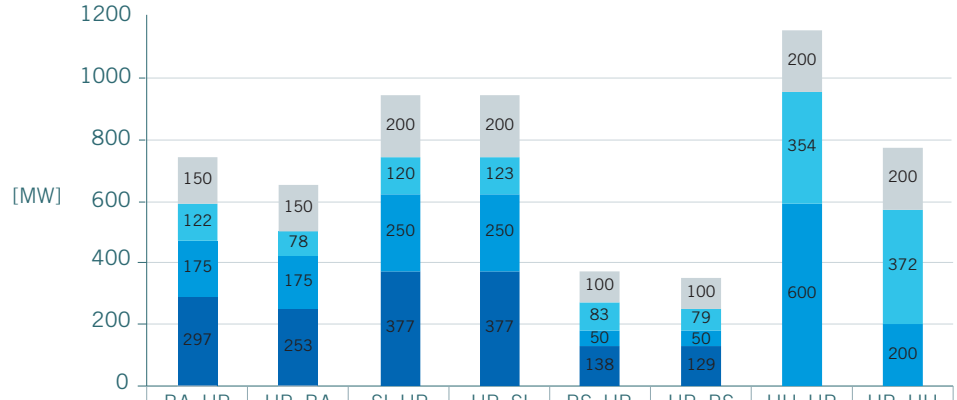
Table 3.1.6. Average winter and summer values of NTC per border for 2008 and 2009 [MW]

	Winter values				Summer values			
direction		2008	2009	Change	Direction		2008	2009	Change
HR ←	BA	567	595	5%	HR ←	BA	547	592	8%
HR →	BA	488	528	8%	HR →	BA	463	483	4%
HR ←	SI	825	750	-9%	HR ←	SI	808	758	-6%
HR →	SI	850	750	-12%	HR →	SI	783	758	-3%
HR ←	RS	213	300	41%	HR ←	RS	125	250	100%
HR →	RS	225	267	19%	HR →	RS	200	250	25%
HR ←	HU	925	1000	8%	HR ←	HU	833	917	10%
HR →	HU	400	567	42%	HR →	HU	300	583	94%
Import		2530	2645	5%	Import		2313	2517	9%
Export		1.963	2112	8%	Export		1747	2075	19%

Source HEP-OPS

Annual values of cross-border transmission capacities per border in 2009 are shown in Figure 3.1.4. The lowest average value of NTC for import and export is identified at the border with the Republic of Serbia, whereas the highest average value of NTC for import is identified at the border with the Republic of Hungary. The highest average value of NTC for export is identified at the border with the Republic of Slovenia. The highest average ATC for import and export is identified at the border with the Republic of Hungary.

Figure 3.1.4. Annual values of cross-border transmission capacities per border in 2009



	BA_HR	HR_BA	SI_HR	HR_SI	RS_HR	HR_RS	HU_HR	HR_HU
TRM	150	150	200	200	100	100	200	200
Not-allocated	0.1	0.4	2.5	0.0	0.4	0.4	4.6	2.9
Allocated	122	78	120	123	83	79	354	372
AAC	175	175	250	250	50	50	600	200
NTCx	297	253	377	377	138	129	0	0

Source: HEP-OPS

The average annual NTC for import in 2009 amounted to 2,581 MW, whereas for export amounted to 2,093 MW. Average allocated values for import into the Republic of Croatia amounted to 679 MW, whereas for export from the Republic of Croatia amounted to 651 MW.

The average allocated capacities on monthly auctions per participant at the borders with the Republic of Slovenia, Republic of Serbia, Bosnia and Herzegovina and the Republic of Hungary are shown in Figures 3.1.5. and 3.1.6. At the borders with the Republic of Slovenia, Republic of Serbia and Bosnia and Herzegovina the domination of one participant is evident, Figure 3.1.5. At the border with the Republic of Hungary the domination of two participants is evident, Figure 3.1.6.

Figure 3.1.5. Total allocated capacities on monthly auctions per participant at the border with the Republic of Slovenia, Republic of Serbia and Bosnia and Herzegovina in 2009

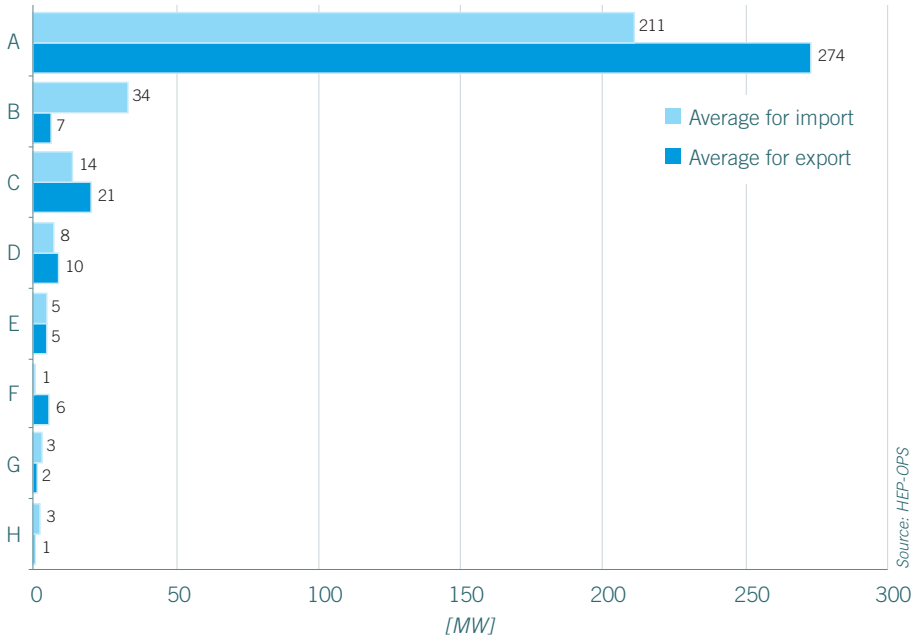
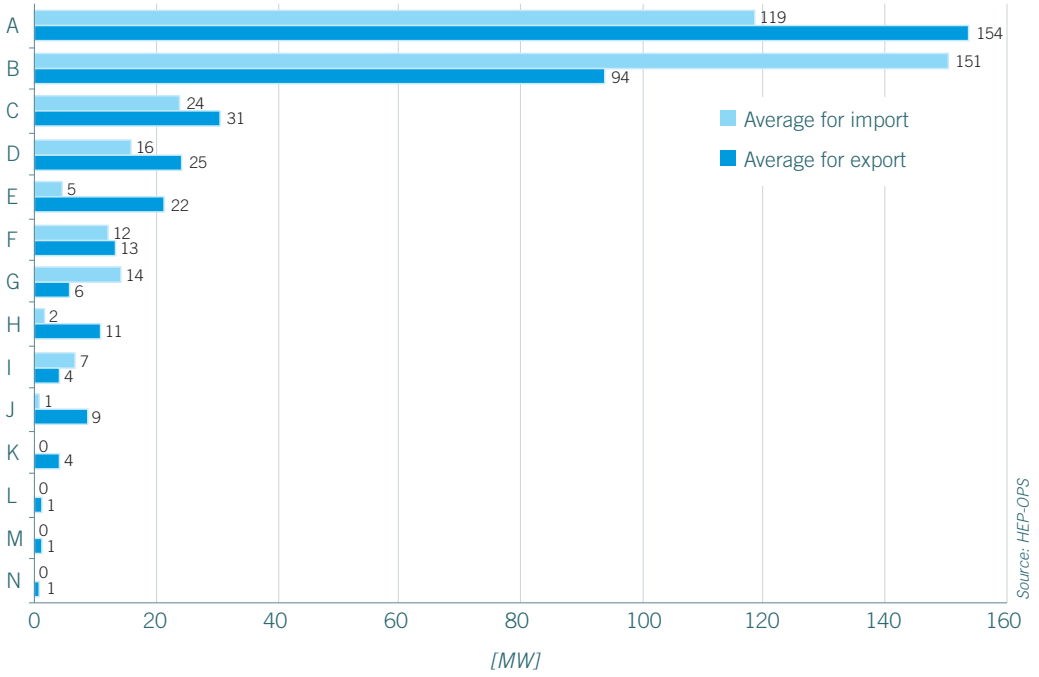


Figure 3.1.6. Total allocated capacities on monthly auctions per participant at the border with the Republic of Hungary in 2009



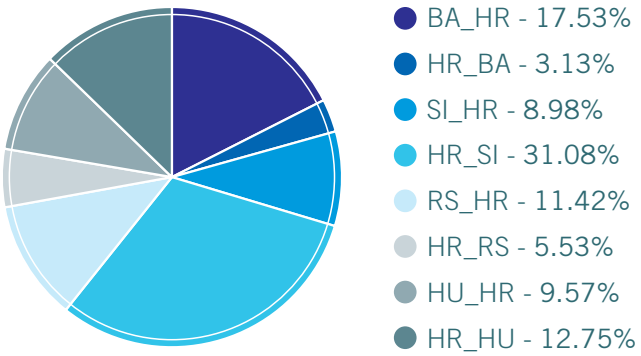
Total income of monthly auctions in 2009 amounted to HRK 35,85M. The highest income in 2009 was realized from the direction Croatia-Slovenia and amounted to HRK 11,12M. This was a consequence of the earnings of HRK 5,6M in March 2009. In March, the price of 37,328 HRK/MW was achieved on the above mentioned direction, whereas the average price for all months amounted to 7,540 HRK/MW, Figure 3.1.7. At the border with the Republic of Slovenia a 31% of total income from congestion was realized, Figure 3.1.8.

Figure 3.1.7. Average price of one MW on monthly auctions per border in 2008 and 2009

	HR_SI	BA_HR	RS_HR	SI_HR	HR_RS	HR_HU	HU_HR	HR_BA
2008	5	2465	4746	7240	5418	3642	3168	4020
2009	7540	4300	4107	2225	2096	2046	1614	1204

Source: HEP-OPS

Figure 3.1.8. Income structure of HEP-OPS from monthly auctions per direction for cross-border transmission capacities in 2009



Source: HEP-OPS

Since April 2009 HEP-OPS has introduced daily auctions of its part of ATC at the borders with the Republic of Slovenia, Republic of Serbia and Bosnia and Herzegovina. The daily auctions at the border with the Republic of Serbia have been conducted only for two days and they were terminated due to technical problems on the part of the neighbouring operator and due to signing of a new agreement between HEP-OPS and EMS. The said agreement would more thoroughly regulate the daily auction process. At the border with the Republic of Hungary daily auctions were not conducted. The total income of HEP-OPS from daily auctions amounted to HRK 74,763.

Table 3.1.7. Income of HEP-OPS from daily auctions in 2009

Month	No. of participants	Income [HRK]
April	5	64.907
May	4	4.850
June	4	510
July	4	1.165
August	2	90
September	2	180
October	2	170
November	2	46
December	6	7.151
TOTAL		74.763

Source: HEP-OPS

It is necessary to point out the past good cooperation of HEP-OPS and the Agency in the capacity allocation monitoring. Every month, HEP-OPS delivers to the Agency an Excel file with the results of the monthly auctions, reports on calculation of monthly values of net transmission capacity (NTC) and the reports on daily auctions in Excel files. The Agency developed a data base and applications by which it monitors the calculation of the NTC values as well as the allocation and use of capacities. In the following period, the scope of monitoring over the establishment of the NTC value and the use of the allocated capacities will gradually increase. Certain steps will also be taken as it regards the data delivery. In 2009, within the Energy Community, Electricity Work Group ECRB-EWG, the "Market Monitoring" project started whose aim was to train the regulatory authorities to monitor the calculation, allocation and use of the cross-border transmission capacities.

3.1.3 Transmission and distribution regulation

3.1.3.1 Tariffs for the use of transmission and distribution network

In June 2008, the Agency issued an opinion regarding the proposal for the amount of tariff items for energy activities of electricity transmission and distribution, pursuant to the Energy Act. The Decision on the Amount of Tariff Items that came into force on 1 July 2008 was adopted by the Government of the Republic of Croatia. In 2009 there were no changes in the tariff amounts. An overview of average prices for transmission and distribution per a half-year period in 2008 as well as for 2009 and per customer category is shown in Table 3.1.8. The amounts of average prices are determined according to realized income per customer category, resulting from use of certain tariff items from tariff systems and realized electricity consumption.

Table 3.1.8. Realized average price for transmission and distribution per a half-year period in 2008 and for 2009

Customer category	Average price for transmission			Average price for distribution		
	I. pol. 2008 [lp/kWh]	II. pol. 2008 [lp/kWh]	2009 [lp/kWh]	I. pol. 2008 [lp/kWh]	II. pol. 2008 [lp/kWh]	2009 [lp/kWh]
Commercial customers (high voltage customers)	5,1	5,5	6,0	-	-	-
Commercial customers (medium voltage customers)	6,9	7,0	7,0	7,2	13,1	13,4
Commercial customers (low voltage customers)	6,7	7,6	7,5	21,9	22,7	23,7
Households (low voltage customers)	5,2	7,4	7,4	23,8	20,4	20,6
Average for all customers	6,0	7,3	7,3	18,4	19,4	19,8

The method used for determination of network operator's expenses in the Tariff System for Electricity Transmission, without the Amount of Tariff Items and the Tariff System for Electricity Distribution, without the Amount of Tariff Items, which the Agency adopted in December 2006 is the method of approved expenses. The main features of the method of approved expenses are as follows:
- Approval of justified operating expenses of an energy undertaking,
- Approval of a reasonable deadline for refund of invested assets to the energy undertaking,
- Allocation of expenses to users proportionally to the amount that they incurred and
- a 1-year regulatory period.

One of the important factors and preconditions for the possibility of applying this method is the investment plan for the network development in the upcoming regulatory period.

Hence, pursuant to the Act on the Regulation of Energy Activities and upon analysis from the technical and economic-financial aspects, in May 2008 the Agency issued an approval to HEP-OPS and HEP-ODS for proposals of a Three-year plan for development and construction of transmission network for the period from 2008 to 2010 and a Three-year plan for development and construction of distribution network from 2008 to 2010.

An overview of realized investments by HEP-OPS and HEP-ODS from 2005 to 2009 are shown in Tables 3.1.9. and 3.1.10.

Table 3.1.9. An overview of realized investments by HEP-OPS from 2005 to 2009

Investment type	Realized [HRK mio.]				
	2005.	2006.	2007.	2008.	2009.
Investment preparation	10,9	8,3	11,4	16,9	14,5
Replacements and reconstruction	58,9	59,4	129,0	151,9	127,7
Revitalizations	0,0	0,0	-	0,5	0,3
Repairs and renovations	12,0	24,0	10,6	3,1	0,0
New facilities	281,4	224,4	169,3	180,6	280,6
Other assets	31,2	46,9	16,7	2,6	0,8
Total:	394,4	363,0	337,0	355,6	423,9

Source: HEP-OPS

Table 3.1.10. An overview of realized investments by HEP-ODS from 2005 to 2009

Investment type	Realized [HRK mio.]				
	2005.	2006.	2007.	2008.	2009.
Investment preparation	25,2	13,2	19,6	26,3	20,7
Replacements and reconstruction	251,2	218,0	225,3	121,2	99,4
Revitalizations	13,4	4,6	4,3	2,7	1,0
Repairs and renovations	73,4	72,4	101,8	68,6	11,4
New facilities	252,3	231,4	267,2	153,5	139,7
Other investments	212,8	163,5	157,1	118,2	83,9
Electric power conditions and connection	427,9	560,7	597,0	608,5	475,1
Development	2,2	0,0	0,0	0,0	0,0
Total:	1.258,5	1.263,8	1.372,3	1.099,0	831,3

Source: HEP-ODS

In 2009, HEP-OPS invested HRK 423.9M, whereas the level of investments of HEP ODS amounted to HRK 831.3M, where HRK 475.1M were invested in electric power conditions and connections.

An overview of significant capital facilities of HEP-OPS commissioned in 2009 is presented in Table 3.1.12.

Table 3.1.11. An overview of significant capital facilities of HEP-OPS commissioned in 2009

Name of facility
New power-transmission line 110 kV Plomin - Raša 1 (route Dubrova - Raša)
New cable 110 kV Osijek 3 - Osijek 4
New transformer substation 110/10(20) kV Osijek 4
New facility 30/110 kV in Vrataruša wind power plant (dual competence)
Annex of connection-measuring field of 220 kV in Đakovo transformer substation 220/110 kV
Annex of transformer field of 110 kV in Švarča transformer substation 110/35/10 kV
Annex of bay line of 110 kV in Botinec transformer substation 110/20 kV

Source: HEP-OPS

3.1.3.2 Quality of electricity supply

The quality of electricity supply is defined and monitored in regard to:
- Service quality,
- Reliability of power supply,
- Voltage quality.

The quality of services or commercial quality is related to the quality of services provided to the network users at the point of electricity takeover/delivery.

The voltage reliability or continuity of supply is defined as an ability of the network to provide continuous supply of electricity in a given period of time and is expressed by indicators related to the number and duration of interruptions in supply.

The voltage quality is defined as continuity of physical voltage properties in comparison to standardized values (effective value, frequency, waveform, symmetry of phase voltage values, etc.).

The reliability of supply and quality of voltage represent technical aspects of the quality of electricity supply.

In 2009, HEP-OPS met almost entirely the demands of Croatian customers for electricity, without significant disturbances in the supply system and within the set boundaries of standardized technical values of voltage and frequency. Interruptions in electricity supply and their duration as well as the estimated undelivered electricity in the HEP-OPS network in 2008 and 2009 are shown in Table 3.1.12.

Table 3.1.12. Interruptions and duration of interruption in electricity supply of HEP-OPS in 2008 and 2009

Year	Number of interruptions in electricity supply	Duration of supply interruptions [min]	Estimated undelivered electricity [MWh]
2008	131	4.844	666,3
2009	144	7.676	1840,44

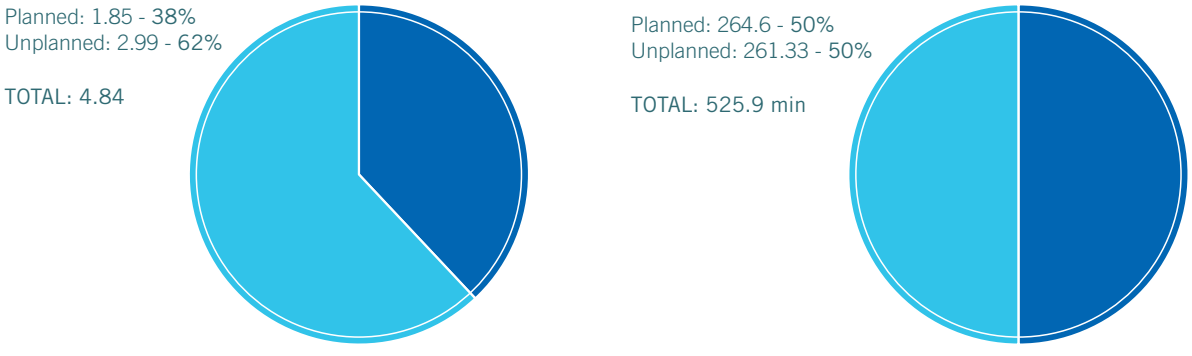
Source: HEP-OPS

At the beginning of 2006, HEP-ODS established a system for monitoring power supply interruptions in all distribution areas. According to the logbook of operational events the interruptions lasting longer than three minutes are entered manually into the system. The indicators of power supply reliability, that are systematically monitored are the indicator of the average annual number of interruptions per customer - SAIFI (System Average Interruption Frequency Index) and the indicator of the average total annual duration of interruptions per customer - SAIDI (System Average Interruption Duration Index).

The program enables the analysis of recorded interruptions and their statistical processing on the basis of which the indicators of power supply reliability were calculated. Planned interruptions are caused by elimination of consequences of malfunctions, regular maintenance, construction of facilities and network, elimination of consequences of malfunctions caused by force majeure, elimination of consequences of malfunctions caused by third parties' activities, maintenance of plants of third parties, by construction of facilities and network of third parties and interruptions in the power supply network.

The values of power supply reliability indicators in 2009 are shown in Figure 3.1.9, while the trend of power supply reliability indicators in HEP-ODS from 2006 to 2009 is shown in Figure 3.1.10.

Figure 3.1.9. 2009 power supply reliability indicators in HEP-ODS

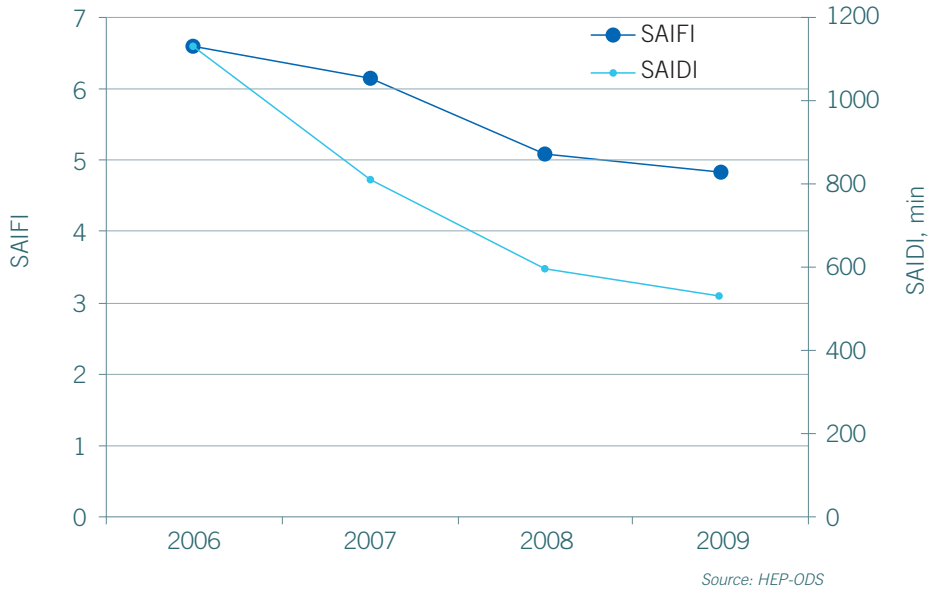


a) SAIFI

Source: HEP-ODS

b) SAIDI

Figure 3.1.10. Trend of power supply reliability indicators in HEP-ODS from 2006 to 2009

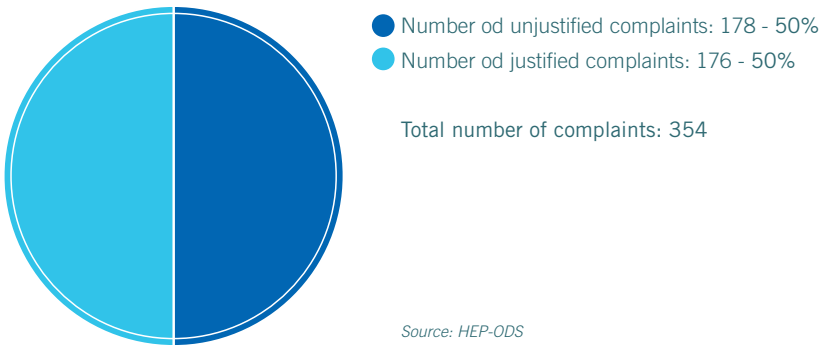


Source: HEP-ODS

Aiming to establish a systematic monitoring of voltage quality, HEP ODS carried out voltage quality control at the level of distribution areas and systematically kept record of all complaints regarding the voltage quality in 2009.

The statistics of complaints regarding the voltage quality in the HEP-ODS distributionnetwork in 2009 is shown in Figure 3.1.11. Out of a total of 2,310,811 metering points in the distribution network of HEP-ODS, a total of 354 complaints were received regarding the voltage quality, which makes a 0.02% when compared to the total number of metering points. Justified complaints amounted to 176 or 0.01% when compared to the total number of metering points.

Figure 3.1.11. Complaints regarding the voltage quality in the distribution network of HEP-ODS in 2009



Source: HEP-ODS

The regulation of the service or commercial quality takes into consideration mutual relationships between customers and energy undertaking.

The quality of service is estimated based on the level of complaints from network users regarding the provision of services and the timeliness of services performed related to connections of users to the network, network usage and electricity supply of tariff customers.

Besides the energy activity of electricity distribution, HEP-ODS also carries out the activity of supplying tariff customers with electricity as a public service under regulated conditions.

HEP-ODS classifies services of electricity distribution and supply into following categories:
- Service quality within the activities of electricity distribution,
- Quality of measuring services within the activities of electricity distribution,
- Quality of service within the activities of electricity supply,
- Other attributable services and
- Monitoring of business conducts quality.

The statistics of issued preliminary electrical energy approvals and connection approvals and the average number of issuing days of above mentioned approvals in HEP-ODS in 2009 are shown in Table 3.1.13.

Table 3.1.13. Preliminary electrical energy approvals and electrical energy approvals issued and the average number of issuing days in HEP-ODS in 2009

Type of approval	Number of approvals	Average number of issuing days
Preliminary electric energy approval	26.260	25
Electrical energy approval - new customers	43.072	-
Electrical energy approval - construction site connection	1.474	-
Electrical energy approval - temporary connection	386	-

Source: HEP-ODS

The statistics of contracting the electricity supply by HEP-ODS in 2009 is shown in Table 3.1.14

Table 3.1.14. Contracting the electricity supply by HEP-ODS in 2009

Consumption category	No. of contracts concluded	No. of complaints regarding the contracting procedure	
		Received	Adopted
Households	115.176	188	30
Commercial customers	45.086	605	57
Total	160.262	793	87
Percentage of complaints in the number of concluded contracts		0,49%	0,05% (11%)*

** adopted with regard to the number of complaints received*

Source: HEP-ODS

The statistics of calculations and issuing of invoices in HEP-ODS in 2009 are shown in Table 3.1.15.

Table 3.1.15. Calculation and issuing of invoices by HEP-ODS in 2009

Consumption category	No. of contracts concluded	Complaints regarding invoice and instalment	
		Received	Adopted
Households	29.767.199	115.060	92.799
Commercial customers	1.967.739	14.304	10.650
Total	31.734.938	129.364	103.449
Percentage of complaints in the number of invoices issued		0,41%	0,33% (80%)*

**adopted with regard to the number of complaints received*

Source: HEP-ODS

The statistics of receivables collection through a regular procedure conducted by HEP-ODS in 2009 is shown in Table 3.1.16.

Table 3.1.16. Collection of receivables through a regular procedure conducted by HEP-ODS in 2009

Consumption category	No. of invoices paid without dunning letter	No. of complaints regarding the regular collection procedure	
		Received	Adopted
Households	24.128.992	13.998	1.872
Commercial customers	1.324.787	1.038	625
Total	25.453.779	15.036	2.497
Percentage of complaints in the number of invoices paid without dunning letter		0,06%	0,01% (17%)*

** adopted with regard to the number of complaints received*

Source: HEP-ODS

The statistics of replies to questions, requests and complaints from customers submitted by HEP-ODS in 2009 is shown in Table 3.1.17.

Table 3.1.17. Replies to questions, requests and complaints from customers submitted by HEP-ODS in 2009 Consumption category

Consumption category	No. of questions, requests and complaints from customers	No. of replies within legally provided deadline
Households	711.146	699.017
Commercial customers	52.450	51.560
Total	763.596	750.577
Percentage in the total number of questions, requests and complaints from customers		98,30%

Source: HEP-ODS

The statistics of non-standardized services of calculation and issuing of invoices by HEP-ODS in 2009 are shown in Table 3.1.18.

Table 3.1.18. Non-standardized services of calculation and issuing of invoices by HEP-ODS in 2009

Consumption Category	No. of non-standardized services of calculationand issuing of invoices				No. of complaints with regard to non-standardized services of calculation and issuing invoices	
	Extraordinary calculation	Self-reading	Copy of payment slips and certified invoices	Total	Received	Adopted
Households	454.142	214.366	12.318	680.826	1.960	1.582
Commercial customers	6.432	3.272		9.704	257	124
Total	460.574	217.638	12.318	690.530	2.217	1.706
Percentage	66,70%	31,52%	1,78%	100,00%	0,32%	0,25% (77%)*

** adopted with regard to the number of complaints received*

Source: HEP-ODS

The statistics of receivables collection via dunning letter sent by HEP-ODS in 2009 is shown in Table 3.1.19.

Table 3.1.19. Receivables collection via dunning letter sent by HEP-ODS in 2009

Consumption category	No. of dunning letters sent	No. of complaints on dunning letter	
		Received	Adopted
Households	1.693.669	7.076	2.354
Commercial customers	421.944	1.106	382
Total	2.115.613	8.182	2.736
Percentage in the number of dunning letters sent		0,39%	0,13% (33%)*

** adopted with regard to the number of complaints received*

Source: HEP-ODS

The Customer Complaint Committee of HEP-ODS held 56 meetings in total and the results of their performance are shown in Table 3.1.20. Out of a total of 236 complaints resolved by the Customer Complaint Committee of HEP-ODS, 71 were adopted, while 165 were rejected.

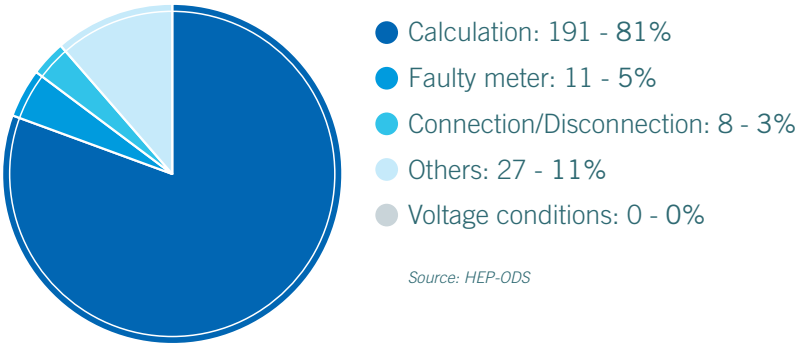
Table 3.1.20. Analysis of performance of the Customer Complaint Committee in HEP-ODS for 2009

Meetings held	Total complaints	Total adopted	Total rejected
56	236	71	165

Source: HEP-ODS

The structure of complaints is shown in Figure 3.1.12.

Figure 3.1.12. Percentage of certain types of customer complaints resolved by the Customer Complaint Committee



Source: HEP-ODS

3.1.4 Unbundling of activities

Legal unbundling of particular energy activities has been carried out within the HEP Group, except in the part referring to the performance of HEP ODS' activities. The Electricity Market Act enables HEP-ODS to carry out activities of electricity distribution and electricity supply as regards the customers in the public service system, i.e. households.

Independence, transparency and impartiality in the performance of HEP-OPS and HEP-ODS, the regulated energy undertakings are ensured also by monitoring of their business activities provided by the Agency. HEP-OPS and HEP-ODS are obliged to obtain the approval from the Agency for respective activities and to submit reports on their activities to the Agency.

The Electricity Market Act lays down that the transmission system operator and the distribution system operator shall prepare a program regulating conditions, rules, organization and methodology in order to provide the principles of transparency, objectivity and impartiality with an objective of controlling the conditions from the Electricity Market Act.

The transmission system operator and the distribution system operator shall submit an annual report on the implementation of their programs to the Agency and publish it at their website.

Pursuant to aforementioned legal obligations, HEP-OPS issued a Program for Provision and Implementation of Transparency, Objectivity and Impartiality Principles of HEP-OPS' operations and established a Committee for Follow-up and Monitoring of the Program. The Committee adopted the Report on Program for Provision and Implementation of Transparency, Objectivity and Impartiality Principles of HEP-OPS for the period from July 2008 to December 2009. The Report was submitted to the Agency and published at HEP-OPS's website (*http://www.hep.hr/ops*). The aforementioned report indicates actual measures taken in order to ensure the principles of transparency, objectivity and impartiality as well as the measures and activities to be taken according to the Program but have still not been taken or their results have not been of the satisfactory level.

In line with its legal obligations, HEP-ODS has also adopted the Program for Provision and Implementation of Transparency, Objectivity and Impartiality Principles of HEP-ODS's operations and established a Commission for Follow-up and Monitoring of the Program for Provision and Implementation of Transparency, Objectivity and Impartiality Principles of HEP-ODS's operations starting from 1 January 2008.

The Committee issued the Annual Report on Program Implementation in 2009 and published it at the HEP ODS's website (*http://www.hep.hr/ods*). The conclusions of this Annual Report are that the implementation of the Program principles are at the satisfactory level, but in order to enhance the business operation it has been proposed to undertake additional measures regarding professional secrecy and data security as well as to improve the HEP-ODS's website.

HEP-ODS publishes at its website (*http://www.hep.hr/ods*) notifications related to tariff models, electricity prices, instructions on consumption calculation, works planned, advices about the economic electricity consumption, etc. All legal and subordinate legislation and internal regulations of HEP d.d. and HEP-ODS related to the electricity customers as well as annual reports of HEP-ODS with all the data and performance indicators for the previous year may be found at the respective website.

3.2 Electricity market development

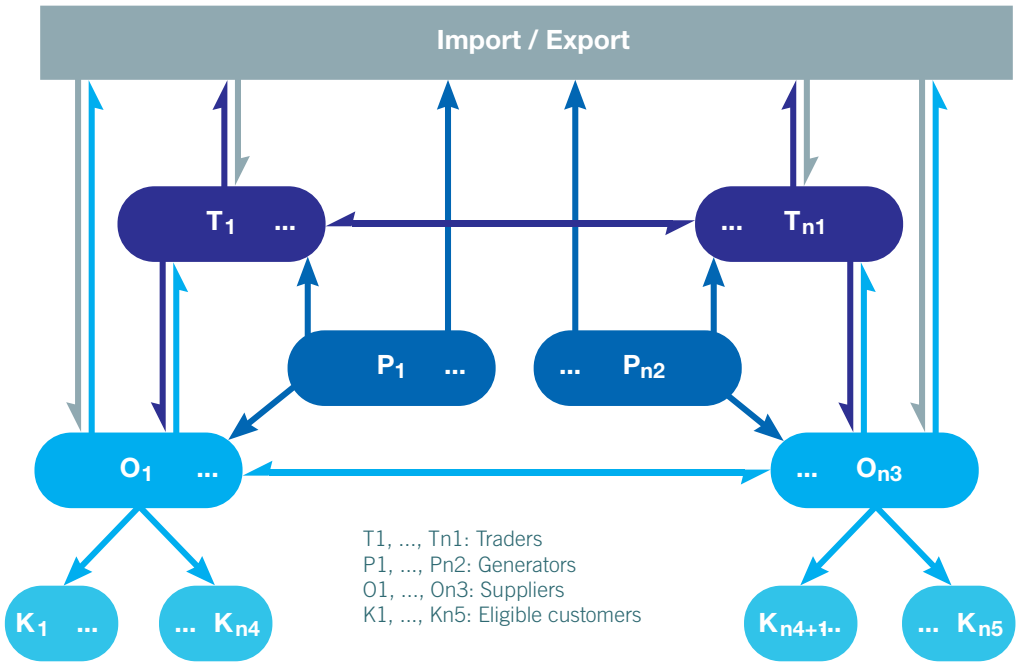
3.2.1 Electricity trading

Electricity market in the Republic of Croatia is regulated by the Electricity Market Act and the following subordinate legislation:

- Electricity Market Rules (Official Gazette "Narodne novine", No. 135/06) regulating relationships between the participants on the electricity market,
- Methodology on Providing Balancing Energy Services in the Electric Power System (Official Gazette "Narodne novine", No. 133/06, 90/08 and 70/09) which aims to enable contracting electric power balancing services between transmission system operator and balancing service provider, establishing the framework for determination of a reference price and of an energy balancing price for undertakings responsible for deviation,
- Rules on Balancing the Electric Power System (Official Gazette "Narodne novine", No. 133/06) which regulate activities of undertakings responsible for deviations, providers of electric power system balancing service, their relationships with transmission system operator, market operator and the method for calculation of balancing energy,
- Ordinance on Allocation and Use of Cross-Border Transmission Capacities (*http://ops.hep.hr*),
- Rules on the Common Annual Auction and Common Monthly Auctions for Allocation of Cross-Border Capacities in 2010 between Regulation Fields of HEP-OPS and MAVIR (*http://ops.hep.hr*) and
- Rules on Common Daily Auctions for Allocation of Cross-Border Transmission Capacities between Regulation Fields of HEP-OPS and MAVIR (*http://ops.hep.hr*).

Croatian model of electricity market is shown in Figure 3.2.1

Figure 3.2.1. Electricity market model in the Republic of Croatia



In the Croatian electricity market model, the electricity generator may sell electricity generated in its own facilities to a trader or a supplier. A supplier may purchase electricity from a generator, trader or other supplier and may sell electricity to eligible customers pursuant to contractual relationships or to tariff customers in a regulated manner or to a trader or other supplier.

A trader may purchase electricity from a generator, supplier or other trader and he may sell electricity to a supplier or other trader. An eligible customer is free to choose its supplier with whom he concludes a contract on electricity supply.

A generator, supplier or trader that wants to participate in procedures and activities on the electricity market shall conclude an agreement with the Croatian Energy Market Operator (HROTE) regulating the rights and obligations between the market participant and the Croatian Energy Market Operator (HROTE).

The main aspects of the electric power system balance sheet of the Republic of Croatia for 2009, but also for the previous three years are shown in Table 3.2.1. The data on the total generation of electricity in power plants on the territory of the Republic of Croatia (also including the electricity taken over from industrial power plants and wind power plants and the generation taken over directly into the distribution network), generation from NPP Krško, the nuclear power plant (HEP d.d. part), import and export of electricity and total consumption (with losses) in the Republic of Croatia are shown in Table 3.2.1.

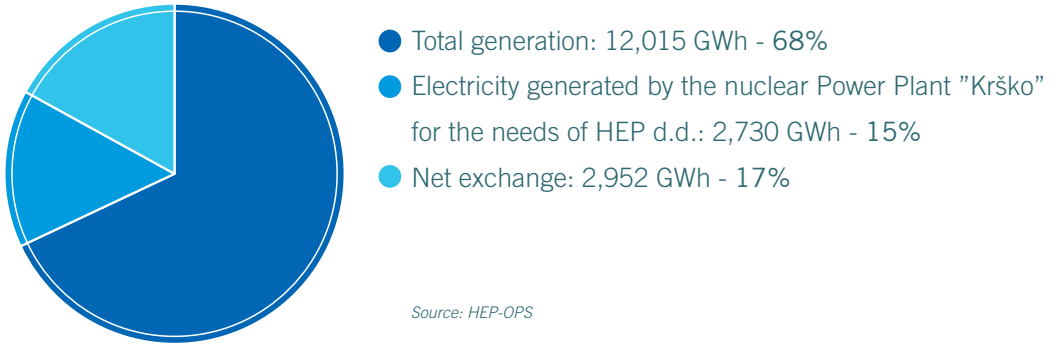
Table 3.2.1. Balance sheet of the Croatian electric power system in 2009 [GWh]

Ref.No.	Balance sheet of the electric power system	2006	2007	2008	2009
1.	Total generation[2]	11.566,2	11.268,6	11.418,8	12.014,8
2.	Generation of NPP Krško for HEP d.d.	2.644,5	2.713,9	2.985,8	2.729,6
3.	Other input into Croatia	10.570,9	9.172,3	9.258,5	9.110,3
4.	Input into Croatia (2+3)	13.215,4	11.886,2	12.244,3	11.839,9
5.	Total procurement (1+4)	24.781,6	23.154,8	23.663,1	23.854,7
6.	Output from Croatia	7.593,2	5.525,1	5.667,3	6.158,0
7.	Total consumption (5-6)	17.188,4	17.629,7	17.995,8	17.696,7
8.	Indirect procurement in the distribution network	443,3	374,8	394,9	408,4
9.	Losses in transmission network	544,0	547,1	483,8	511,0
10.	Consumption of transmission (7-8-9)	16.201,1	16.707,8	17.117,1	16.777,3
11.	Direct customers	947,4	919,7	978,6	814,0
12.	Pumping work (Velebit Pump Storage Power Plant) and other own consumption	221,0	272,0	192,9	163,3
13.	Delivered to distribution (10-11-12)	15.032,7	15.516,1	15.945,6	15.800,0
14.	Transmission (min(4,6))	7.593,2	5.525,1	5.667,3	6.158,0
15.	Losses in transmission [%] (100x9/(10+9+14))	2,2%	2,4%	2,1%	2,2%

[2] *Energy taken over from industrial power plants and wind power plants as well as the generation taken over directly into the distribution network is included.* *Source: HEP-OPS*

The structure of electricity procurement for the needs of the Croatian electric power system is shown in Figure 3.2.2. The major part of the total consumption in 2009 (17,697 GWh, Table 3.2.1.) was covered by national generation, which amounted to 12,015 GWh. The electricity generated in the NPP Krško for the needs of HEP d.d. amounted to 2,730 GWh, whereas the net exchange ("Other input into Croatia" - "Output from Croatia") amounted to 2,952 GWh.

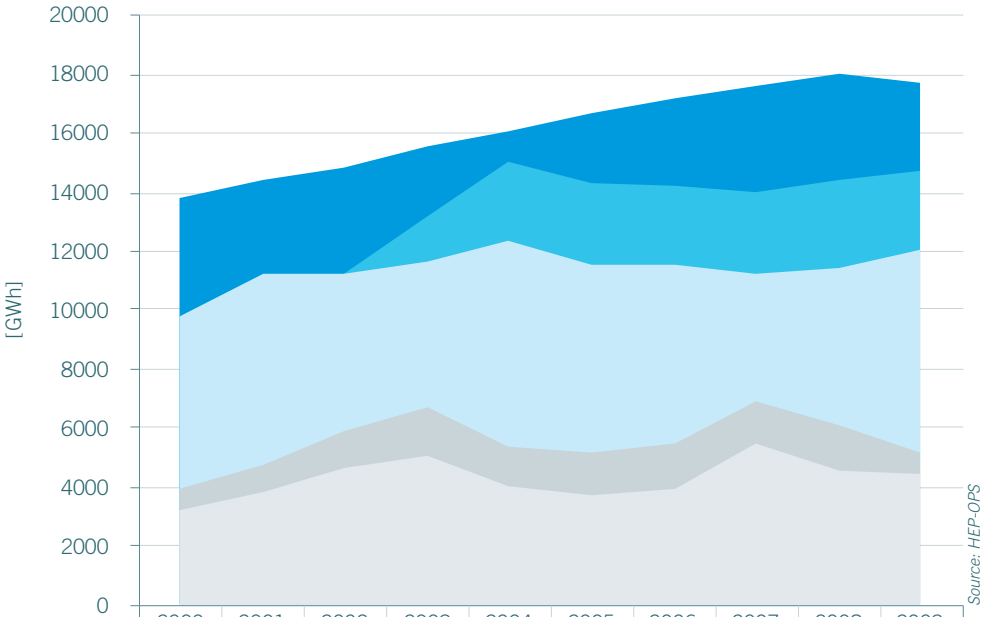
Figure 3.2.2. Structure of electricity procurement for the needs of the Croatian electric power system in 2009



Source: HEP-OPS

The structure of the electricity procurement for the needs of the Croatian energy power system from 2000 to 2009 is shown in Figure 3.2.3. It is evident that the gross electricity consumption has increased by 27.9% in the last ten years. In addition, a slight decrease in gross electricity consumption in 2009 is also evident when compared to 2008.

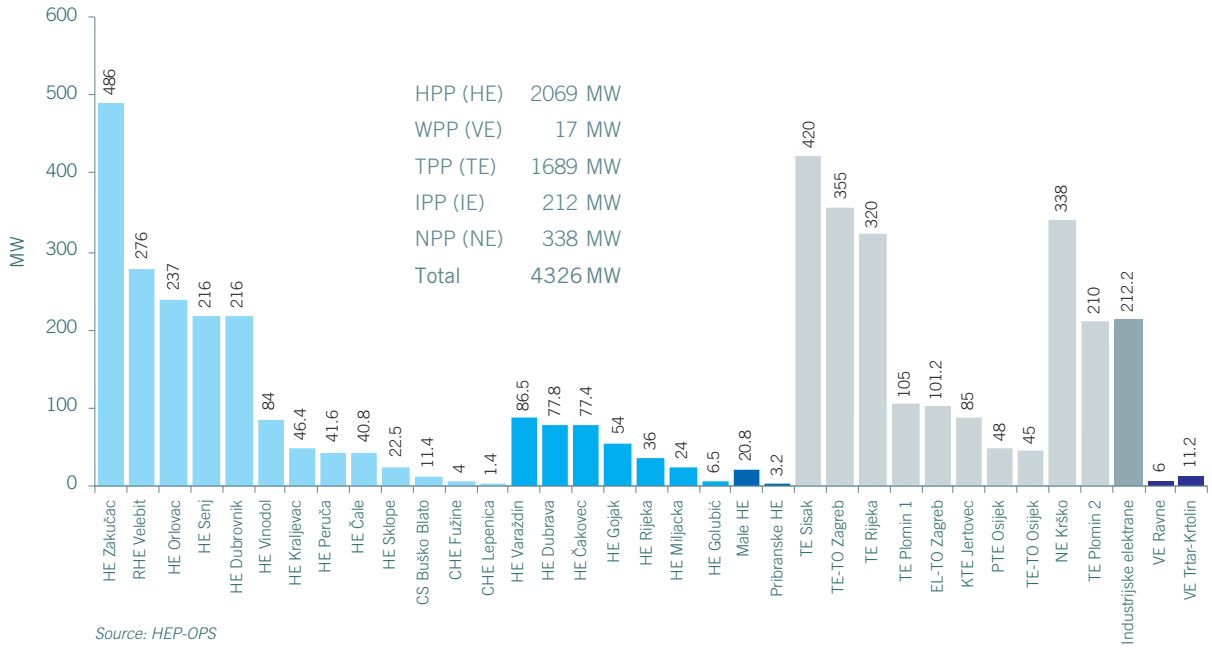
Figure 3.2.3. Structure of electricity procurement for the needs of the Croatian energy power system from 2000 to 2009



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Import	4037	3192	3561	2304	1100	2362	2978	3647	3591	2952
NE Krško	0	0	0	1623	2606	2807	2645	2714	2986	2730
HE+VE	5841	6550	5372	4896	7001	6388	6089	4392	5317	6806
TE Plomin	777	899	1284	1616	1320	1458	1576	1401	1514	797
TE+IE	3181	3814	4615	5087	4069	3692	3902	5475	4587	4411

Capacities for electricity generation for the needs of the consumers in the Republic of Croatia include hydro power plants, thermal power plants (fuel oil, natural gas and coal), industrial power plants, small hydro power plants, wind power plants, solar power plants and other power plants. Available powers of generation facilities are shown in Figure 3.2.4. The NPP Krško, whose 50% of generation capacities are at the disposal of HEP d.d., is located on the territory of the Republic of Slovenia.

Figure 3.2.4. Available powers of generation facilities in 2009



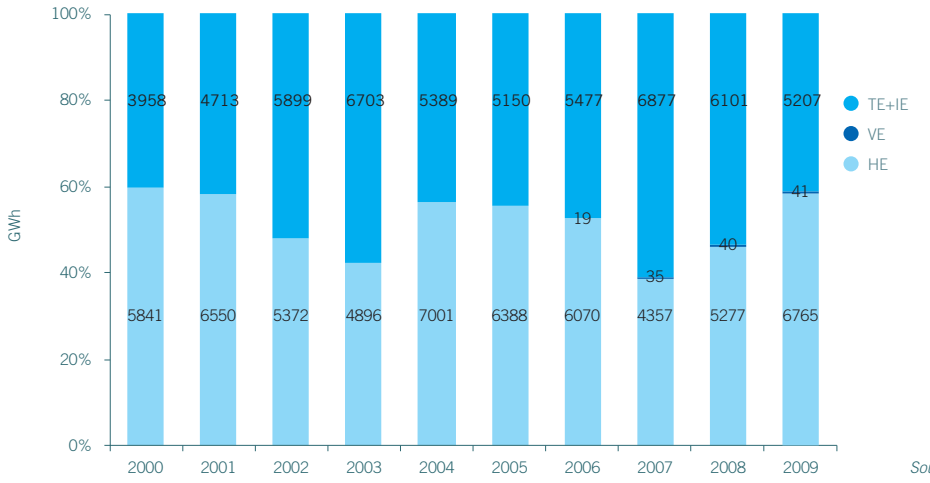
The power plants of HEP Proizvodnja d.o.o. are shown in Figure 3.2.5.

Figure 3.2.5. Geographical distribution of power plants of HEP Proizvodnja d.o.o. in 2009

In 2009, the electricity generation from power plants on the territory of the Republic of Croatia consisted of generation from hydro power plants (56.3%), thermal power plants and industrial power plants (43.4%) as well as from wind power plants (0.3%).

The structure of electricity generation from power plants on the territory of the Republic of Croatia is shown in Figure 3.2.6.

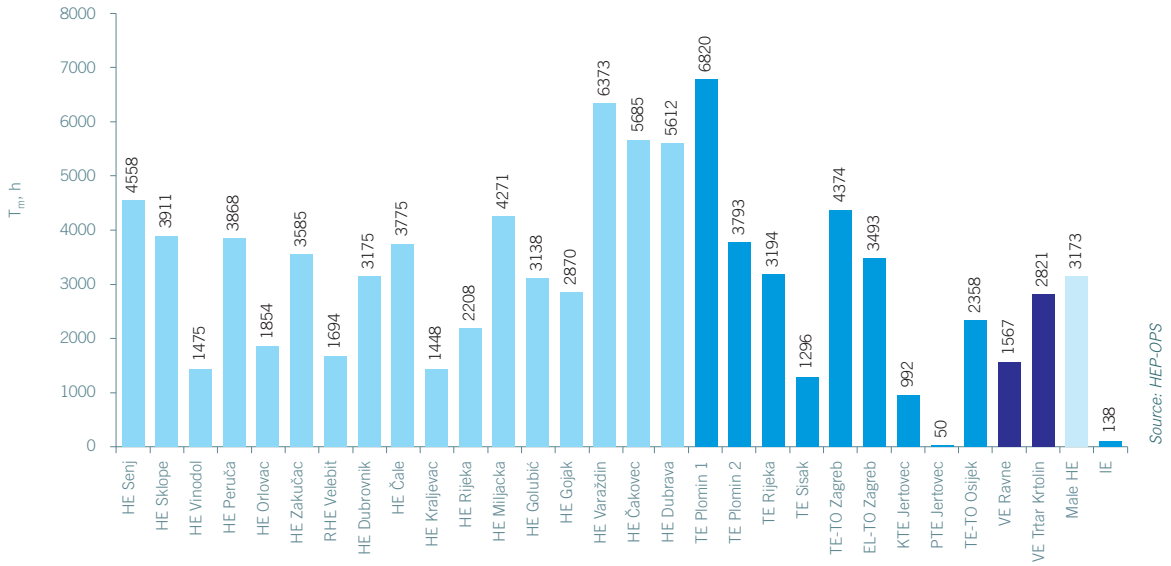
Figure 3.2.6. Electricity generation from power plants on the territory of the Republic of Croatia from 2000 to 2009



Source HEP-OPS

The duration of peak load in power plants on the territory of the Republic of Croatia in 2009 is shown in Figure 3.2.7.

Figure 3.2.7. Duration of peak load in power plants on the territory of the Republic of Croatia in 2009



The longest duration of peak load occurred in TPP Plomin 1 (6,820 h). The duration of peak load in the TPP Plomin 2 amounted to only 3,793 h due to the serious generator breakdown, while it amounted to 7,209 h in 2008. Out of hydro power plants, the longest duration of a peak load occurred in the HPP Varaždin (6,373 h), the HPP Čakovec (5,685 h) and the HPP Dubrava (5,612 h). The wind power plant Trtar Krtolin had twice as long duration of peak load (2,821 h) as the WPP Ravne (1,567 h). Industrial power plants barely delivered any electricity into the system. Their duration of a peak load amounted to 138 hours.

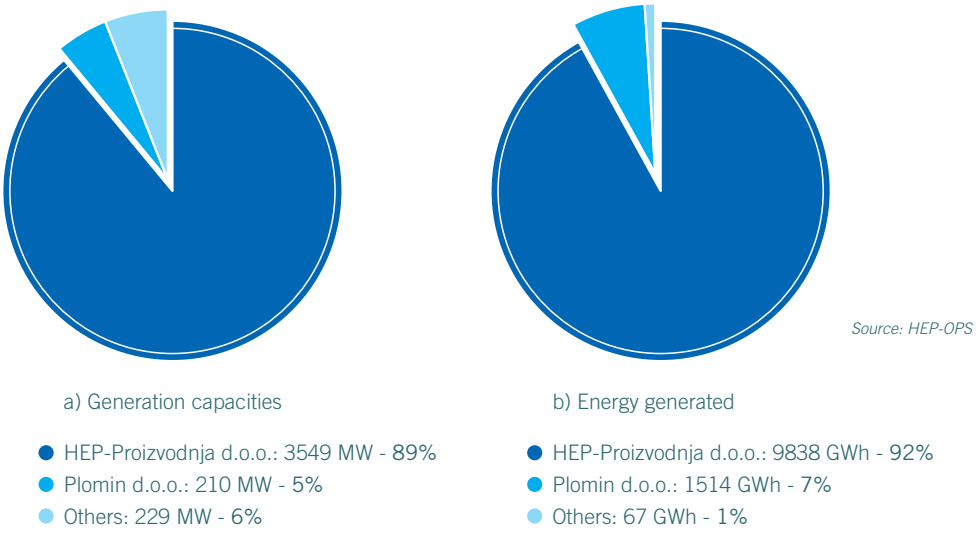
The list of energy undertakings with a licence granted for the electricity generation is shown in Table 3.2.2.

Table 3.2.2. List of energy undertakings with a licence granted for electricity generation as at 31 December 2009

Ref.No.	Name of energy undertaking	Licence issue date	Licence validity [year]
1.	HEP PROIZVODNJA d.o.o.	10. 12. 2003.	15
2.	TE PLOMIN d.o.o.	11. 12. 2003.	15
3.	INA-INDUSTRIJA NAFTE d.d.	13. 12. 2003.	15
4.	ADRIA WIND POWER d.o.o.	28. 03. 2007.	5
5.	VALALTA d.o.o.	26. 06. 2007.	5
6.	EKO d.o.o.	05. 12. 2007.	5
7.	VJETROELEKTRANA TRTAR - KRTOLIN d.o.o.	07. 01. 2009.	5
8.	HIDRO-WATT d.o.o.	10. 01. 2009.	5
9.	TUDIĆ ELEKTRO CENTAR d.o.o.	10. 07. 2009.	5
10.	SLADORANA d.d.	28.09.2009.	5
11.	ZAGREBAČKE OTPADNE VODE - upravljanje i pogon d.o.o.	26.11.2009.	5
12.	VJETROELEKTRANA ORLICE d.o.o	15.12.2009.	5

Proportion of the generation capacities and electricity generation of the power plants on the territory of the Republic of Croatia per energy undertaking in 2009 is shown in Table 3.2.8. HEP-Proizvodnja d.o.o. had by far the largest proportion of the generation capacities amounting to 89% and of the generated energy amounting to 92%. The TPP Plomin d.o.o. participated in generation capacities with 5% and in the generated energy with 7%.

Figure 3.2.8. Proportion of generation capacities and electricity generation from the power plants on the territory of the Republic of Croatia per energy undertaking in 2009



Source: HEP-OPS

Herfindahl-Hirschman index (HHI) of concentration of generation capacities on the territory of the Republic of Croatia amounts to 0.80, whereas the HHI of the concentration of electricity generation from power plants on the territory of the Republic of Croatia amounts to 0.87.

An energy undertaking may emerge in the Croatian market upon obtaining an EIC (Energy Identification Coding scheme) code, upon conclusion of a contract on balancing energy with HEP-OPS and, finally, upon signing an agreement with the Croatian Energy Market Operator (HROTE) regulating mutual relationships on the electricity market. Only the energy undertakings which met all conditions for emerging in the electricity market are shown in Table 3.2.2. although until now the Agency has issued 13 licences for electricity generation, five licences for electricity supply, three licences for electricity trading and a total of 28 licences for trading, intermediation and representation on the energy market, out of which 22 could relate to the electricity. Consequently, out of 43 energy undertakings to which the licence was granted, only 19 emerge in the market. An interesting fact is that the same 19 energy undertakings were present also on 31 December 2008. Moreover, it is evident that none of the energy undertakings which are registered for the electricity generation fulfilled the conditions for emerging in the market. For example, HEP-Proizvodnja d.o.o. does not submit agreed schedules supporting the market operator in preparation of a market plan to the Croatian Energy Market Operator (HROTE). Therefore, Table 3.2.4. which shows the direction of electricity sold on the Croatian market does not include the electricity generators.

Table 3.2.3. List of energy undertakings which fulfilled conditions for emerging in the electricity market as at 31 December 2009

Ref.No.	Name of market participant	EIC	Licence type
1.	Atel Hrvatska d.o.o.	31X-ATEL-HR----F	Trading, intermediation and representation on electricity market
2.	EFT HRVATSKA d.o.o.	31X-EFT-HR-----C	Trading, intermediation and representation on electricity market
3.	EZPADA d.o.o.	31XEZPADA-HR---4	Trading, intermediation and representation on electricity market
4.	GEN-I Zagreb d.o.o.	31X-ISTRABENZ--C	Trading, intermediation and representation on electricity market
5.	HEP d.d.	31X-HEP-DD-----9	Trading, intermediation and representation on electricity market
6.	HEP ODS	31X-HEP-ODS----6	Electricity supply
7.	HEP-Opskrba d.o.o.	31XHEP-OPSKRBA-S	Electricity supply
8.	HEP-Trgovina d.o.o.	31XHEP-TRADE---M	Trading, intermediation and representation on electricity market
9.	HSE Adria d.o.o.	31X-HSE-ADR-HR-Z	Trading, intermediation and representation on electricity market
10.	INTERENERGO d.o.o.	31X-INTEREN-HR-7	Trading, intermediation and representation on electricity market
11.	KORLEA d.o.o.	31XKORLEA------H	Trading, intermediation and representation on electricity market
12.	KORLEA d.o.o.	31XKORLEA------H	Electricity supply
13.	Lumius d.o.o.	31X-LUMIUS-HR--F	Trading, intermediation and representation on electricity market Trading, intermediation and representation on electricity market (from 17/12/2009)
14.	MEGAPLAN d.o.o.	31X-MEGAPLAN---9	Trading, intermediation and representation on electricity market
15.	MONTMONTAŽA d.d.	31XMONTMONTAZA-5	Trading, intermediation and representation on electricity market
16.	RE Energija d.o.o.	31X-RE-ENERGIJAY	Trading, intermediation and representation on electricity market
17.	RUDNAP energija d.o.o.	31X-RUDNAP-HR--L	Trading, intermediation and representation on electricity market
18.	TLM d.d.	31X-TLM-HR-----L	Trading, intermediation and representation on electricity market
19.	VERBUND-Austrian Power Trading d.o.o.	31X-APT-HR-----O	Trading, intermediation and representation on electricity market

Source: Croatian Energy Market Operator (HROTE)

The Croatian electricity market is based on bilateral trading. The total amounts of electricity sold on the Croatian electricity market per amount from agreed schedules of market participants are shown in Table 3.2.5 and Table 3.2.6. Since agreed schedules have to be balanced, the amounts shown also represent the total electricity purchase on the Croatian electricity market. It should be mentioned that the total amount of electricity sold to HEP-ODS according to the submitted market schedules is equivalent to 0 MWh, while the total amount of electricity sold to HEP-Opskrba d.o.o. amounts to 15,322,349 MWh. The same data, i.e. the total amounts of electricity sold by electricity suppliers in 2009 according to amounts from agreed schedules are shown in Table 3.2.6. Since HEP-ODS is a holder of an obligation of public service regarding electricity supply of tariff customers on a regulated manner and at regulated price, it is obvious that in reality HEP-Opskrba d.o.o. could not be able to sell the total energy required for the Croatian consumption.

Table 3.2.4. The direction of electricity sold on the Croatian market in 2009 as per agreed schedules of market participants

Direction of sales	Energy [MWh]
Traders → Suppliers	15.322.349
Traders → HEP-OPS d.o.o. (for covering losses)	567.101
Traders → HEP ODS d.o.o (for covering losses)	1.705.882
Suppliers → Customers	15.322.349

Source: Croatian Energy Market Operator (HROTE)

Table 3.2.5. Total amounts of electricity sold by market participants in 2009 per agreed schedules of market participants

Market participant	Energy [MWh]
ATEL HRVATSKA d.o.o.	254.714
EFT HRVATSKA d.o.o.	1.144.200
EZPADA d.o.o.	213.818
GEN-I Zagreb d.o.o.	569.526
HEP d.d.	878.600
HEP-OPERATOR DISTRIBUCIJSKOG SUSTAVA d.o.o.	0
HEP-OPSKRBA d.o.o.	15.322.649
HEP-TRGOVINA d.o.o.	18.463.840
HSE ADRIA d.o.o.	303.738
INTERENERGO d.o.o.	29.576
KORLEA d.o.o.	254.079
LUMIUS d.o.o.	0
MEGAPLAN d.o.o.	0
MONTMONTAŽA d.d.	0
RE ENERGIJA d.o.o.	96.039
RUDNAP ENERGIJA d.o.o.	484.445
TLM d.d.	876.000
VERBUND - AUSTRIAN POWER TRADING d.o.o.	810
Total	38.892.034

Source: Croatian Energy Market Operator (HROTE)

Table 3.2.6. Total amounts of electricity sold by electricity suppliers in 2009 per amount from agreed schedules

Market participant	Energy [MWh]
HEP-OPERATOR DISTRIBUCIJSKOG SUSTAVA d.o.o.	0
HEP-OPSKRBA d.o.o.	15.322.349
KORLEA d.o.o.	0
Total	15.322.349

Source: Croatian Energy Market Operator (HROTE)

3.2.2 Balancing the electric power system

Stabile functioning of the electric power system requires continuous balance between consumption and electricity generation. For many reasons, imbalances in the functioning of the electric power system need to be resolved as soon as possible. Imbalance may be caused by errors in estimated consumption and generation or due to failures and breakdowns of certain parts of the electric power system. For these reasons, the transmission system operator is in charge of balancing the system. HEP-OPS is in charge of balancing the system in the Republic of Croatia and accordingly of adopting the Rules on Balancing the Electric Power System with the prior approval of the Agency.

The Croatian market model encompasses a mechanism of penalising deviations between the realization (realized delivery, i.e. realized electricity takeover) and plans, i.e. the amount in the agreed schedule of undertakings responsible for deviation. Thus, the undertakings are stimulated to submit real agreed schedules which improve the system balancing.

Undertakings responsible for the deviation, i.e. generators, suppliers and traders, shall conclude contracts on balancing energy with HEP-OPS which shall contain a financial guarantee for defrayment of expenses of balancing energy.

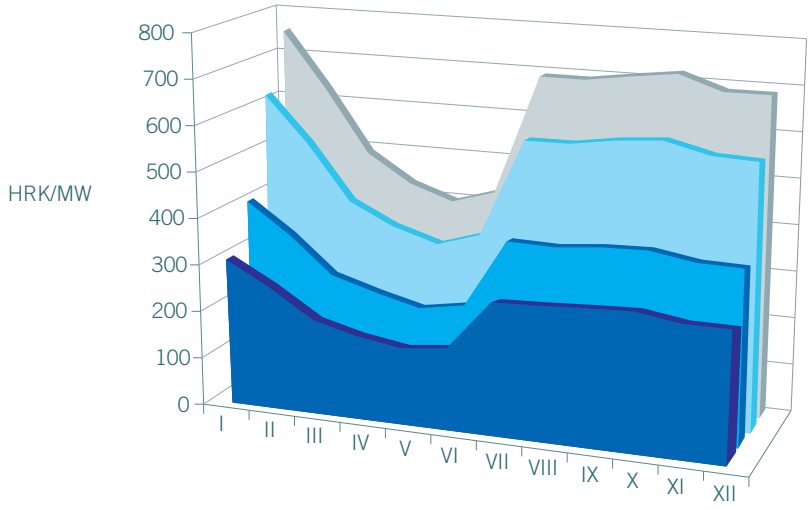
According to the Rules on Activities of the Electricity Market, the agreed schedules are prepared which represent a basis for the balancing energy calculation. The Croatian Energy Market Operator (HROTE) prepares a market plan for delivery before 1.00 p.m. of the trading day based on the delivered agreed schedules from generators, suppliers and traders. If there is a need for correction, the Croatian Energy Market Operator (HROTE) requests from the market participants to correct the agreed schedules. The market participant is obliged to submit the corrected agreed schedule before 1:30 p.m. of the trading day. HEP-OPS prepares a system operation plan for the delivery day before 2:45 p.m. HEP-OPS harmonizes the exchange program of the Croatian electric power system with neighbouring transmission system operators before 3:45 p.m. A market participant may request from HEP-OPS to change its agreed schedule three times during the delivery day and two hours before the period to which the change refers at the latest. The periods are from 00:00 to 08:00 a.m., from 08:00 a.m. to 4:00 p.m., from 4:00 p.m. to 24:00. HEP-OPS reports to the Croatian Energy Market Operator (HROTE) on all changes of the agreed schedule approved during the delivery day before 12:00 o'clock of the next business day. According to the delivered changes, the Croatian Energy Market Operator (HROTE) prepares an agreed schedule for the market participant based on which balancing energy is calculated.

Deviation prices are determined according to the Methodology of Providing Energy Balancing Services in the Electric Power System (hereinafter referred to as: Methodology) issued by the Agency.

Positive deviations (lack of energy) in the observed billing period of balancing (one hour) are charged per unit price Cp. For negative deviations (surplus of energy), entities responsible for deviation do not receive any compensation. Price Cp is established based on the reference price Cr, which is the mean value of the base load price on the European Energy Exchange in Leipzig (EEX).

Since the manner of reference price definition caused large monthly oscillations, the Methodology was amended in June 2009. A new element introduced into the Methodology was establishment of reference price based on harmonization of the average monthly price of the base load on EEX and the domestic price of electricity generation defined by the amount of tariff item for electricity generation, for household operating energy with single tariff energy measurement. The weighting factor for the average monthly price of the base load on EEX amounts to 0.3, while the weighting factor for the domestic price amounts to 0.7. These are the factors which reflect the average relations of the imported electricity in comparison to the domestic generation.. HEP-OPS publishes balancing energy unit prices at its website (*http://www.hep.hr/ops*). Table 3.2.9. shows prices Cr and Cp for 2009 as per month.

Figure 3.2.9. Balancing electricity prices for 2009 rounded up to a whole number



	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Cp (0-6h)	316	265	208	184	170	182	290	290	296	300	287	287
Cr	421	354	277	245	227	242	386	387	395	400	383	382
Cp (6-17 i 23-24h)	632	531	416	368	340	363	579	581	592	601	574	573
Cp (17-23h)	758	637	499	442	408	436	695	697	710	721	689	688

Realization of the agreed schedule of the supplier whose customers do not have meters for energy data storage during the time period is established with the help of load profile diagram. Before its introduction, a unique load profile diagram is used, as published at the HEP-OPS website (*http://www.hep.hr/ops*). Pursuant to the Rules on Activities of the Electricity Market, the Croatian Energy Market Operator (HROTE) calculates the balancing energy according to the agreed schedules and the calculation measurement data delivered by HEP-OPS and HEP-ODS, while HEP-OPS issues invoice for the balancing energy.

HROTE still prepares a trial balancing energy calculation. The main reason why the real calculation is not possible is the fact that HEP- Trgovina d.o.o. does not deliver separate agreed schedules for HEP Đ ODS d.o.o. and HEP Đ Opskrba d.o.o. Another reason is that HEP - Proizvodnja d.o.o. has still not signed any agreement on mutual regulation of relationship with HROTE so it is not officially present on the Croatian electricity market. It should also be pointed out that the transitory provisions of the Methodology and the Rules on Balancing the Electric Power System applicable until December 31, 2008 ceased to be valid. The said provisions prescribed that the balancing energy service is provided by HEP-Proizvodnja d.o.o. and that HEP-Proizvodnja d.o.o. and HEP-ODS d.o.o. are not considered the entities responsible for deviation.

3.2.3 Electricity supply

3.2.3.1 Main features of electricity consumption

The data on the number of metering points, sales, average sales per metering point and proportion of a certain consumption category in the total sales of electricity are shown in Table 3.2.7.

Percentage structure of electricity sales is shown in Figure 3.2.10.

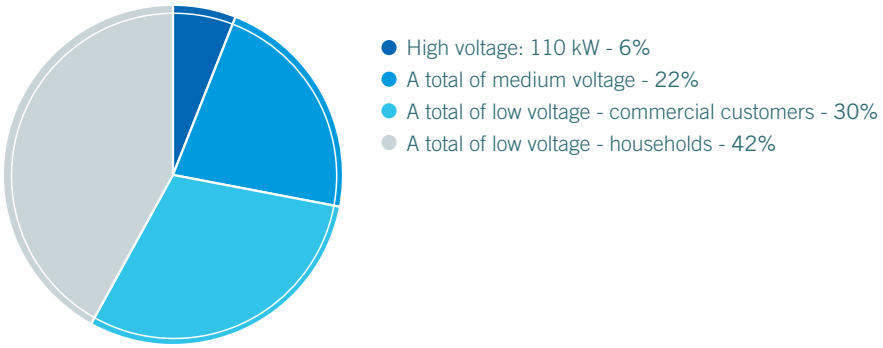
Table 3.2.7. Number of metering points and sales, average sales and the participation of electricity sales as per consumption category in 2009

Consumption category	No. of metering points	Sales [MWh]	Sales per metering point [kWh]	Proportion in the total sales [%]	Sales '09/'08 [%]
Commercial customers - high voltage	29	993.535	34.259.828	6	1,5
Commercial customers - medium voltage (35 kV)	79	608.543	7.703.063	4	-
Commercial customers - medium voltage (10(20) kV)	1.983	2.753.603	1,390.708	18	-
Total medium voltage	2.062	3.362.146	1.632.902	22	-3,7
Total high and medium voltage	2.091	4.355.681	-	28	-2,6
Commercial customers - low voltage (blue)	59.080	314.013	5.315	2	-5,2
Commercial customers - low voltage (white)	124.857	1.371.360	10.983	9	-3,4
Commercial customers - low voltage (red)	15.574	2.554.865	164.043	16	1,0
Commercial customers - low voltage (orange)	-	116	-	0	-
Commercial customers - low voltage streetlights(yellow)	20.735	446.330	21.525	3	0,5
Total low voltage - Commercial	220.247	4.686.683	21.279	30	-0,8
Households - low voltage (blue)	784.147	1.742.413	2.222	11	-4,2
Households - low voltage (white)	1.273.677	4.720.042	3.706	30	-3,3
Households - low voltage (orange)	-	49	-	-	-
Households - low voltage (black)	3.143	9.267	2.949	-	-16,9
Total low voltage - households	2.060.966	6.471.771	3.140	42	-3,6
Total low voltage	2.281.213	11.158.454	4.891	72	-2,4
In total	2.283.304	15.514.135	-	100	-2,5

High voltage sales covers customers on the network of HEP- OPS and HEP- ODS

Source: HEP- ODS, HEP- OPS

Figure 3.2.10. Proportion of the certain consumption category in the total electricity sales



Electricity procurement and sales for HEP-ODS and corresponding distribution losses for the 2000-2009 period are shown in Table 3.2.8.

Table 3.2.8. Electricity procurement, sales and distribution losses for the 2000-2009 period

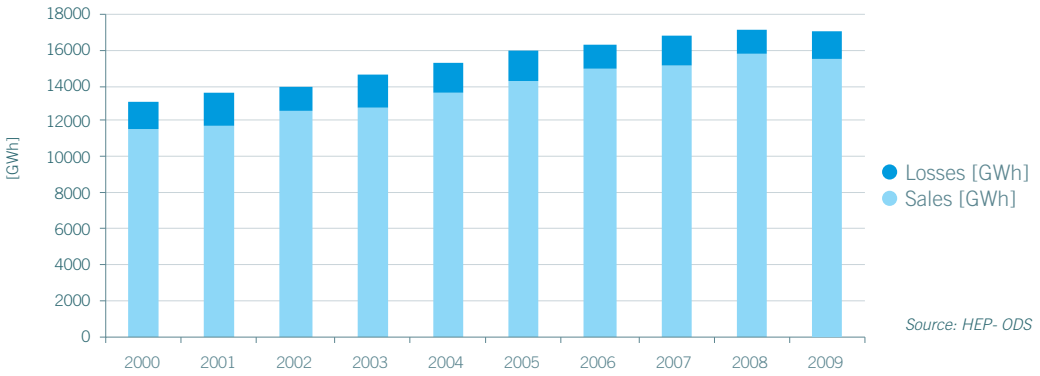
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Procurement [GWh]	13.135	13.734	14.022	14.737	15.329	15.942	16.423	16.811	17.130	17.021
Sales [GWh]	11.712	11.901	12.615	12.854	13.692	14.372	15.059	15.158	15.907	15.514
Losses [GWh]	1.423	1.833	1.407	1.883	1.637	1.571	1.365	1.653	1.223	1.508
Losses [%]	10,8	13,3	10,0	12,8	10,7	9,9	8,3	9,8	7,2	9,3

Source: HEP ODS

Average annual increase in electricity purchase in the 2000-2009 period amounted to 2.92%, while the average increase in electricity sales in the same period amounted to 3.17%.

Procurement scheme, i.e. a sum of electricity sales and corresponding distribution losses for the 2000-2009 period is shown in Figure 3.2.11.

Figure 3.2.11. Procurement, i.e. the sum of electricity sales and losses in distribution for the 2000-2009 period



Since 2007, the European statistics organization Eurostat has been using a new method for monitoring average electricity prices, defined per classes as shown in Tables 3.2.9. and 3.2.10.

Table 3.2.9. Consumption classes for households

Consumption class	The lowest consumption [kWh/g]	The largest consumption [kWh/g]
Da - very small households	-	< 1.000
Db - small households	1.000	< 2.500
Dc - medium households	2.500	< 5.000
Dd - large households	5.000	< 15.000
De - very large households	≥ 15.000	-

Source: Eurostat

Table 3.2.10. Consumption classes for commercial customers

Consumption class	The lowest consumption [MWh/g]	The largest consumption [MWh/g]
Ia	-	< 20
Ib	20	< 500
Ic	500	< 2.000
Id	2.000	< 20.000
Ie	20.000	< 70.000
If	70.000	≤ 150.000

Source: Eurostat

Indicative peak loads for commercial customers according to the Agency's estimation are shown in Table 3.2.11.

Table 3.2.11. Indicative peak loads for commercial customers

Consumption class	Lower value [kW]	Upper value [kW]
Ia	5	20
Ib	10	350
Ic	200	1.500
Id	800	10.000
Ie	5.000	25.000
If	15.000	50.000

The classification of customers regarding their consumption and number per consumption classes defined by the Eurostat's methodology is shown in Tables 3.2.12. and 3.2.13.

Table 3.2.12. Consumption classes for households

Consumption class	Consumption [%]	Customers [%]
Da	3,1	27,5
Db	13,6	24,0
Dc	33,8	28,4
Dd (5.001-10.000 kWh)	36,5	17,1
Dd (10.001-15.000 kWh)	8,3	2,3
De	4,7	0,7

Source: HEP- ODS

The largest proportion of electricity sold accounts for the classes Dd (large households) and Dc (medium households). As regards the number of customers (measuring points) the largest proportion accounts for the classes Dc (medium households) and Da (very small households).

Table 3.2.13. Consumption classes for commercial customers on low, medium and high voltage

Consumption class	Commercial customers on low voltage		Commercial customers on medium voltage		Commercial customers on high voltage		Total commercial customers	
	Consumption %	Customers %	Consumption %	Customers %	Consumption %	Customers %	Consumption %	Customers %
Ia	10,0	78,7	0,0	0,1	0,2	0,0	10,1	78,7
Ib	29,8	19,9	0,7	0,2	0,0	0,0	30,4	20,1
Ic	9,8	0,4	2,7	0,2	0,0	0,0	12,5	0,7
Id	3,2	0,0	20,9	0,4	0,0	0,0	24,0	0,4
Ie	0,0	0,0	12,7	0,0	5,9	0,0	18,6	0,0
> 150.000 MWh	0,0	0,0	0,0	0,0	1,9	0,0	2,3	0,0
All classes	52,7	99,0	37,7	1,0	9,5	0,0	100,0	100,0

Data do not include the consumption of HŽ infrastructure (on high voltage) *Source HEP- ODS, HEP-OPS*

In the commercial category using low voltage the largest proportion of electricity sold accounts for the Ib consumption class, while the largest proportion of the number of customers by far accounts for the consumption class of very small commercial customers, i.e. class Ia.

With the customers using medium voltage, the most electricity is sold in the consumption class Id which has the largest number of customers (metering points). With the customers connected to the high voltage the most electricity was sold in the Ie consumption class.

3.2.3.2 Electricity prices for final customers

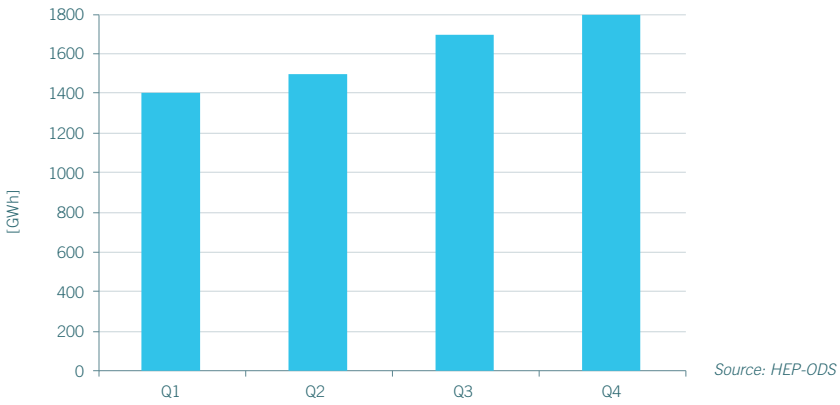
Electricity prices in the Republic of Croatia

In 2009, the licences for carrying out energy activity in the Republic of Croatia were granted to five legal entities as follows:
- HEP-ODS,
- HEP Opskrba d.o.o.,
- KORLEA d.o.o.
- PARTNER ELEKTRIK d.o.o. and
- HEP TOPLINARSTVO d.o.o.

In 2009, all customers using high voltage and a considerable number of customers using medium voltage concluded contracts on supply i.e. used their eligibility status. An overview of electricity sold to eligible customers, per quarter in 2009 and the proportion of particular customer categories (compared to their total consumption) that purchased electricity on the market from suppliers in December 2009 are shown in Figures below.

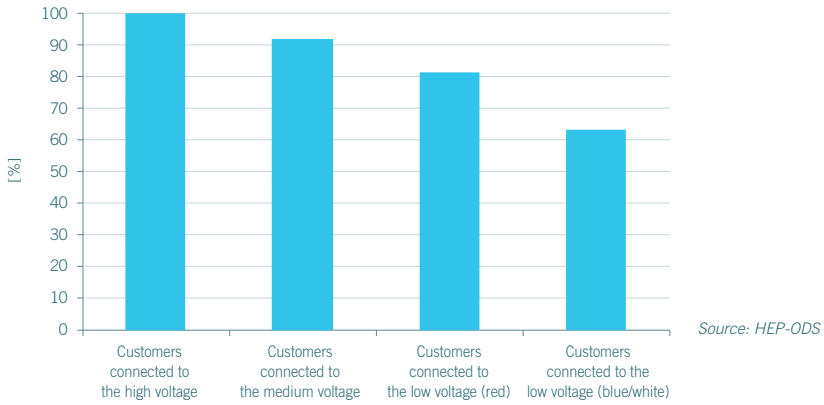
The electricity sold to customers per quarter in 2009 is shown in Figure 3.2.12.. The percentage shares of particular customer category on the market regarding electricity consumption in December 2009 are shown in Figure 3.2.13.

Figure 3.2.12. Electricity sold to eligible customers per quarter in 2009 [GWh]



Source: HEP-ODS

Figure 3.2.13. Proportion of particular customer categories on the market in comparison to the total consumption and customer categories in December 2009



Source: HEP-ODS

Total average sales prices for customers per tariff category and voltage level in the 2005-2009 period are shown in Table 3.2.14. All prices are defined based on tariff items from the tariff systems for regulated electric power activities valid at that time. Average electricity prices (without the fee for the network use) for eligible customers per quarter in 2009 are shown in Table 3.2.15.

Table 3.2.14. Average electricity sales prices for final customers in the 2005-2009 period [HRK/kWh]

Customer category	2005	2006	2007	2008 (H1)	2008 (H2)	2009
High voltage customers	0,31	0,31	0,31	0,30	0,35	-
Medium voltage customers	0,43	0,45	0,45	0,44	0,54	0,58
Low voltage customers - commercial customers	0,57	0,59	0,59	0,59	0,70	0,72
Low voltage customers - households	0,56	0,58	0,58	0,58	0,70	0,70
Total customers on low voltage	0,56	0,58	0,58	0,58	0,70	0,71

Source: HEP- ODS

Table 3.2.15. Average electricity prices for eligible customers in 2009 [HRK/kWh]

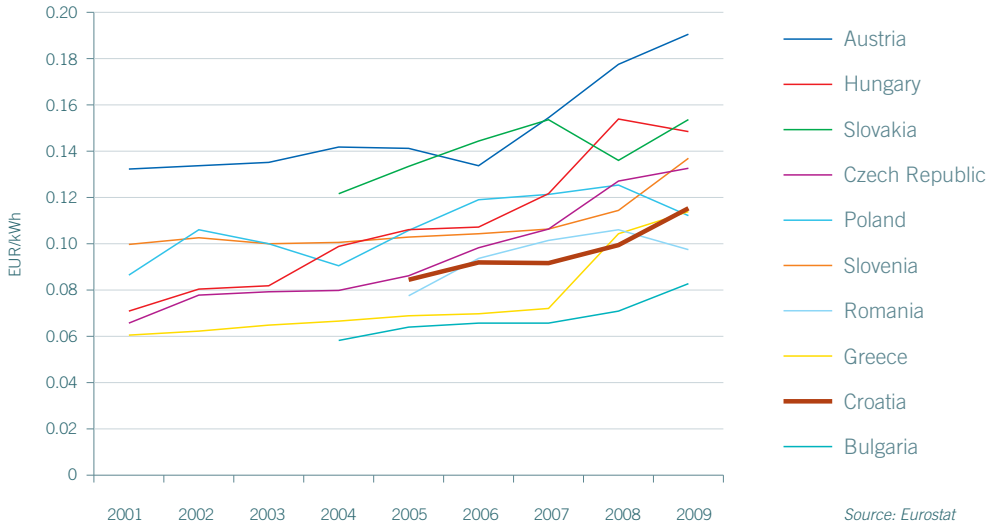
Quarter	Price
I.	0,381
II.	0,380
III.	0,376
IV.	0,384

Source: HEP-Opskrba

Electricity prices in the European countries

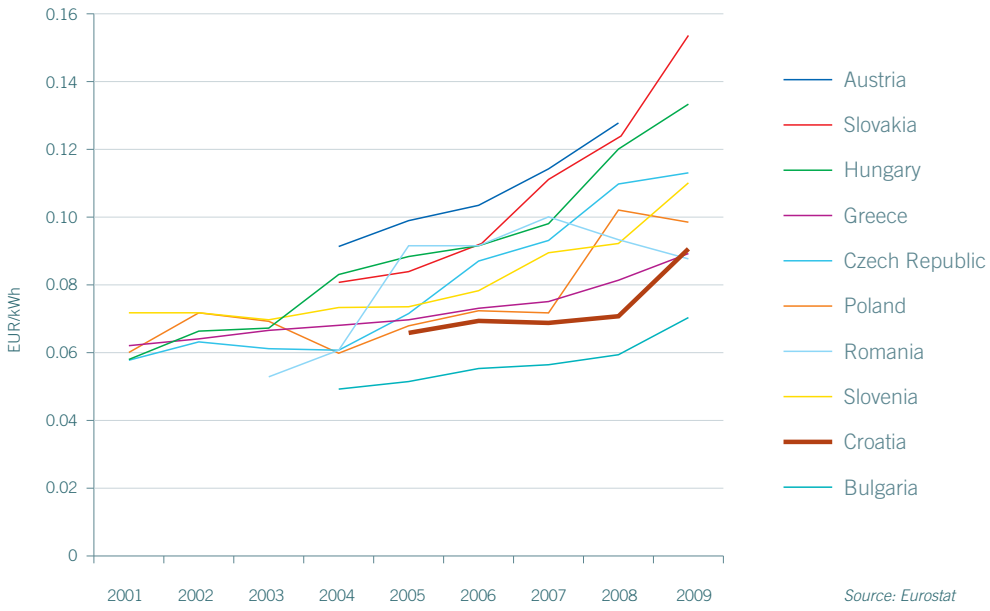
Trend of increase in total prices of electricity (including fees for the network use) in the EU countries for customers in households and commercial customer category is shown in Figures 3.2.14 and 3.2.15. The data were not available for all years.

Figure 3.2.14. An overview of change in total electricity prices in the EU countries for customers in household category Dc, from 2001 to 2009, taxes and fees included



Source: Eurostat

Figure 3.2.15. An overview of changes in total prices of electricity in EU countries for customers in commercial category Id, from 2001 to 2009, taxes and fees included



Source: Eurostat

Total average electricity prices in H2 2009 in EU countries, in the Kingdom of Norway, in the Republic of Turkey and the Republic of Croatia for households of Dc consumption class and commercial customers of Id class are shown in Figures 3.2.16. and 3.2.17. The prices shown include taxes and other fees.

Figure 3.2.16. Total electricity price for households of Dc category, taxes and fees for H2 2009 included

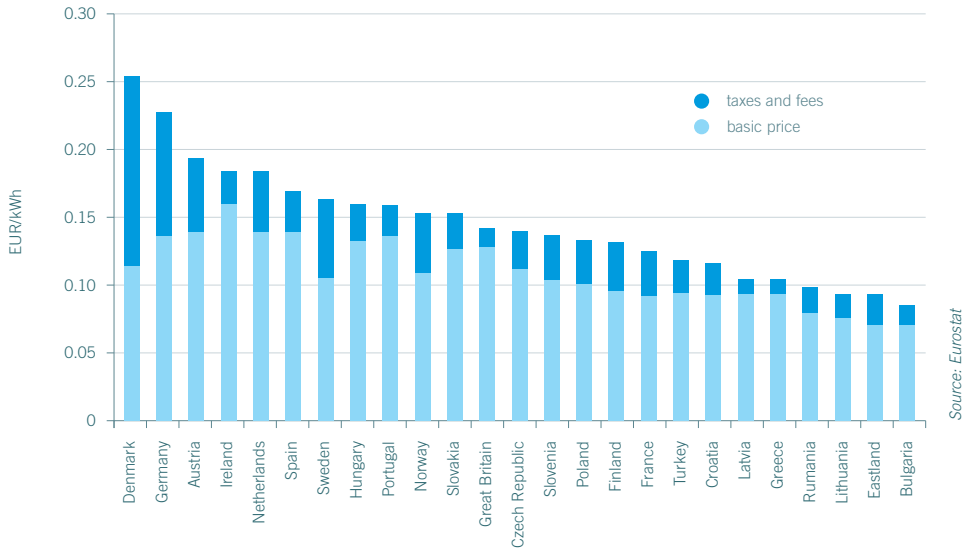
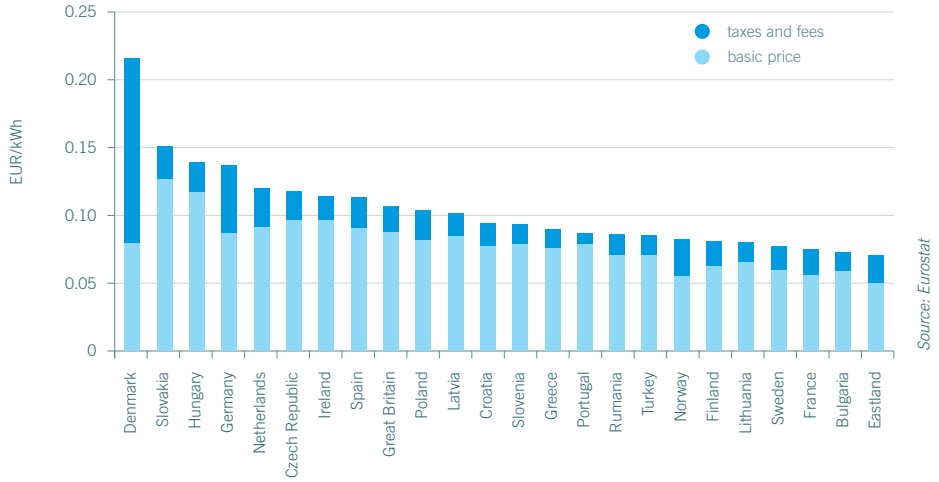


Figure 3.2.17. Total electricity price for commercial customers of Id category, taxes and fees for H2 2009 included



Electricity prices for characteristic customers in the Republic of Croatia

The features of typical electricity customers in the Republic of Croatia per consumption category are shown in Table 3.2.16. For those customers the structure of the total price per individual integral parts is shown in Figures 3.2.18. to 3.2.22.

Table 3.2.16. Features of typical electricity customers in the Republic of Croatia

Type of customer	Code	Annual consumption [MWh]	Peak load [MW]	Day/night	Category per tariff system
Very large industry	If	100.000	15	60/40	Commercial customer - high voltage
Large industry	Ie	24.000	4	60/40	Commercial customer - medium voltage (35 kV)
Medium-sized industry	Id	2.000	0,5	65/35	Commercial customer - medium voltage (10 kV)
Medium-sized commercial customers	Ib	150	0,05	70/30	Commercial customer - low voltage (red)
Medium-sized households	Dc	3,5	-	70/30	Households (white)

Figure 3.2.18. Price structure for the customer from If class, H2 2009

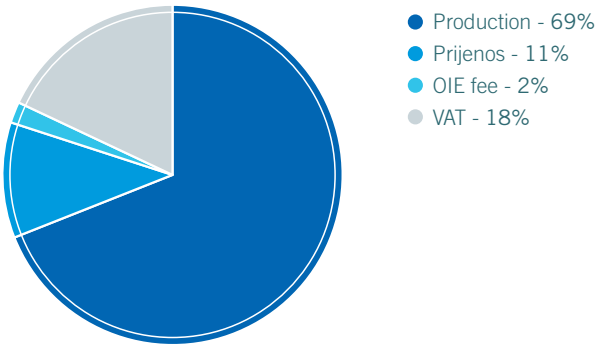


Figure 3.2.19. Price structure for the customer from Ie class, H2 2009

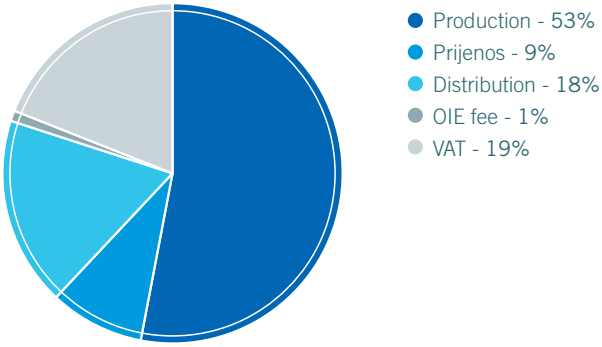


Figure 3.2.20. Price structure for the customer from Id class, H2 2009

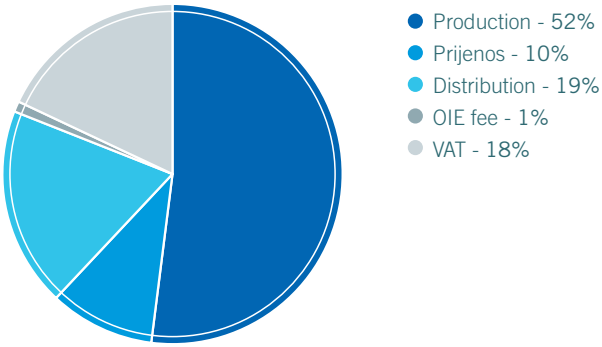


Figure 3.2.21. Price structure for the customer from Ib class, H2 2009

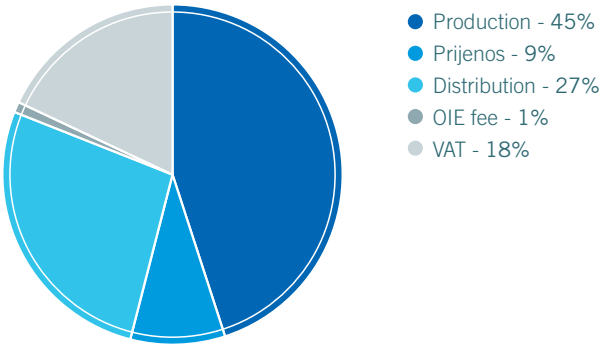
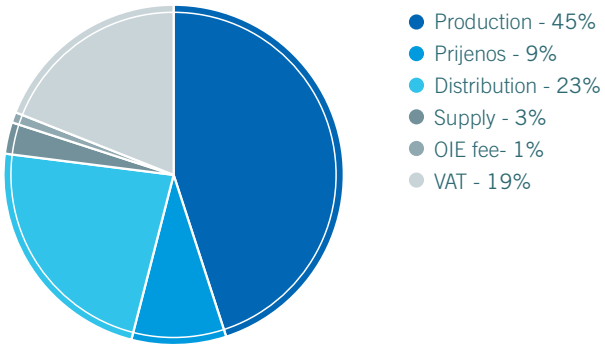


Figure 3.2.22. Price structure for the customer from Dc (households) class, H2 2009



3.2.3.3 Customer protection

In 2009, the Agency received a total of 105 requests, out of which 103 or 98% were resolved in 2009. Cases from the electricity sector are shown in Table 3.2.17.

Table 3.2.17. Cases from the electricity sector in 2009

Description	No.	Proportion [%]
Complaints and claims	41	39,0
Request for consent/approval of the Agency	6	5,7
Opinion, interpretation or instruction of the Agency required	23	21,9
The Agency requires opinion, interpretation, remarks	5	4,8
Report, questionnaire, data delivery by the Agency required	4	3,8
Data delivered to the Agency	25	23,8
Proposals of tariff items	1	1,0
TOTAL	105	100,0

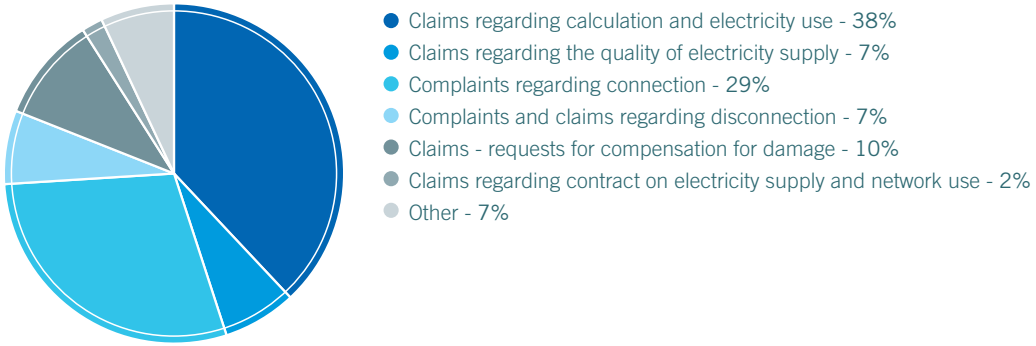
In 2009, the Agency received 41 complaints and claims all of which were related to the activity of HEP-ODS. The statistics of complaints and claims received is shown in Table 3.2.18.

Table 3.2.18. Groups of complaints and claims from the electricity sector in 2009

Ref.No.	Description	No.	Proportion [%]
1.	Claims regarding calculation and electricity use	-	37
1.1.	Claims regarding unauthorized electricity use - excess power	3	-
1.2.	Claims regarding unauthorized electricity use - energy	2	-
1.3.	Claims regarding electricity consumption calculation	10	-
2.	Claims regarding the quality of electricity supply	-	7
2.1.	Claims regarding electricity supply reliability	1	-
2.2.	Claims regarding voltage quality	0	-
2.3.	Claims regarding service quality	2	-
3.	Complaints related to connection	-	12
3.1.	Complaints regarding rejected request for issuing a preliminary electrical energy approval in the process of issuing a location permit	0	-
3.2.	Complaints regarding conditions from issued preliminary electrical energy approval	7	-
3.3.	Complaints regarding rejected request for issuing a preliminary electrical energy approval	1	-
3.4.	Complaints regarding non-fulfilment of provisions under contract on network connection	1	-
3.5.	Complaints regarding compensation under contract on connection	3	-
3.6.	Complaints regarding conditions from issued electrical energy approval	0	-
3.7.	Complaints regarding rejected request for issuing a an electrical energy approval	0	-
4.	Complaints and claims regarding disconnection	-	4
4.1.	Complaints regarding disconnection from electricity network	2	-
4.2.	Claims regarding suspension of electricity supply	1	-
5.	Claims - requests for compensation for damage	4	1
6.	Claims regarding contract on electricity supply and network use	1	2
7.	Other	3	7
	Total	41	100

Proportion of complaints and claims per individual category in total filed complaints related to the electricity sector received by the Agency in 2009 is shown in Figure 3.2.23.

Figure 3.2.23. Proportion of claims and complaints per individual category from the electricity sector in 2009



Out of received complaints and claims, 26 cases were not under Agency's jurisdiction, i.e. 63%. Complaints and claims from the electricity sector in 2009 which were not under the Agency's jurisdiction are shown in Table 3.2.19.

Table 3.2.19. Complaints and claims from the electricity sector in 2009 which were not under Agency's jurisdiction

Type of complaint/claim	No.	Proportion [%]
Claims regarding electricity consumption calculation	10	38
Complaints regarding certain fee for a contract on connection	2	8
Complaint regarding disconnection from the electricity network	1	4
Claims regarding quality of electricity delivery - supply reliability	1	4
Claims regarding suspension of electricity supply	1	4
Complaints regarding unauthorized use of electricity - energies	2	8
Claims regarding contract on electricity supply and network use	1	4
Complaints/claims - other reasons	2	8
Complaints regarding unauthorized use of electricity - excess power	3	12
Claims - request for compensation for damage	3	12
TOTAL	26	100

An overview of customer complaints submitted to HEP-ODS is shown in Table 3.2.20.

Table 3.2.20. An overview of customer complaints submitted to HEP-ODS

Type of complaint	Adopted	Rejected	In progress	Party withdrawn	TOTAL
Rejection of request for issuing a preliminary electrical energy approval (restricted technical conditions)	0	2	0	0	2
Rejection of conditions under the preliminary electrical energy approval and/or connection fee	3	2	0	1	6
Rejection of conditions from the issued preliminary electrical energy approval (resolving of property relations, unbundling of measuring, legalization of connection and similar)	2	0	0	0	2
Other (claim regarding fee for unauthorized consumption, consumption calculation etc.)	1	4	1	0	6
TOTAL	6	8	1	1	16

3.3 Generation of electricity from renewable energy sources and cogeneration

There is an incentive system for electricity generation from renewable energy sources and generation of energy in highly efficient cogeneration plants in the Republic of Croatia.

The respective system was introduced in 2007 and it is regulated by the following subordinate legislation:
- Tariff System for Electricity Generation from Renewable Energy Sources and Cogeneration (Official Gazette "Narodne novine" No. 33/07),
- Ordinance on Use of Renewable Energy Sources and Cogeneration (Official Gazette "Narodne novine", No. 67/07),
- Ordinance on Granting the Status of Eligible Electricity Generator (Official Gazette "Narodne novine", No. 67/07),
- Regulation on Incentives for Production of Electricity from Renewable Energy Sources and Cogeneration (Official Gazette "Narodne novine", No. 33/07, 133/07, 155/08 and 155/09) and
- Regulation on Minimum Proportion of Electricity Generated from Renewable Energy Sources and Cogeneration, generation of which is stimulated (Official Gazette "Narodne novine", No. 33/07).

The Croatian Energy Market Operator (HROTE) buys off electricity from eligible generators, i.e. from plants for which the generator was granted an eligibility status, and proportionally distributes it to suppliers for sale on the national market at the average market price. All customers pay to their supplier the agreed electricity price as well as the incentive for electricity generation from renewable energy sources and cogeneration.

The Agency issues decisions to all legal and natural persons on granting the eligible electricity generator status. The number of decisions issued in 2009 is shown in Table 3.3.1. whereas the number of eligible electricity generators is shown in Table 3.3.2.

Table 3.3.1. Decision on granting the eligible electricity generator status issued in 2009

Type of plant/primary energy source	No. of decisions issued in 2009		Plant power [MW]	
	Prior	Final	Prior	Final
Solar energy	4	1	0,07890	0,00900
Biomass and biogas	3	1	6,74000	1,00000
Hydro energy	-	-	-	-
Wind	1	2	1,00000	10,60000
Cogeneration plants	-	-	-	-
Total	8	4	7,8189	11,6090

Table 3.3.2. Number of eligible electricity generators as at 31 December 2009

Type of plant/primary energy source	Number of eligible generators as at 31 December 2009	Plant power [MW]
Solar energy	2	0,01614
Biomass and biogas	1	1,00000
Hydro energy	2	0,03000
Wind	4	27,75000
Cogeneration plants	-	-
Total	9	28,79614

The Regulation on the Minimum Proportion of Electricity Generated from Renewable Energy Sources and Cogeneration whose generation is stimulated prescribes the objectives of the Republic of Croatia regarding the electricity generation in power plants using renewable energy sources and cogeneration plants. Value of the minimum proportion of electricity generated from renewable energy sources and cogeneration in the total electricity consumption has been set as an objective that has to be fulfilled. This Regulation does not apply to hydro plants of installed power higher than 10 MW and electricity generated in cogeneration plants in the category of public heating plants.

The objective set to be completed by 31 December 2010 is as follows:
- Minimum proportion of electricity generated in plants using renewable energy sources whose generation is stimulated amounting to 5.8% of the total electricity consumption and
- Minimum proportion of electricity from cogeneration plants whose generation is stimulated and which is delivered into transmission, i.e. distribution network, amounting to 2.0% of total electricity consumption.

On 1 July 2007, the incentive for electricity generation from renewable energy sources and cogeneration started to be charged to customers, pursuant to the Regulation on Incentives for Generation of Electricity from Renewable Sources and Cogeneration. Pursuant to the 2007 Regulation, the incentive amounted to 0.0089 HRK/kWh in 2007, 0.0198 HRK/kWh in 2008, 0.0271 HRK/kWh in 2009 and 0.0350 HRK/kWh in 2010. An overview of fees, prices and generation is shown in Table 3.3.3.

Table 3.3.3. An overview of the prices and generation from eligible plants

Year	2007*	2008	2009	2010
Fee amount stipulated by the Regulation from 2007 [HRK/kWh]	0.0089	0,0198	0,0271	0,035
Fee amount [HRK/kWh]	0,0089	0,0089	0,0089	0,005**
Power of plants for generation of electricity from renewable sources and cogeneration whose generation is stimulated [MW]	5,95	11,23714	11,609	-
Cumulative power of plants using renewable energy sources in the incentive system (at year-end) [MW]	5,95	17,18714	28,79614	-
Cumulative power of cogeneration plants in the incentive system (at year-end) [MW]	-	-	-	-
Energy generated in eligible plants using renewable energy sources [MWh]	477	38.064	47.430	-
Energy generated in eligible cogeneration plants [MWh]	-	-	-	-
Total consumption *** [MWh]	17.629.700	17.995.800	17.696.700	-
Proportion of electricity generated in plants using renewable energy sources whose generation is stimulated in the total electricity consumption [%]	0,003	0,212	0,268	-
Percentage of electricity generated in cogeneration plants whose generation is stimulated in the total electricity consumption [%]	-	-	-	-

** The incentive system was established only in late June 2007, therefore only the period from July to December 2007 is considered.*
*** The amount in 2010 is defined by the Regulation on Amendments to the Regulation on Incentives for Generation of Electricity from Renewable Sources and Cogeneration (Official Gazette "Narodne novine", No. 155/09).*
**** The total consumption stipulated by the Regulation on a Minimum Proportion of Electricity Generated from Renewable Energy Sources and Cogeneration whose Generation is Stimulated (Official Gazette "Narodne novine", No. 33/07)*

The electricity generated per type of primary source in 2009 is shown in Table 3.3.4.

Table 3.3.4. Generation and incentives paid to eligible generators in 2009 per type of plant

Type of plant	Electricity generation [kWh]	Proportion [%]	Incentives paid [kn]	Proportion [%]
Biogas power plants	4.959.750	10,5	7.949.234,77	17,7
Hydro power plants	112.030	0,0	102.974,88	0,2
Solar power plants	16.464	0,0	74.670,13	0,2
Wind power plants	42.342.461	89,3	36.688.736,51	81,9
Total	47.430.705	100,0	44.815.616,29	100,0

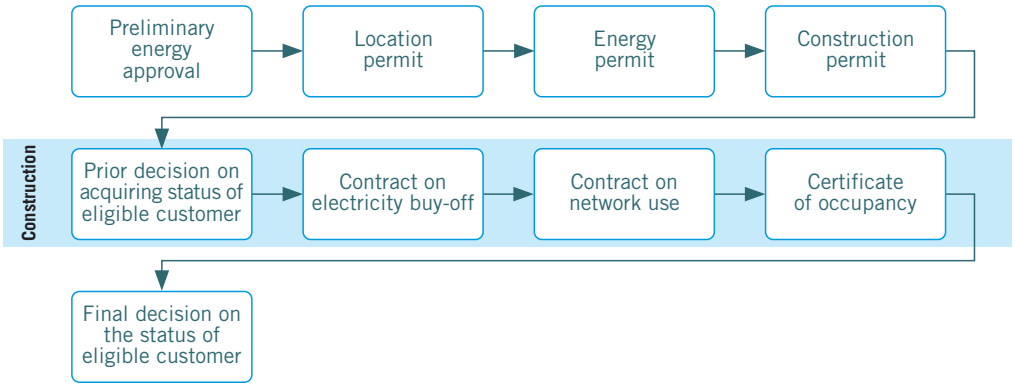
Despite the major interest for incentives shown by investors, there are a relatively small number of plants in 2007 and 2008 which concluded buy-off with the Croatian Energy Market Operator (HROTE) and/or started its operation. Therefore, the incentives for 2008 and 2009 were kept at the same level as in 2007. At the end of 2009 the Regulation on Amendments to Regulation on Incentives for Generation of Electricity from Renewable Sources and Cogeneration (Official Gazette "Narodne novine", No. 155/09) was issued. Pursuant to the respective Regulation the incentive for 2010 was reduced and amounted to 0.005 HRK/kWh. However, it is to be expected that in 2010 new eligible generators, significantly larger than the existing ones be integrated into the regular operation. Therefore, it will be probably required, to increase the incentive for the purpose of providing a financial stable functioning of the incentive system regarding generation of electricity from renewable sources and cogeneration.

Considering the growth of proportion of the electricity generated in the plants whose generation is stimulated in the total electricity consumption, it is evident that the targets set by the Regulation on a Minimum Proportion of Electricity Generated from Renewable Energy Sources and Cogeneration whose Generation is Stimulated issued in 2007 cannot be achieved. This seems to be contrary to the issued preliminary energy approvals

and the energy approvals issued by the end of 2009 by the Ministry. The said approvals (regulated by the Ordinance on Use of Renewable Energy Sources and Cogeneration) are the acts regulating the conditions and possibilities of use of renewable energy sources and cogeneration plants which have to be obtained prior to the procedure of issue of building permit i.e. the act which allows the building. The data about the issued approvals, along with the data on the planned plants can be found in the Registry of projects and plants for the use of renewable energy sources and cogeneration and of eligible producers (hereinafter: OIEKPP Registry). The OEIKPP Registry is kept by the Ministry and its parts are publicly available on the web pages of the Ministry.

The OIEKPP Registry shows that there is an exceptional interest in different plants using the renewable energy sources, first of all, the wind. Accordingly, by the end of 2009, various approvals were issued accounting for 5,000 MW of the planned power in total. In general, these were the acts (prior energy approvals and entries of the already initiated projects into the Registry) allowing the investigation of the potential of the renewable energy source within the investigation area. The number of energy approvals issued after the issued location permit is much smaller. Therefore, out of the planned almost 5,000 MW in wind-power plants, the appropriate energy approvals exist only for 181.2 MW. This shows, taking into consideration the course of the building preparation (Figure 3.3.1.), that the impossibility to obtain the location permit is the obvious obstacle to faster building of wind-power plants. It should be pointed out that within the procedure of location permit obtaining, the preliminary electrical energy approval (hereinafter: PEES) also has to be obtained in order to consider the possibilities of connection, establishment of technical, economical and other conditions for connection of the facility to the network and the building of the facility and the conditions of use of the network. By the end of 2008, HEP-OPS issued PEES for wind-power plants with the total power exceeding its own capacity limits for the purpose of security of the electrical energy system plant in terms of allowable total installed power of wind-power plants connected to the transmission network. Though the already built wind-power plants have not reached the said limit, the existing projects block the development of projects which could be built faster.

Figure 3.3.1. Order of issuing acts in preparation of construction of plants for electricity generation from renewable sources and cogeneration plants



Regarding the limitation of HEP-OPS for wind-power plants for the purpose of plant security, HEP-OPS made a step to the right direction by publishing the Additional Technical Conditions for Wind-Power Plant Connection and Operation on Transmission System in December 2008. The said Additional Technical Conditions enabled that the first projects in 2009 were developed under more transparent and more precise conditions, especially pointing out the conditions for connection and operation which had been significantly improved compared to the Network Rules for Electric Power System (Official Gazette "Narodne novine", no. 36/06).

It should not be forgotten that there are other conditions related to environment protection and space occupation which can make the project preparation impossible or prolong it, such as issue of location permits.

Generally speaking, it is necessary to improve the practice of issue of location and building permits. The problems which appeared in practice during 2007 and 2008 were mostly related to application of the Physical Planning and Construction Act (Official Gazette "Narodne novine", 76/07 and 38/09), published after several pieces of subordinate legislation regulating the issue of incentives for electric power generation from the renewable energy sources and cogeneration plants, which significantly changed the practice and the procedures valid up to that moment and it took some time to adapt to the new ones. Moreover, the technologies in question are a relative novelty for the competent offices for physical planning and construction. 2009 is an especially significant year since the Act on Methods and Building Conditions for the Stimulation of Investments (Official Gazette "Narodne novine", no. 69/09).

was issued. The said Act prescribes a simplified and faster procedure for certain types of buildings. Considering a large number of small and medium plants (up to 20 MW) covered by the said Act, it is expected that this Act will speed up the plant building preparations in the course of 2010.

Since the interested parties point out that there are significant administrative obstacles preventing faster plant building, during 2009 the Ministry continued the old and initiated the new projects in order to improve the practice, eliminate the administrative obstacles and inform the interested parties of the issues related to building of plants using renewable energy sources. The Agency actively participates in implementation of the said projects.

At the end of October, 2009, the Energy Strategy of the Republic of Croatia was published showing that the Republic of Croatia has good natural opportunities for exploitation of renewable energy sources. The Strategy defines the following targets related to the renewable energy sources (item 3.6. of the Strategy):

- The Republic of Croatia will fulfil the obligations according to the proposal of the Directive on fostering the utilization of energy from renewable sources 2009/28/EC of the European Union, including large hydro-power plants in the gross direct energy consumption in the amount of 20%;
- the Republic of Croatia will fulfil the obligations according to Directive of the European Union on the share of renewable sources in direct energy consumption for transportation in 2020 in the amount of 10%;
- the Republic of Croatia set the target that the share of generation of electric power from renewable sources, including the large hydro-power plants in the total electric power consumption in the period until 2020 should be maintained at the level of 35%.

The said targets are in compliance with the subsequently published Directive 2009/28/EC on fostering the utilization of energy from renewable sources.

REGULATED ACTIVITIES AND NATURAL GAS MARKET DEVELOPMENT

4. Regulated activities and natural gas market development

4.1 Regulated activities

4.1.1 Transmission system

Natural gas transmission is a regulated energy activity performed as a public service. Company Plinacro d.o.o. is a transmission system operator in the Republic of Croatia and it is owned by the Republic of Croatia. Plinacro d.o.o. manages the network of main gas and regional gas pipelines through which natural gas from domestic production (northern part of continental Croatia and the north Adriatic) and from import (procurement transmission route via the Republic of Slovenia (Rogatec-Zabok)) is transmitted to exit measuring-reduction stations where the gas is delivered to gas distribution systems and to final (industrial) customers directly connected to the transmission system. The gas transmission system of the Republic of Croatia is shown in Figure 4.1.1.

Figure 4.1.1. Existing and planned gas transmission system of the Republic of Croatia

The operation of the transmission system to which the gas production fields of the Pannonia and North Adriatic, underground gas storage Okoli, 37 distribution systems and 27 final customers are connected is constantly controlled and managed from the national dispatch centre equipped with modern Supervisory Control and Data Acquisition System (SCADA). The operational management and maintenance of the system is organized in four regions of gas transmission: "Eastern Croatia" with headquarters in Donji Miholjac, "Central Croatia" with headquarters in Popovača, "Northern Croatia" with headquarters in Zabok and "Western Croatia" with headquarters in Rijeka.

The total length of the gas transmission system in the Republic of Croatia at the end of 2009 was 2,154 km, out of which 454 km were gas pipelines under the working pressure of 75 bars, 1,640 km were gas pipelines under the working pressure of 50 bars and 60 km were gas pipelines under the working pressure of 4-50 bars. Within the gas transmission system, there are 9 entry measuring stations and the gas is received from 188 exits from the transmission system. In addition, the transmission system contains 154 measuring-reduction stations, 257 measuring lines, 99 cleaning stations and 82 blockage, i.e. blockage-exhaust stations within the gas transmission system. Transmission system operator performs an analysis of customer applications for access to transmission system and makes calculations of technical, reserved and free capacities of the transmission system for the purpose of managing capacities and congestions in the transmission system. Nominated and realized flows of natural gas are analysed and compared for the purpose of supervision over the use of reserved transmission system capacities. In 2009, transmission system capacities were sufficient to meet the needs of all transmission system users and there was no capacity congestion. Balancing of the transmission system is preformed daily by using linepack and underground natural gas storage Okoli (hereinafter referred to as: PSP Okoli). In January 2009, during the "gas crisis" caused due to the interruption of the agreed gas delivery from the Russian Federation, Plinacro managed the transmission system during the crisis declared by the Croatian Government pursuant to the measures for prevention of the crisis determined by the Ministry pursuant to the Regulation on Security of Natural Gas Supply.

Investment activities of Plinacro d.o.o. in 2009 were carried out according to the Plan of development, construction and modernization of the gas transmission system of the Republic of Croatia from 2002 to 2011 - the second investment phase from 2007 to 2011. The main gas pipeline Vodnjan-Umag has been fully completed and it will be put into operation in 2010. Regional gas pipelines Nova Kapela-Požega, Bjelovar-Sveti Ivan Žabno and Dobrovac-Omanovac and the measuring-reduction station Rijeka East were completed and put into operation. Pursuant to the letter of intent regarding the construction of the interconnection gas pipeline Slobodnica-Donji Miholjac-Dravaszerdahely-Varosföld from 2008, the building permit was obtained and the construction of the interconnection of gas transmission system of the Republic of Croatia and the Republic of Hungary (the main gas pipeline Slobodnica-Donji Miholjac) was commenced. In addition, the building permit was obtained and the construction of the Section II of the gas pipeline system of Lika and Dalmatia (gas pipeline Josipdol-Gospić, branch pipelines for MRS Otočac and Gospić, measuring-reduction stations included) was commenced. The main part of preparation works and procurement of equipment for gas pipelines, which are planned to be constructed by the end of the second investment phase, was carried out. The activities included obtaining location as well as building permits for facilities of the Section II and III of the gas pipeline system of Lika and Dalmatia (Gospić-Benkovac-Dugopolje), for the gas pipeline Kukuljanovo-Omišalj and the construction of the second section of the interconnection with the Republic of Hungary, the gas pipeline Dravaszerdahely-Donji Miholjac whose completion is planned by the end of 2010.

With respect to activities regarding connection to other transmission systems, it should be emphasized that Plinacro d.o.o. and Gazprom OAO (hereinafter referred to as: Gazprom) collected data in 2009 for the purpose of preliminary techno-economic study on the possibility of the transit of the gas pipeline (South Stream) through the Republic of Croatia. For this purpose a letter of intent was prepared and mutually agreed upon. In addition, the activities regarding realization of interconnection with the transmission system of Bosnia and Herzegovina as well as to the transmission system of the Republic of Slovenia (Omišalj-Zlobin-Rupa gas pipeline) were carried out. According to data delivered from Plinacro d.o.o., total transported quantities of natural gas in the Republic of Croatia in 2009 amounted to 3,148,449,782 m^3, which is 8.8% lower than the total quantity transported in 2008. Total losses of natural gas in the transmission system amounted to 0.1% in 2009. The largest daily quantity of transported gas for the final consumption[3] amounted to 15,300,000 m^3/day, which also represents the largest quantity of the daily transported gas. The largest achieved gas flow per hour on all entries into the transmission system in 2009 amounted to 710,000 m^3/h. The total technical capacity of all entries into the transmission system as at 31 December 2009 amounted to 914,000 m^3/h. According to data submitted by Plinacro d.o.o., technical capacities were laid down for nine entries into the transmission system, out of which the largest are: Rogatec - 210,000 m^3/h, Terminal Pula - 280,000 m^3/h and PSP Okoli - 280,000 m^3/h. The largest gas flow per hour at the level of the individual entries into the transmission system in 2009 was realized at the entry PSP Okoli amounting to 275,000 m^3/h. The total technical capacity of exits from the transmission system as at 31 December 2009 amounted to 1,603,000 m^3/h. Out of that, the total technical capacity of exits into distribution systems amounted to 825,000 m^3/h, the total technical capacity of exits to final customers directly connected to the transmission system 618.000 m3/h and technical capacities of exits into PSP Okoli 160,000 m^3/h. The largest realized gas flow per hour on all exits from the transmission system in 2009 amounted to 772,000 m^3/h, whereas the largest gas flow per hour realized from exits into distribution systems amounted to 593,000 m^3/h.

[3] *Exits into distributions systems and exits to customers directly connected to the transmission system*

The price of natural gas transmission is laid down by the Tariff System for Natural Gas Transport, without the Amounts of Tariff Items (Official Gazette "Narodne novine", No. 32/06 and 3/07). The Tariff System lays down three tariff items related to the natural gas transmission in the months of peak, medium and basic load. The Government of the Republic of Croatia prescribes the amount of tariff items and it is equal for all users of the transmission system. The amounts of tariff items for natural gas transmission in 2009 are shown in Table 4.1.1.

Table 4.1.1. Amounts of tariff items for natural gas transmission in 2009

Transport periods	Decision of the Government of the Republic of Croatia (Official Gazette "Narodne novine", No. 154/08) - valid from 1 January to 31 August 2009	Decision of the Government of the Republic of Croatia (Official Gazette "Narodne novine", No. 103/09)-valid since 1 September 2009
Peak load months (January, February, November, December)	T_{peak}= 5,16 kn po Sm^3 a day	T_{peak}= 5,13 kn po Sm^3 a day
Medium load months (March, April, May, June, September and October)	T_{medium}= 4,30 kn po Sm^3 a day	T_{medium}= 4,265 kn po Sm^3 a day
Basic load months (July and August)	T_{basic}= 2,58 kn po Sm^3 a day	T_{basic}= 2,58 kn po Sm^3 a day

The price of natural gas transmission is defined according to previously rented and real use of capacity of the transmission system of an individual user in a year. The average price of natural gas transmission in 2009 for gas suppliers of final customers connected to the distribution system amounted to 0.226 HRK/m^3, which is 17.7% more than the average transmission price for gas suppliers in 2008. The average price of natural gas transmission in 2009 for 27 final customers directly connected to the transmission system amounted to 0.180 HRK/m^3, which is 20.0% more than the average transmission price for final customers directly connected to the transmission system in 2008. Total average price of natural gas transmission in 2009 for all users of the transmission system amounted to 0.209 HRK/m^3, which is 24.4% more than the total average price of natural gas transmission in 2008.

4.1.2 Gas storage system

Storage of natural gas is a regulated energy activity performed as a public service. Gas storage system operator in the Republic of Croatia in 2009 is the energy undertaking Podzemno skladište plina d.o.o. (hereinafter referred to as: PSP d.o.o.). In January 2009, PSP d.o.o. obtained from the Agency a licence for carrying out energy activity of natural gas storage. For the natural gas storage, PSP d.o.o. uses PSP Okoli whose geographical position is shown in Figure 4.1.1. Before separation into PSP d.o.o., an independent company, the company PSP Okoli has been an integral part of the company INA d.d. from the moment of the beginning of its operation in 1987. PSP Okoli consists of underground gas deposit (geological structure), operational and control rigs and the overground part of the plant whose basic facilities are rig platforms, connection pipelines, regulation station, gas drying station, measuring station and compression station and ancillary facilities. In general, the natural gas is injected into the underground deposit from 1 April to 31 September and withdrawn from 1 October to 31 March.

The technical capacities of the gas storage system[4] are defined by the Supplemental mining project for the exploitation field Okoli - underground gas storage of 25 November 2005. The technical capacity of the working volume amounts to 553M m^3, the technical capacity of withdrawal amounts to 240,000 m^3/h (5.76M m^3/day), while the technical injection capacity amounts to 160,000 m^3/h (3,84M m^3/day).

During 2009, 364,283,412 m^3 of natural gas was injected into and 390,659,659 m^3 of natural gas was withdrawn from the PSP Okoli in total. The end of the withdrawal cycle and the beginning of the natural gas injection cycle was on the 4 April 2009, when the status of the working volume was 209,345,269 m^3. The beginning of the cycle of gas withdrawal was on the 13 October 2009, while the status of the working volume at that time was 573,628,681 m^3, which is, at the same time, the largest achieved status of the working volume of the PSP Okoli in 2009. The status of the natural gas working volume in the PSP Okoli on certain dates during 2009 is shown in the figure 4.1.2. The largest achieved gas withdrawal capacity in 2009 amounted to 270,000 m^3/h, while the largest achieved gas injection capacity amounted to 160,000 m^3/h.

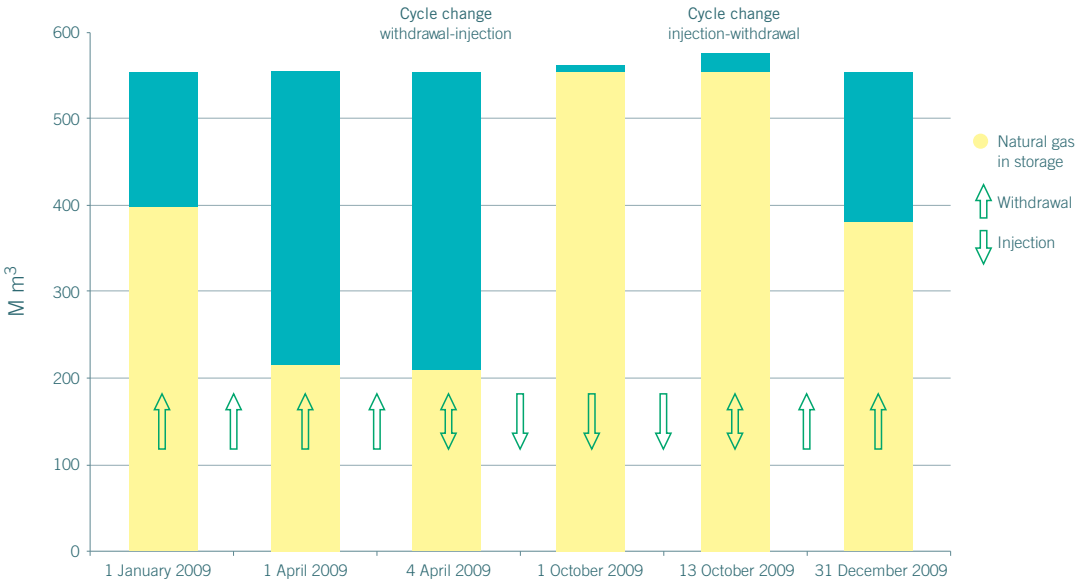
The largest achieved capacities of working volume and gas withdrawal in 2009 were realized within the trial exploitation approved by the decisions of the Ministry of Economy, Labour and Entrepreneurship[5]. The purpose of the trial exploitation was to explore how the PSP Okoli system would behave in the new working conditions and, on the basis of the acquired knowledge, to decide on the change of its working parameters so that they could be presented in the new Mining project whose preparation is ongoing. Mining works were

4 The technical capacity is the total capacity of the gas storage system which the gas storage system operator can offer to the system users, taking into account the integrity and technical capabilities of the gas storage system.

5 Decisions of the Ministry of Economy, Labour and Entrepreneurship, Mining Administration; Class: UP/I-310-01/09-03/186, Reg.no. 526-14-01-09-2 and Class: UP/I-310-01/09-03/140, Reg. no. 526-14-01-09-4

done in four measuring rigs with the intention to determine their working potential and the possibility of their conversion for the gas injection/withdrawal purposes. Three of them were connected into the PSP Okoli system by a temporary overground connection in order to be tested in the real working conditions which resulted in the increase of the total output capacity of the storage by maximum 16,000 m^3/h of gas, depending on the pressure (quantity of gas) in the storage. The preparatory activities for their permanent equipment and connection into the PSP Okoli system are underway. Furthermore, separation of the PF1, PF2 and PF6 platforms into a separate reduction-regulation line with the possibility of work on lower pressure was conducted. In this way, the rigs connected to the said platforms were enabled to work with a larger capacity, which also increased the output storage capacity by additional 10 000 m^3/h, depending on the pressure in the deposits. Until the Ministry of Economy, Labour and Entrepreneurship adopts the new Mining project, the technical capacities will remain as defined in the valid Mining project.

Figure 4.1.2. Status of natural gas supplies in PSP Okoli on particular days in 2009



The price of natural gas storage is defined according to the Tariff System for Storage of Natural Gas which came into force on 1 January 2009. Furthermore, the Government of the Republic of Croatia issued a Decision on the Amount of Tariff Items for the Storage of Natural Gas (Official Gazette "Narodne novine", No. 73/09) in June 2009. The amounts of tariff items pursuant to the aforementioned Decision are shown in Table 4.1.2.

Table 4.1.2. Amounts of tariff items for natural gas storage

T_{rv} - tariff item for the lease of working volume	T_{rv} = 8,77 HRK/MWh
T_u - tariff item for the lease and use of daily injection capacity of gas into the working volume	T_u = 270,65 HRK/MWh/day
T_p - tariff item for the lease and use of daily withdrawal capacity of gas from the working volume	T_p = 195,41 HRK/MWh/day

4.1.3 Distribution systems

Gas distribution is a regulated energy activity performed as a public service. In 2009, the gas distribution in the Republic of Croatia was performed by 38 energy undertakings[6] and since the beginning of 2010, there have been 37 active distribution system operators[7] in the Republic of Croatia.

According to the data collected from 38 distribution system operators, the total distributed quantities of gas[8] in the Republic of Croatia in 2009 amounted to 1,264M m^3 which is by 4.2% less than the quantities of gas distributed in 2008. Out of the total quantity of the gas distributed, 733M m^3 (58%) was distributed to users of the household tariff group and 531M m^3 (42%) to users of the commercial tariff group. In 2009,

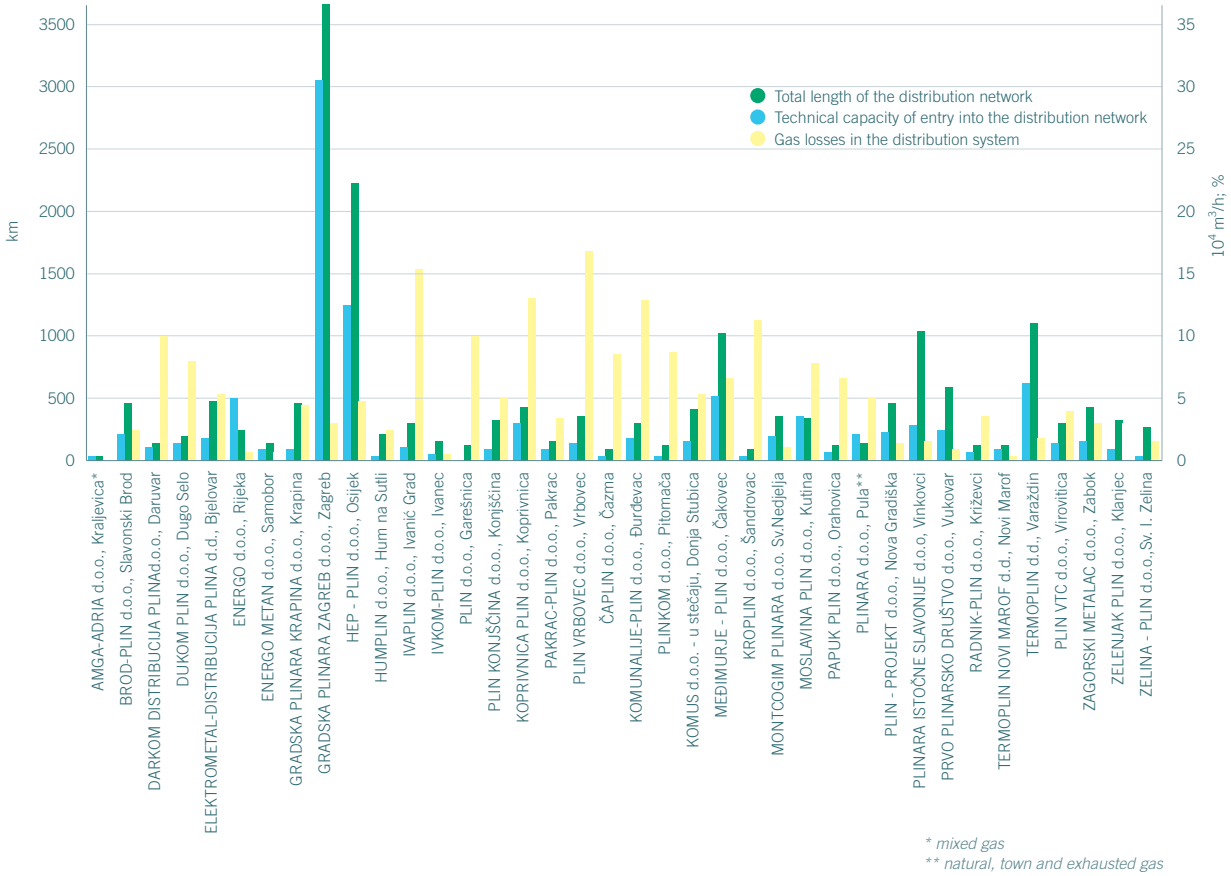
6 *Including the energy undertaking Amga-Adria d.o.o., Kraljevica, which distributed mixed gas and the energy undertaking Plinara d.o.o. Pula which, apart from the natural gas, also distributed the town and evaporated gas.*

7 *In December 2009, the energy undertaking Amga-Adria d.o.o. Kraljevica was annexed to the energy undertaking Energo d.o.o. Rijeka.*

8 *Natural gas, mixed gas, town gas and evaporated gas.*

the total number of distribution system users amounted to 619,533, out of which 576,924 were users of the household tariff group and 42,599 of the commercial tariff group. Out of the total number of commercial tariff group in 2009, 67 users realized an annual natural gas consumption above 1M m^3 and under or equal to 5M m^3 and 6 users realized an annual consumption of the natural gas above 5M m^3.

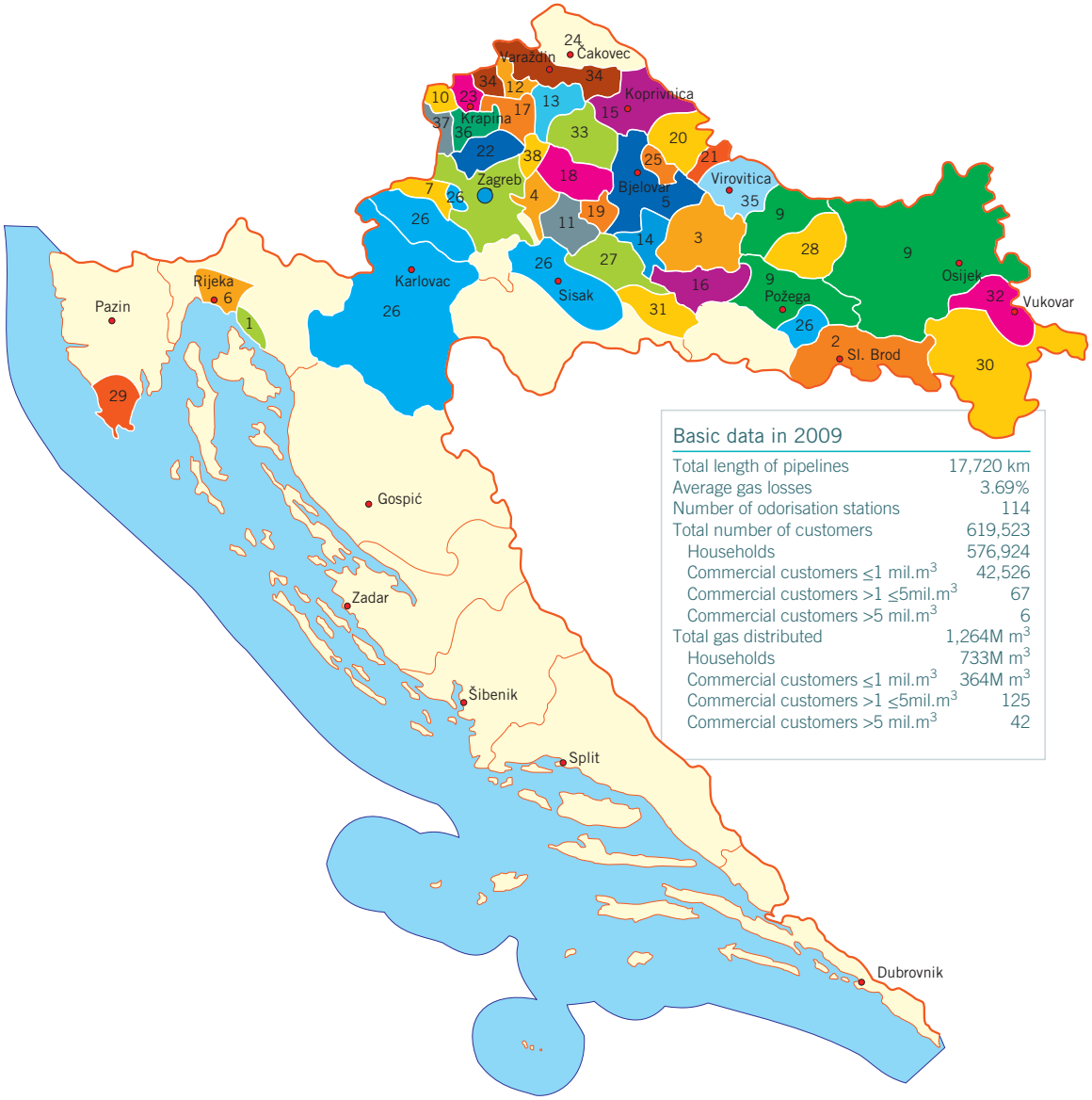
Figure 4.1.3. Comparison of the length of distribution network, the total technical capacity of exits into distribution systems and gas losses per distribution system operator in the Republic of Croatia in 2009



The total length of the gas distribution network in the Republic of Croatia at the end of 2009 amounted to 17,720 km, which is 0.8% more compared to the total length of all gas distribution network at the end of 2008. Average gas losses in the distribution network amounted to 3.69%[9] which is 8.2% more in comparison to the average gas losses in distribution network in 2008. The total number of odorisation stations in all distribution systems at the end of 2009 amounted to 112. The comparison of the length of distribution network, the total technical capacity of exits into distribution systems and gas losses per single distribution system operator in the Republic of Croatia in 2009 is shown in Figure 4.1.3 and the geographical position of the distribution areas of distribution system operators in 2009 is shown in Figure 4.1.4.

[9] *Weighted average according to the distributed gas quantities of the particular distribution system operators.*

Figure 4.1.4. Geographical position of distribution areas of distribution system operators and basic information on the energy activity of gas distribution in the Republic of Croatia in 2009.



1 AMGA ADRIA d.o.o., Kraljevica
2 BROD-PLIN d.o.o., Slavonski Brod
3 DARKOM DISTRIBUCIJA PLINA d.o.o., Daruvar
4 DUKOM PLIN d.o.o., Dugo Selo
5 ELEKTROMETAL-DISTRIBUCIJA PLINA d.o.o., Bjelovar
6 ENERGO d.o.o., Rijeka
7 ENERGOMETAN d.o.o., Samobor
8 GRADSKA PLINARA ZAGREB d.o.o., Zagreb
9 HEP-Plin d.o.o., Osijek
10 HUMPLIN d.o.o., Hum na Sutli
11 IVAPLIN d.o.o., Ivanić Grad
12 IVKOM-PLIN d.o.o., Ivanec
13 TERMOPLIN NOVI MAROF d.d., Novi Marof
14 PLIN d.o.o. Garešnica
15 KOPRIVNICA PLIN d.o.o. Koprivnica
16 PAKRAC-PLIN d.o.o. Pakrac
17 PLIN KONJŠČINA d.o.o., Konjščina
18 PLIN VRBOVEC d.o.o., Vrbovec
19 ČAPLIN d.o.o., Čazma
20 KOMUNALIJE-PLIN d.o.o., Đurđevac
21 PLINKOM d.o.o., Pitomača
22 KOMUS d.o.o. - u stečaju, Donja Stubica
23 GRADSKA PLINARA KRAPINA d.o.o., Krapina
24 MEĐIMURJE-PLIN d.o.o., Čakovec
25 KROPLIN d.o.o., Šandrovac
26 MONTCOGIM PLINARA d.o.o., Sv. Nedjelja
27 MOSLAVINA PLIN d.o.o., Kutina
28 PAPUK PLIN d.o.o., Orahovica
29 PLINARA d.o.o., Pula
30 PLINARA ISTOČNE SLAVONIJE d.o.o., Vinkovci
31 PLIN-PROJEKT d.o.o., Nova Gradiška
32 PRVO PLINARSKO DRUŠTVO d.o.o., Vukovar
33 RADNIK-PLIN d.o.o., Križevci
34 TERMOPLIN d.d., Varaždin
35 PLIN VTC d.o.o., Virovitica
36 ZAGORSKI METALAC d.o.o., Zabok
37 ZELENJAK PLINd.o.o., Klanjec
38 ZELINA-PLIN d.o.o., Sv. I. Zelina

According to the Energy Act, the price of gas distribution is regulated and defined by the Tariff System of Distribution of Natural Gas, without the Amounts of Tariff Items (Official Gazette "Narodne novine", No. 34/07, 47/07 and 44/10). In December 2008, the Government of the Republic of Croatia issued the last valid Decision on the Amounts of Tariff Items for Distribution of Natural Gas (Official Gazette "Narodne novine", No. 154/08) defining the amount of tariff items for all 38 distribution system operators in the Republic of Croatia. Amounts of tariff items pursuant to the aforementioned Decision[10] are shown in Table 4..1.3, while the average prices of gas distribution per distribution system operator[11] in the Republic of Croatia in 2009 are shown in Figure 4.1.5.

10 Meanwhile, from the date of issuing of the Decision on the Amount of Tariff Items for Gas Distribution in December 2008 up to now, due to the process of unbundling of activities, the names of individual energy undertakings have been changed. A detailed overview of the names of energy undertakings prior to and after the process of activity unbundling is shown in Figures 4.1.6. and 4.1.7.

11 Weighted average per distributed gas quantity for users of tariff models TM1, TM2, TM3 and TM4, per each distribution system operator.

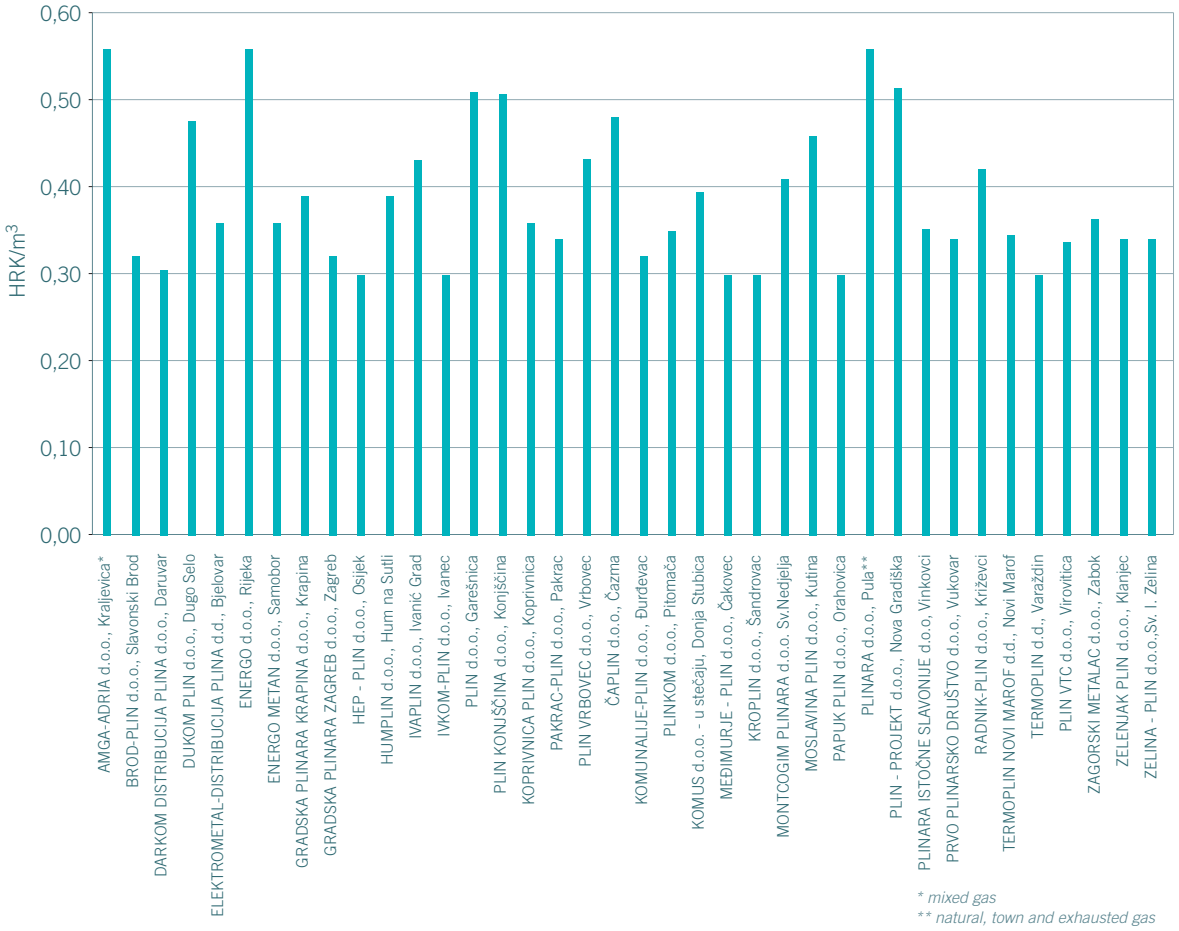
Table 4.1.3. Amounts of tariff items for gas distribution per distribution system operator, for tariff models (VAT excluded)

No.	Name of distribution system operator	Decision of the Government of the Republic of Croatia (Official Gazette "Narodne novine", No. 154/08 as at 1 January 2009		
		Household	Commercial customers ≤1 M m³	Commercial customers ≥1 M m³
1	AMGA ADRIA d.o.o., Kraljevica*	0.558	0.558	0.558
2	BROD-PLIN d.o.o., Slavonski Brod	0.32	0.32	0.32
3	DARKOM d.o.o., Daruvar	0.31	0.30	0.30
4	DUKOM d.o.o., Dugo Selo	0.44	0.56	0.56
5	ELEKTROMETAL d.d., Bjelovar	0.36	0.36	0.36
6	ENERGO d.o.o., Rijeka	0.558	0.558	0.558
7	ENERGOMETAN d.o.o., Samobor	0.36	0.36	0.36
8	GRADSKA PLINARA KRAPINA d.o.o., Krapina	0.39	0.39	0.00
9	GRADSKA PLINARA ZAGREB d.o.o., Zagreb	0.305	0.35	0.35
10	HEP - Plin d.o.o., Osijek	0.30	0.30	0.30
11	HUMKOM d.o.o., Hum na Sutli	0.39	0.39	0.00
12	IVAKOP d.o.o., Ivanić Grad	0.36	0.56	0.00
13	IVKOM d.o.o., Ivanec	0.30	0.30	0.00
14	KOMUNALAC d.o.o., Garešnica	0.51	0.51	0.00
15	KOMUNALAC d.o.o., Koprivnica	0.36	0.36	0.36
16	KOMUNALAC d.o.o., Pakrac	0.34	0.34	0.34
17	KOMUNALAC KONJŠČINA d.o.o., Konjščina	0.506	0.506	0.00
18	KOMUNALAC VRBOVEC d.o.o., Vrbovec	0.47	0.49	0.34
19	KOMUNALIJE d.o.o., Čazma	0.48	0.48	0.00
20	KOMUNALIJE d.o.o., Đurđevac	0.32	0.32	0.32
21	KOMUNALNO PITOMAČA d.o.o., Pitomača	0.35	0.35	0.00
22	KOMUS d.o.o. - u stečaju, Donja Stubica	0.395	0.395	0.00
23	MEĐIMURJE PLIN d.o.o., Čakovec	0.30	0.30	0.30
24	METALPRODUKT d.d., Šandrovac	0.30	0.30	0.30
25	MONTCOGIM - PLINARA d.o.o., Sv. Nedjelja	0.52	0.34	0.34
26	MOSLAVINA - PLIN d.o.o., Kutina	0.46	0.46	0.00
27	PAPUK d.o.o., Orahovica	0.30	0.30	0.30
28	PLINARA d.o.o., Pula**	0.56	0.56	0.56
29	PLINARA ISTOČNE SLAVONIJE d.o.o., Vinkovci	0.36	0.34	0.34
30	PLIN-PROJEKT d.o.o., Nova Gradiška	0.47	0.55	0.55
31	PRVO PLINARSKO DRUŠTVO d.o.o., Vukovar	0.34	0.34	0.34
32	RADNIK d.o.o., Križevci	0.43	0.41	0.00
33	TERMOPLIN d.d., Varaždin	0.30	0.30	0.30
34	TERMOPLIN NOVI MAROF d.d., Novi Marof	0.345	0.345	0.345
35	VIRKOM d.o.o., Virovitica	0.35	0.35	0.00
35	ZAGORSKI METALAC d.o.o., Zabok	0.44	0.30	0.30
38	ZELENJAK d.o.o., Klanjec	0.34	0.34	0.00
38	ZELINSKE KOMUNALIJE d.o.o., Zelina	0.34	0.34	0.34

**uz prirodni distribuira i miješani plin*

***uz prirodni distribuira i gradski i ispareni plin*

Figure 4.1.5. Average gas distribution prices per distribution system operator in the Republic of Croatia in 2009



** mixed gas*
*** natural, town and exhausted gas*

4.1.4 Unbundling of activities

The unbundling of energy activities stipulated under the Gas Market Act implies that the activity of the transmission system operator, distribution system operator, gas storage system operator and LNG system operator, including the operator which is a part of a vertically integrated energy undertaking, needs to be organised as an independent legal entity and independently from other activities in the gas sector. The basic purpose of unbundling is the application of the principle of avoiding the discrimination of gas system users, cross-subsidies of regulated and market activities as well as the distortion of competition. It should be noted that the Gas Market Act allows the organisation of a combined system operator, which means that the activities of the transmission system operator, distribution system operator, gas storage system operator and LNG system operator may be organised jointly, but separately from the gas production and gas supply activities.

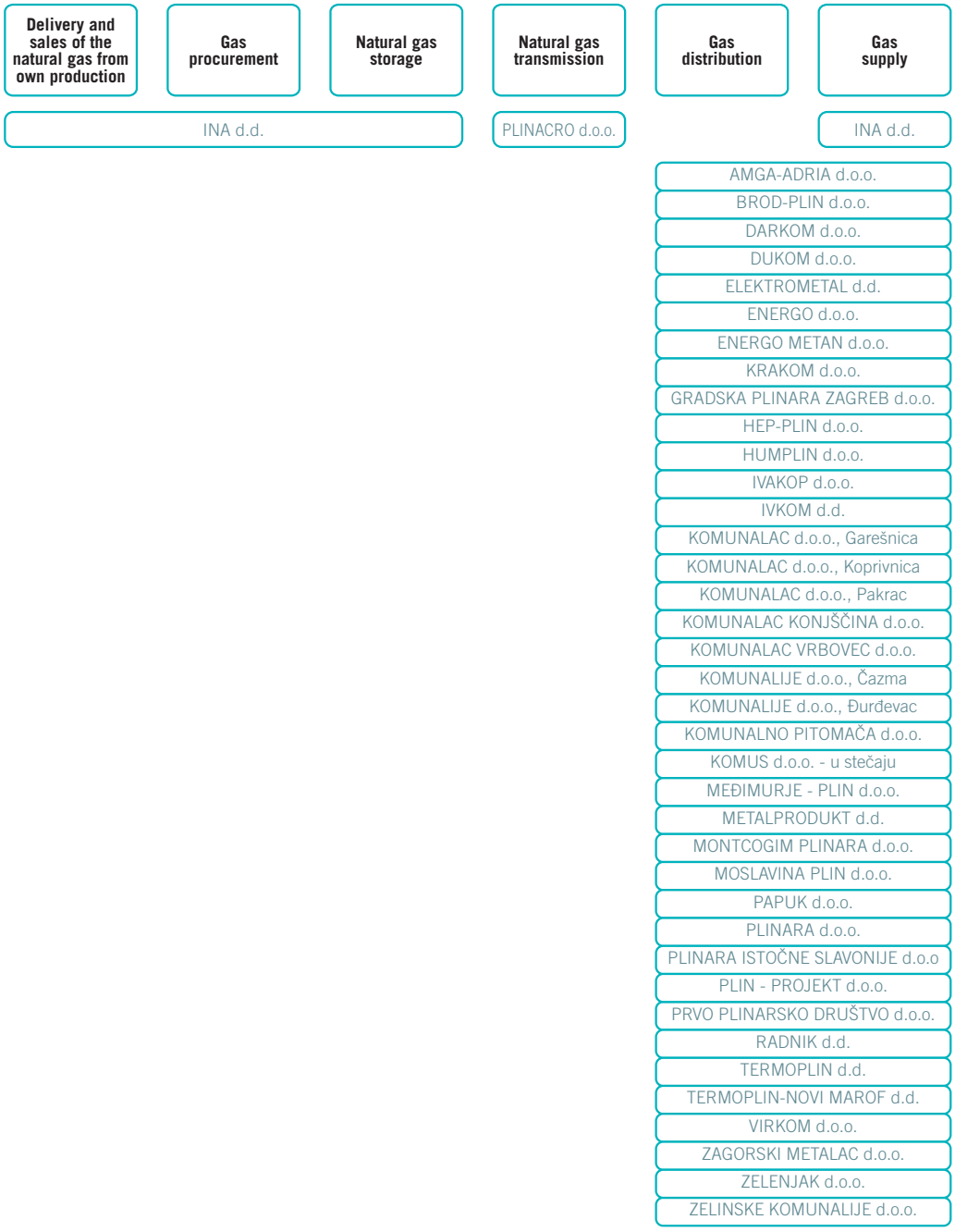
Exceptionally, the Gas Market Act stipulates that the distribution system operator which is an integral part of the vertically integrated energy undertaking and which has less than 100,000 customers connected to the distribution system is not obliged to unbundle its activities. In addition, the obligation is prescribed to organise the energy activity of gas distribution in an independent legal entity which is separated from the horizontally integrated undertakings and independent of activity outside the gas sector. Regarding this obligation, there are no derogation in relation to the number of system users.

If one energy undertaking carries out two or more energy activities, i.e. in addition to the energy activity, the energy undertaking carries out also other activities, it is obliged to keep business books and draw up financial statements per each energy activity, unbundled from other activities according to the regulations on accounting of entrepreneurs. Subsequently, according to the rules of internal accounting, the combined operator is obliged to separately keep, in its business books, the data referring to the activity of gas transmission, gas distribution, gas storage and LNG managing.

Furthermore, the energy undertakings are also obligated to draw up, publish and submit for audit their

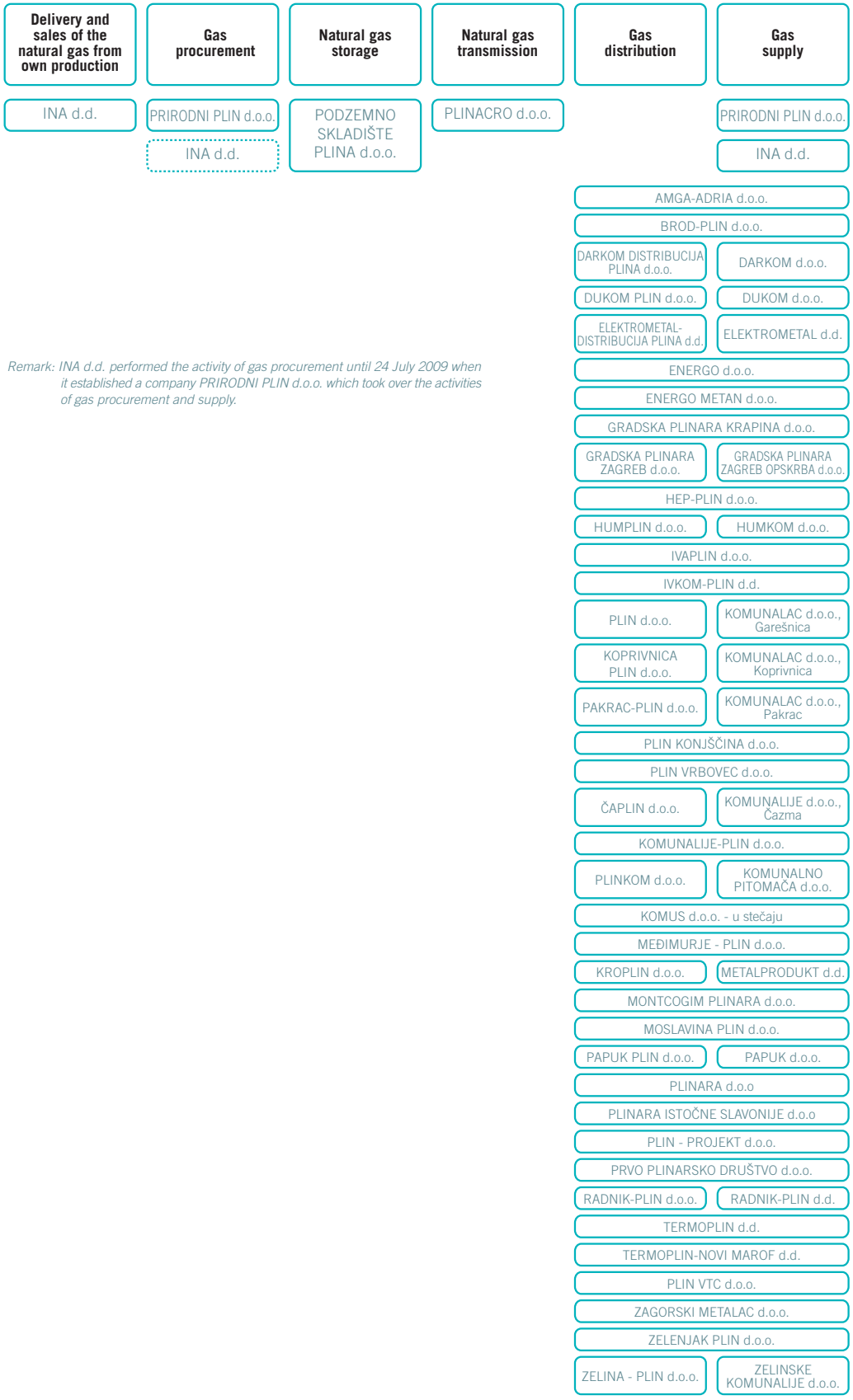
annual financial statements, in accordance with the Accounting Act and the Audit Act. Those energy undertakings which are not legally obliged to publish their annual financial statements have to keep a copy of these at the disposal of the public at their head office. The audit of the annual financial statements is performed in accordance with the Audit Act and has to verify that the principle of avoiding the discrimination of gas system users and cross-subsidies of regulated and market activities in the gas-related sector was respected.

Figure 4.1.6. Structure of energy undertakings per energy activity carried out prior to the unbundling of activities



The process of the gas sector restructuring which included the restructuring of 39 companies, started in 2008 and was almost completed in 2009. When comparing the structure of the companies performing particular energy activity before the implementation of the unbundling process shown in the figure 4.1.6. and the structure after the unbundling implementation as shown in the figure 4.1.7., one can clearly see the effect of the unbundling. The manner of implementation and the results of unbundling are presented in detail per energy activity in the further text.

Figure 4.1.6. Structure of energy undertakings per energy activity carried out prior to the unbundling of activities



Remark: INA d.d. performed the activity of gas procurement until 24 July 2009 when it established a company PRIRODNI PLIN d.o.o. which took over the activities of gas procurement and supply.

Natural gas transmission

Since 2002, the energy activity of natural gas transmission in the Republic of Croatia has been carried out by the company Plinacro d.o.o. created by separation from INA d.d and owned by the Republic of Croatia. Pursuant to the provisions of the Gas Market Act, in 2007 the company Plinacro d.o.o. was designated as the transmission system operator in the Republic of Croatia for a period of 30 years. The transmission system which includes pipelines, entry measuring stations, take-over measuring and measuring-reduction stations, the remote supervision, management and data acquisition system and other facilities and equipment necessary for carrying out an energy activity is owned by the transmission system operator. Plinacro d.o.o. is represented separately, it has its own visual identity and the users clearly identify it as an energy undertaking which carries out the energy activity of natural gas transmission.

Natural gas storage

Since the beginning of 2009, the energy activity of natural gas storage in the Republic of Croatia has been performed by the company Podzemno skladište plina d.o.o. Pursuant to the provisions on unbundling of energy activities laid down in the Gas Market Act, this company was created by separation from INA d.d. in November 2008. In January 2009, Podzemno skladište plina d.o.o. obtained a licence for performing energy activity of natural gas storage. Plinacro d.o.o. which, as mentioned, carries out the energy activity of gas transmission in the Republic of Croatia, purchased Podzemno skladište plina d.o.o. from the company INA d.d. in the first half of 2009. Podzemno skladište plina d.o.o. still operates as a separate legal entity. The natural gas storage system which includes underground rigs, underground and aboveground equipment and other facilities and equipment required for carrying out the energy activity is owned by the gas storage system operator. Podzemno skladište plina d.o.o. is represented separately, has its own visual identity and the customers identify it as an energy undertaking performing energy activity of natural gas storage.

Gas distribution and supply

In 2009, the energy activity of gas distribution in the Republic of Croatia was carried out by 38 distribution system operators. 14 of them did not have the obligation to unbundle the activities because they operate as vertically integrated energy undertakings serving less than 100,000 customers. The remaining 24 distribution system operators are obliged to unbundle the activities. Among them, only Gradska plinara Zagreb d.o.o. serves more than 100,000 customers and operates as a vertically integrated energy undertaking. During 2008, the activity of supply and other accompanying activities were separated from this energy undertaking and the company Gradska plinara Zagreb - Opskrba d.o.o. was established. In 2009, the aforementioned company obtained the licence for carrying out the energy activity of gas supply.

The remaining 23 energy undertakings, although serving less than 100,000 customers, are obliged to unbundle the activities on the grounds of business operation within horizontally integrated energy undertakings. The figure 4.1.6 shows that after the completion of the unbundling process, 14 energy undertakings have been organized as an independent legal entity carrying out the energy activity of gas distribution only. The same number of energy undertakings carries out the energy activity of gas supply as a horizontally integrated legal entity. Apart from the gas distribution, the energy activity of gas supply is carried out by 24 energy undertakings, as vertically integrated legal entities serving less than 100,000 customers.

4.2 Natural gas market development

4.2.1 Natural gas balance

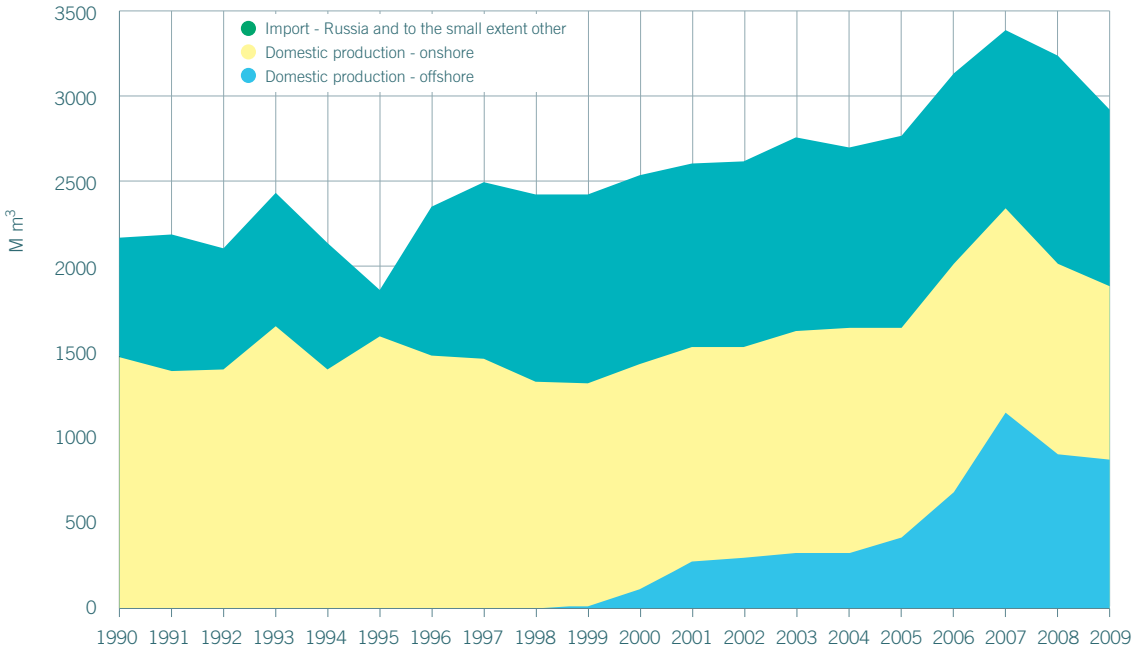
The total quantity[12] of natural gas supplied to the Republic of Croatia in 2009 amounted to 2,945M m^3. The natural gas for the domestic market was supplied mainly from the domesticproduction[13] at the Pannonian and North Adriatic fields (64.5%), and the remaining part from the import[14] from the Russian Federation (34%), and to a smaller extent (1.5%) from the import from Italy, Republic of Slovenia, the Federal Republic of Germany, Republic of France and the Swiss Confederation. The structure of the natural gas supply for a period from 1990 to 2009 is shown in Figure 4.2.1.

12 *The total supplied quantity is a sum of the total domestic production and the total import of natural gas to the Republic of Croatia.*

13 *In 2009, the natural gas in the Republic of Croatia was produced by INA d.d.*

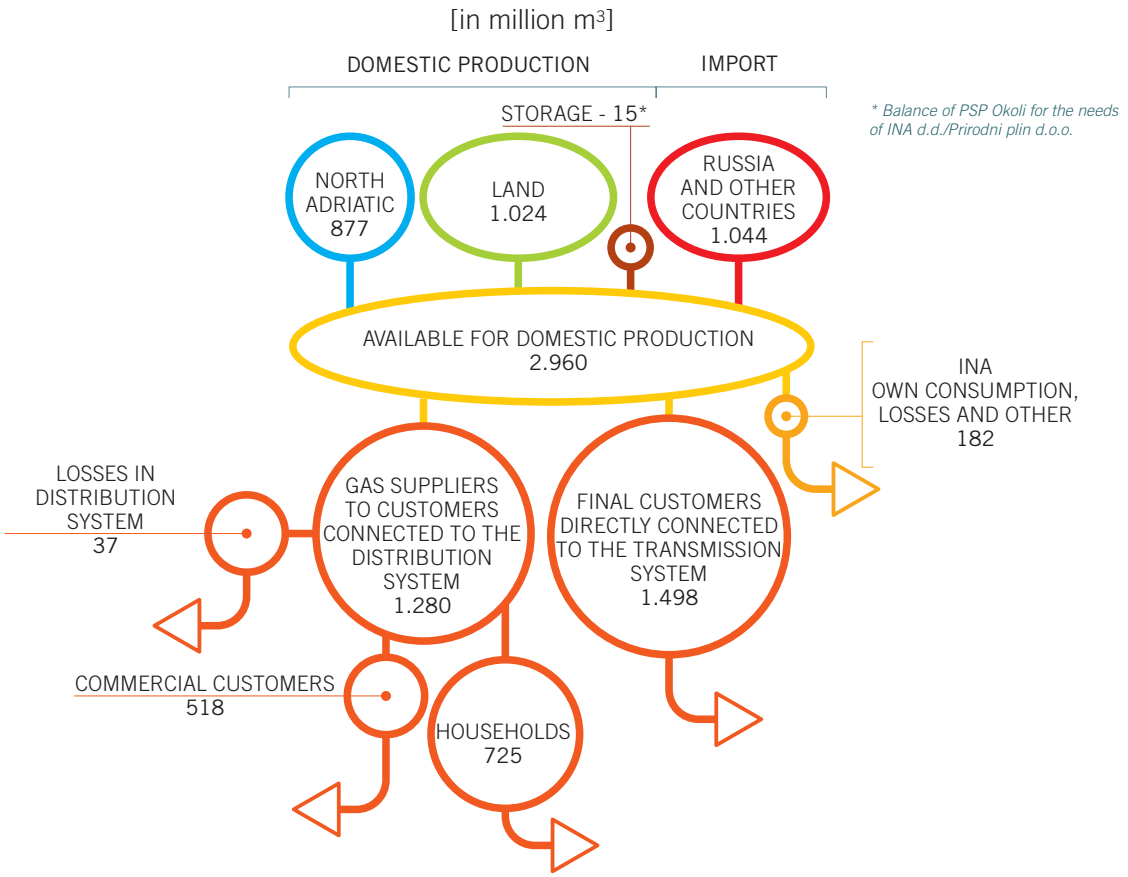
14 *In 2009, the natural gas was imported to the Republic of Croatia by INA d.d. and Prirodni plin d.o.o. which supplied natural gas to the final customers directly connected to the transmission system. In addition, in 2009, INA d.d. and Prirodni plin d.o.o. performed the energy activity of gas supply.*

Figure 4.2.1. Structure of the natural gas supply in the Republic of Croatia from 1990 to 2009



In 2009, the total domestic production of natural gas amounted to 1,901M m³. 877 M m³ were produced at the North Adriatic gas fields and 1,024M m³ at the gas fields in the Pannonian plain. In 2009, 364M m³ were injected in the underground gas storage Okoli[15] and 391M m³ were withdrawn. The import of natural gas was realized from the Russian Federation - 1,000M m3, Italy - 12.6M m³,the Republic of Slovenia - 5.1M m³, the Federal Republic of Germany - 9.6M m³, Republic of France - 4.3M m³ and the Swiss Confederation - 12.6M m³. The natural gas balance in the Republic of Croatia in 2009 is shown in Figure 4.2.2.

Figure 4.2.2. Natural gas balance in the Republic of Croatia in 2009



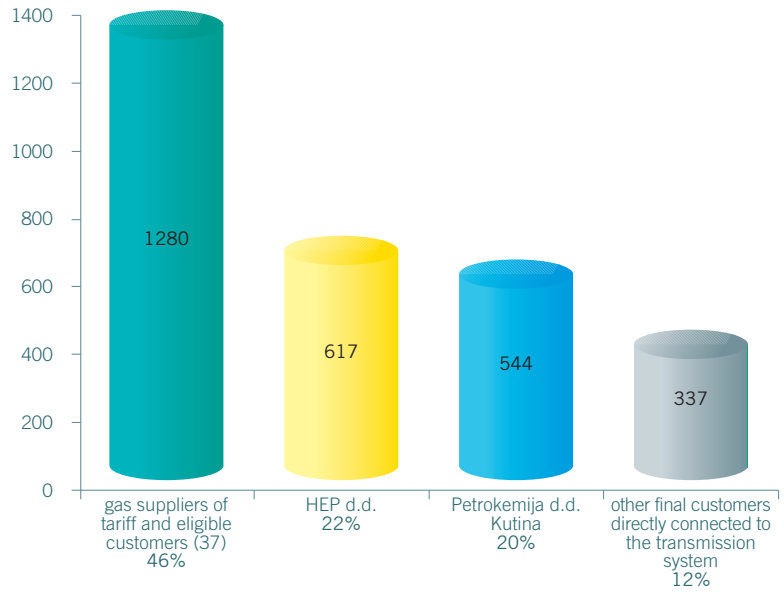
15 *The quantities specified for the underground gas storage Okoli represent the total quantities for users of the gas storage system of INA d.d. and Prirodni plin d.o.o. as well as the quantities for the needs of Geoplin d.o.o., Ljubljana*

4.2.2 Supply and final consumption of the natural gas

In 2009, the natural gas supply in the Republic of Croatia was carried out by 39 energy undertakings[16]. INA d.d. and Prirodni plin d.o.o. delivered natural gas to 37 suppliers of final customers connected to the distribution system and for 29 final customers directly connected to the transmission system. In 2009, the structure of the natural gas delivery from the transmission network was as follows: 1,280M m^3 were delivered[17] to the gas suppliers of final customers connected to the distribution system and 1,498M m^3 were delivered to final customers directly connected to the transmission system, out of which 617M m^3 to HEP-Proizvodnja d.o.o. and 544M m^3 to Petrokemija d.d. from Kutina. The structure of the natural gas consumption in 2009 is shown in Figure 4.2.3.

In 2009, the total quantities of natural gas that gas suppliers provided to final customers connected to the distribution system amounted to 1,243M m^3, out of which 725M m^3 of natural gas were delivered to final customers of the household tariff group which is by 2.7% more compared to the quantities delivered to final customers of the households tariff group in 2008. 518M m^3 of natural gas were delivered to final customers of the commercial tariff group which is by 6.3% lower compared to the delivered quantities to final customers of the commercial tariff group in 2008. Out of the total delivered quantity of natural gas to final customers from the commercial category in 2009, 361M m^3 were delivered to customers with the annual consumption of natural gas lower than or equal to 1M m3, 124M m^3 to customers with the annual consumption of natural gas larger than 1M m^3 and smaller than or equal to 5M m^3 and 33M m^3 to customers with the annual consumption of natural gas larger than 5M m^3.

Figure 4.2.3. Structure of the delivery of natural gas from transmission system in the Republic of Croatia in 2009



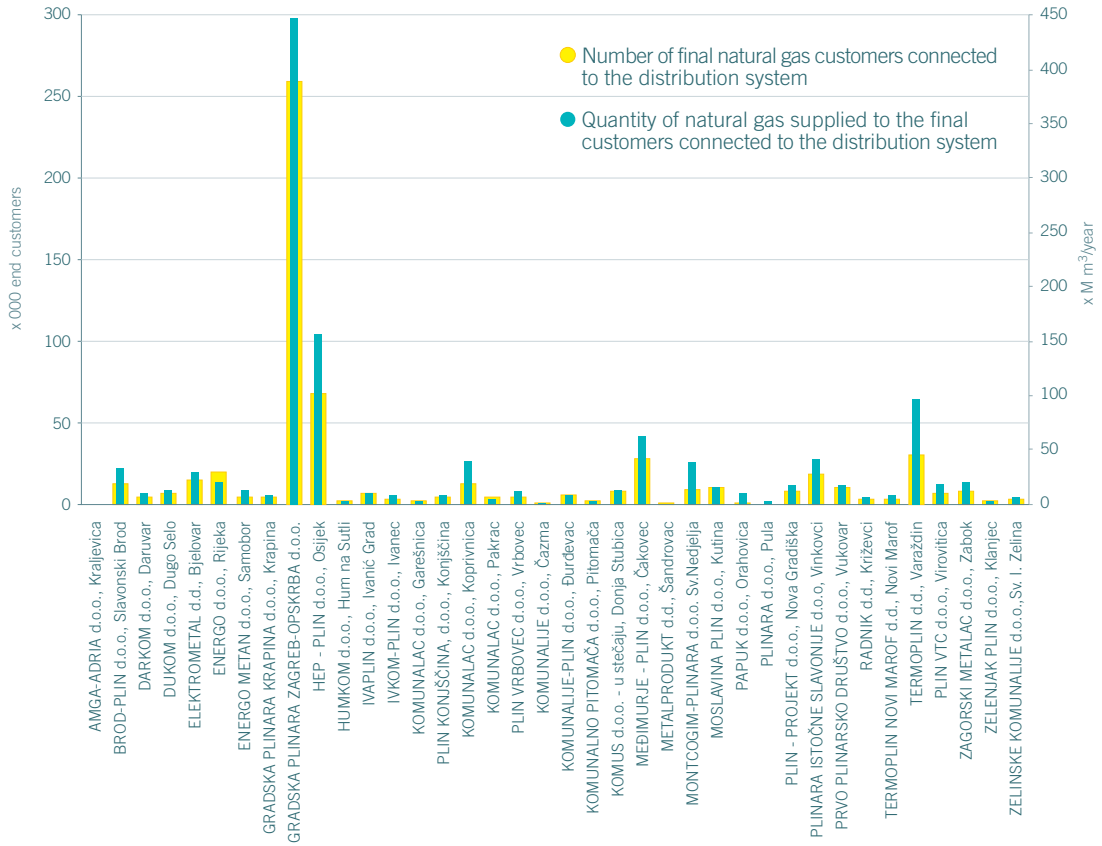
In 2009, the total number of final customers of the natural gas connected to the distribution system amounted to 608,042, out of which 565,961 customers of the household tariff group, which is 3.5% more in comparison to the number of final customers of the household tariff group in 2008 and 42,081 customers from the commercial category, which is by 4.9% more compared to the number of final customers of the commercial tariff group in 2008. Out of the total number of customers from the commercial category in 2009, 42,010 customers realized the annual consumption of natural gas lower than or equal to 1M m^3, 66 customers realized the annual consumption of natural gas larger than 1M m^3 and lower than or equal to 5M m^3 and 5 customers realized annual consumption of natural gas larger than 5M m^3.

The comparison of the number of final customers of natural gas connected to the distribution system and quantities of natural gas delivered to final customers per gas supplier in the Republic of Croatia in 2009 is shown in Figure 4.2.4.

16 37 gas suppliers of final customers connected to the distribution system, INA d.d. and Prirodni plin d.o.o.

17 Out of 1,280M m^3 delivered to the gas suppliers, 1,243M m^3 was delivered to final customers directly connected to the distribution system, with gas losses in distributions systems amounting to 37M m^3.

Figure 4.2.4. Comparison of the number of final customers of natural gas connected to the distribution system and quantities of natural gas delivered to final customers per gas supplier in the Republic of Croatia in 2009



4.2.3 Quality of gas supply

Pursuant to the provisions of the Energy Act, one of the obligatory contents that have to be regulated by the general conditions of energy supply is also monitoring of the security of supply and the quality of energy that the suppliers deliver, i.e. sell to their customers. The Gas Market Act and the General Conditions of Natural Gas Supply define the obligations of gas producers and operators of transmission, distribution, storage and LNG systems with regard to the quality of gas supply, as well as the obligations of gas suppliers, with regard to the publishing and maintaining the agreed quality parameters of gas supply to customers. The General Conditions of Natural Gas Supply prescribe that the quality of gas supply should cover the quality of service, reliability of delivery and the quality of gas. The quality of service represents the stipulated level of service that the transmission system operator, distribution system operator and gas supplier are required to provide to the transmission or distribution system users. The reliability of delivery means the continuity of gas delivery from the transmission or distribution system over a particular period of time expressed through the indicators of the number of delivery interruptions and their duration. Standard gas quality is stipulated under Annex I to the General Conditions of Natural Gas Supply. The gas producers, gas suppliers and gas traders are obliged to ensure the standard quality of the gas delivered to the transmission or the distribution system, as prescribed by the General Conditions of Natural Gas Supply. Furthermore, the General Conditions of Natural Gas Supply prescribe that the transmission system operator, distribution system operator and gas supplier also have the obligation to establish the system for gathering data on the quality of services and publish annual reports on the quality of services in an electronic form. Considering that these obligations require significant preparatory actions, the General Conditions of Natural Gas Supply lay down a transition period[18] for establishing the system for gathering data on the quality of services.

For the purpose of the preparation of the Annual Report for 2009 the Agency gathered data which may be considered informative, since the system for gathering, processing and storing of data has still not been established. These data include the quality of gas supply monitored over several aspects:
- number of requests for connection to the gas network,

[18] *Distribution system operator and transmission system operator are obliged to establish the system for gathering data on the reliability of gas delivery by 31 December 2010.*

- average time for solving requests for connection to the gas network,
- number of complaints of customers/users,
- number of planned and unplanned interruptions in gas delivery and
- total duration of planned and unplanned interruptions in gas delivery.

The data were gathered from the transmission system operator and all distribution system operators. In 2009, the transmission system operator received one request for connection to the transmission network which is still being processed. The distribution system operators received in average[19] 551 requests for connection to the distribution network which represents a decrease in the number of requests in comparison to 2008 by 32.4%. Out of 20,942 received requests, 20,422 were positively solved, i.e. 97.5%. The average time of the request resolving amounted to 14 days which is on the same level as in 2008.

The quality and reliability of gas supply is also defined as the continuity of transmission/distribution/supply of gas within a certain period of time and it is expressed by the number and duration of delivery interruptions. Therefore, data on the number and duration of planned and unplanned interruptions in gas delivery in 2009 were collected from the transmission and distribution system operators.

In the course of 2009, there were 27 planned gas delivery interruptions in the gas transmission network, which represents a 27% reduction of the number of planned delivery interruptions when compared to 2008. In 2008 there were two unplanned delivery interruptions, and no unplanned delivery interruptions were recorded in 2009. The total duration of all delivery interruptions amounted to 123.5 hours in 2009, which represents a 56% decrease when compared to 2008.

In distribution networks, there were on average 100 delivery interruptions[20], which represents a 69.8% decrease in the number of delivery interruptions when compared to 2008, with total average duration of delivery interruptions of 843 hours, which represents a 68.9% decrease in the duration of delivery interruptions when compared to 2008.

The aforementioned indicators and the comparison with the same indicators from 2008 lead us to the conclusion that the quality of service and the quality of natural gas supply improved in 2009.

4.2.4 Customer protection

In 2009, the Customer Complaint Committees within the distribution system operators resolved a total of 426 complaints. 379 complaints got a positive decision, 40 complaints got a negative decision, while on 31 December 2009, seven complaints were in the process of being solved. Pursuant to the provision of Article 9, paragraph 5 of the Act on the Regulation of Energy Activities, the Agency settled disputes regarding carrying out regulated energy activities, particularly with regard to:
- refusal of connection to the transmission system,
- determination of the fee for connection to and use of the transmission system,
- refusal of access to the distribution system,
- conditions of access to the distribution system.

In 2009, the Agency received a total of five gas-related complaints, three of which the Agency was not authorised to act upon, while two complaints fell into its area of competence, one of them referring to the conditions from the energy approval and the other referring to the definition of fee for connection to the distribution system.

4.2.5 Opening of the gas market

The energy sector reform in the Republic of Croatia started in July 2001 when the first package of energy-related legislation was passed that established the main legislative framework for restructuring and reorganization of the energy sector and the carrying out of certain energy activities was regulated.

The Gas Market Act from 2007 foresees the liberalization of the gas market in such way that the gas market should be opened gradually, i.e. since 1 August 2007 the status of an eligible customer was granted to the customers that do not belong to the household category and since 1 August 2008, all households were granted the status of an eligible customer.

Although the gas market in the Republic of Croatia has been completely opened by the regulations since 1 August 2008, not all necessary conditions have been met in order to really open the market. Namely, in

19 All average values specified in this chapter represent arithmetic means.
20 Planned and unplanned delivery interruptions.

order that the market could be completely opened, the full implementation of subordinate legislation from the gas sector is required, as well as the realisation of the essential technical prerequisites of the gas system itself. It is also necessary to realise a new gas procurement route along with the already existing route going via Rogatec in the Republic of Slovenia. In this sense, the interconnection with the Republic of Hungary is planned to be completed by the end of 2010 which will connect the Croatian gas transmission system with the Hungarian one.

Within the total natural gas consumption, the proportion of the natural gas consumption of customers that obtained the status of eligible customer by 31 December 2009 amounts to 100%, which represents a declarative openness of the natural gas market in the Republic of Croatia. The level of gas market openness is shown in Table 4.2.1.

Table 4.2.1. Openness of the gas market in the Republic of Croatia

Criterion/eligibility threshold	Level of declarative openness [%[	Level of real openness [%[		Unbundling of gas transmission from other activities	Unbundling of gas distribution from other activities
		Commercial	Households		
Since 08/2007.: all except households Since 08/2008.: all customers	100	0	0	ownership	accounting and legal

4.2.6 Natural gas prices

Price of the gas procurement

The price of the gas procurement[21] in 2009 was determined pursuant to the Decision on the Price of Gas Procurement for the Gas Supplier of Suppliers of Tariff Customers (Official Gazette "Narodne novine", No. 142/08) which the Government of the Republic of Croatia adopted in December 2008 and which entered into force on 1 January 2009, and it was identical for all tariff customers and amounted to 1.32 HRK/m^3, for the calorific value of gas of 33,338.35 kJ/m^3. In December 2009, the Government of the Republic of Croatia adopted the Decision on the Price of Gas Procurement for the Gas Supplier of Suppliers of Tariff Customers (Official Gazette "Narodne novine", No. 153/09) which entered into force on 1 January 2010, and which determined the price of gas procurement to 1.70 HRK/m^3, for the calorific value of gas[22] of 33,338.35 kJ/m^3. Pursuant to the Decision, an integral part of the price of gas supply amounting to 1.70 HRK/ m3 is also the price for the gas storage.

Prices of natural gas for final customers in the Republic of Croatia

Until 2007, the prices of natural gas for final customers in the Republic of Croatia were determined in the manner prescribed by the Utility Services Act (Official Gazette "Narodne novine", No. 26/03, 82/04 and 172/04). In March 2007, for the first time in the Republic of Croatia, the Agency adopted the Tariff System for Natural Gas Supply, with the Exception of Eligible Customers, without the Amount of Tariff Items (Official Gazette "Narodne novine", No. 34/07 and 47/07). Consequently, the first Decision on the Amount of Tariff Items for Natural Gas Supply with the Exception of Eligible Customers (Official Gazette "Narodne novine", No. 116/07) was adopted for the energy undertaking Energo d.o.o. from Rijeka. By the end of 2007 and in the first half of 2008, proposals regarding the amount of tariff items for gas supply of most gas suppliers were received. In July 2008, the Government of the Republic of Croatia adopted the Decision on the Amount of Tariff Items for Natural Gas Supply with the Exception of Eligible Customers (Official Gazette "Narodne novine", No. 86/08 and 90/08) which determined the amount of tariff items for 30 gas suppliers. In December 2008, the Government of the Republic of Croatia adopted the Decision on the

Amount of Tariff Items for Natural Gas Supply with the Exception of Eligible Customers (Official Gazette "Narodne novine", No.154/08) which came into force on 1 January 2009 and included all 38 gas suppliers on the distribution system. For the first time the Decision laid down the amount of tariff items, that is, the final price only for customers belonging to the household tariff group, while the final price for all customers belonging to the commercial tariff group is market-dependent and non regulated, pursuant to the Energy Act. In addition, due to change of the amount of tariff items for gas transmission, according to the Decision on the Amount of Tariff Items for Natural Gas Transmission for 2009 (Official Gazette "Narodne novine", No. 103/09) adopted in August 2009, the Government of the Republic of Croatia adopted a new Decision on the Amount of Tariff Items for Natural Gas Supply, with Exception of Eligible Customers (Official Gazette "Narodne novine", No. 103/09) which came into force on 1 September 2009. Pursuant to the aforementioned

21 The Gas Market Act defines the gas procurement as the supply of tariff customer suppliers and the suppliers who have the obligation of the public service of gas supply.

22 If the natural gas has different calorific value than 33,338.35 kJ/m^3, the sales price of gas is changed proportionally to the increase or decrease of the actual lower calorific value of the delivered gas.

Decisions in 2009 the average weighted amount of the tariff item for all customers of the household category amounted to 1.971 HRK/m^3, VAT excluded.

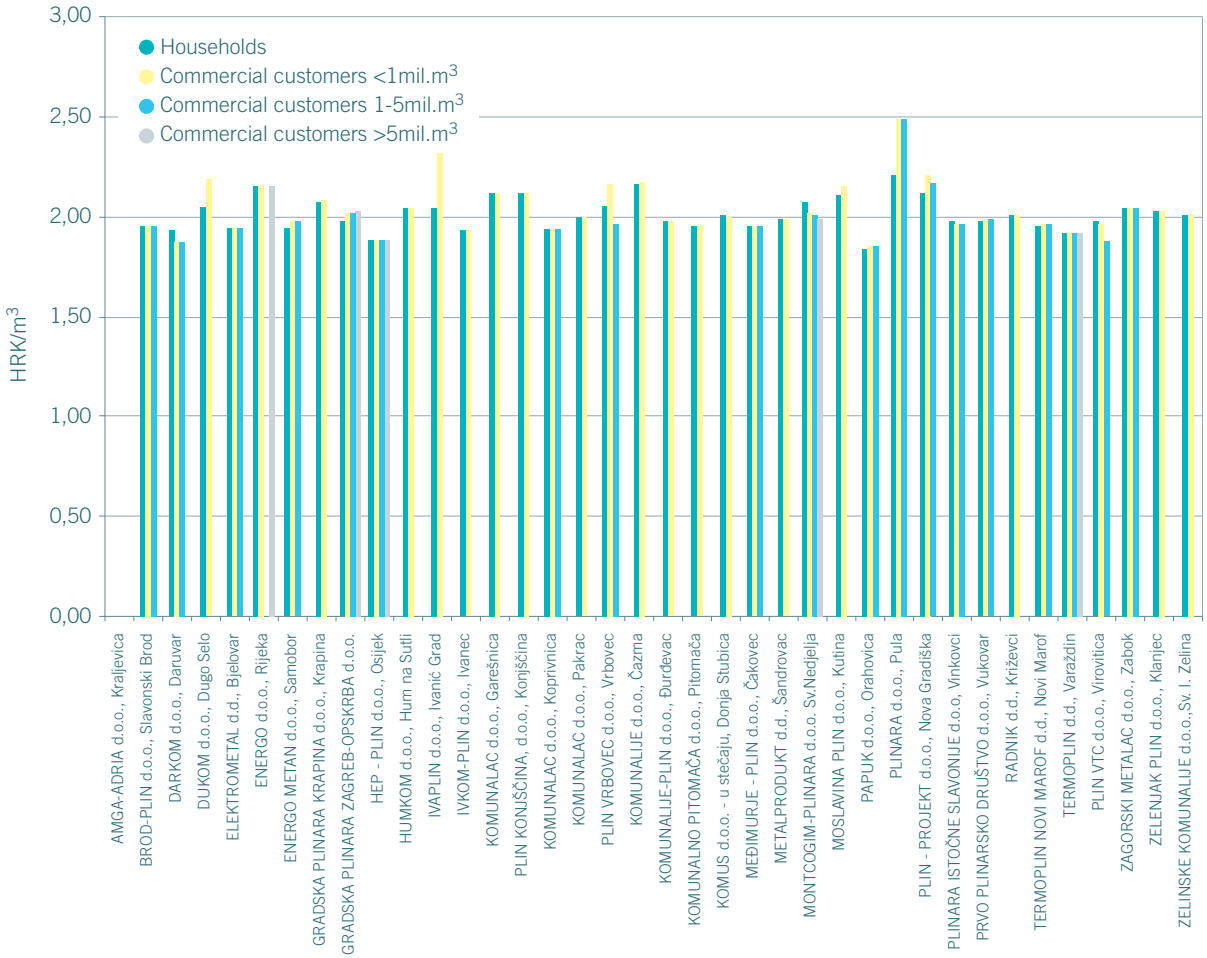
Finally, pursuant to the Decision on Increasing the Price of Gas Procurement from December 2009, valid since 1 January 2010, the Government of the Republic of Croatia adopted the last valid Decision on the Amount of Tariff Items for Natural Gas Supply, with Exception of Eligible Customers (Official Gazette "Narodne novine", No. 158/09), which entered into force on 1 January 2010.

The average retail price of natural gas, VAT excluded, for tariff customers of individual gas suppliers[23] in 2009 ranged from 1.86 to 2.50 HRK/m^3. According to data gathered from all 38 gas suppliers on the distribution system[24], the total average retail price, VAT excluded, for all final customers of all gas suppliers on the distribution system in 2009 amounted to 1.985 HRK/m^3 which represents an increase of the total average retail price by 17.8% in comparison to 2008.

The average retail price of natural gas, VAT excluded[25], for the household tariff group in the Republic of Croatia in 2009 amounted to 1.975 HRK/m^3, which represents an increase of the average retail price for tariff customers of the household tariff group by 17.3% in comparison to 2008. However, pursuant to the Decision on Carrying Out the Special Measure to Mitigate the Natural Gas Price Increase in Households in 2010 (Official Gazette "Narodne novine", No.158/09) the customer pays the retail price increased by 15% in comparison to the prior valid price. The residual part is provided to the natural gas supplier from the 2010 Budget of the Republic of Croatia.

The average retail price of the natural gas, VAT excluded, for final customers of the commercial category with an annual consumption of the natural gas lower than or equal to 1M m^3 in 2009 amounted to 2.006 HRK/m^3, for final customers of the commercial category with an annual consumption of natural gas larger than 1M m^3 and lower than or equal to 5M m^3 amounted to 1.976 HRK/m^3 and for final customer of the commercial category with an annual consumption of natural gas larger than 5M m^3 amounted to 2.009 HRK/m^3. The average retail prices of natural gas for all final customer categories per each gas supplier in the Republic of Croatia in 2008 are shown in Figure 4.2.5.

Figure 4.2.5. Average retail prices of natural gas for final customers per individual gas supplier in the Republic of Croatia in 2009

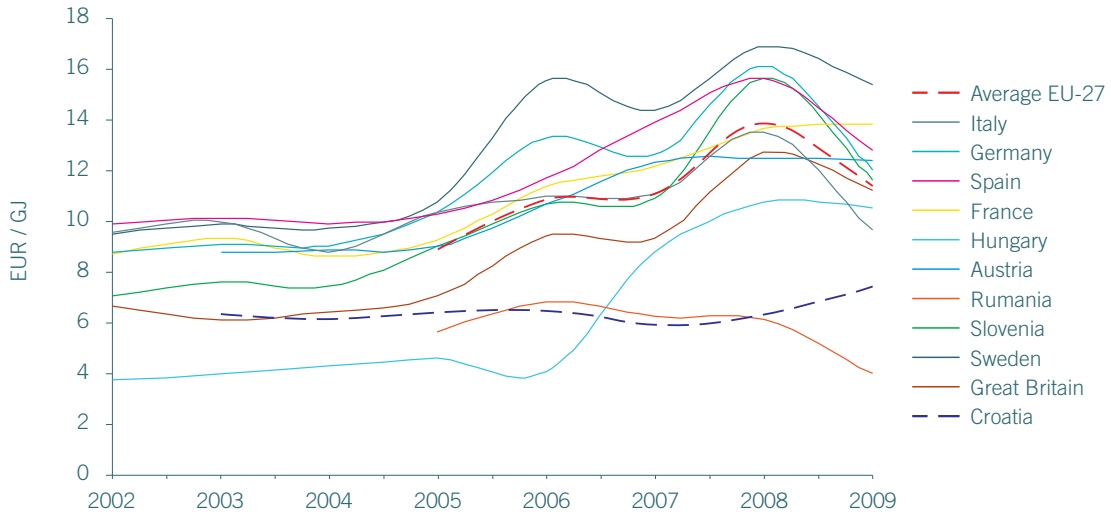


23 *Weighted average per quantities supplied for all categories of final customers of each individual gas supplier.*
24 *Out of 38 gas suppliers, 37 of them supplied the final customers with the natural gas in 2009.*
25 *Average weighted according to the quantities delivered for individual categories of final customers.*

Prices of natural gas for final customers in the European countries

The prices of natural gas for final customers belonging to the household category in the most European countries were constantly rising between 2004 and 2007. The trend of price increase was briefly stopped in 2007 and in some countries, such as the Republic of Romania and the Republic of Croatia, the price of natural gas for households was even reduced. The prices of natural gas increased again in 2008, while in 2009, the most countries of the European Union marked significant reduction in the natural gas price for final customers of the household category. According to the data submitted by Eurostat, the prices of natural gas for final customers of the household category in the Republic of Croatia were slightly increasing until 2007 when the short stagnation of the price was identified, while in 2009 the price was significantly increased. The trend of retail prices of natural gas for households of D2 category, with an annual consumption of natural gas from 20 to 200 GJ, which approximately amounts to the natural gas consumption of between 600 to 6,000 m3/yearly in the respective European countries between 2003 and 2009[26] is shown in Figure 4.2.6.

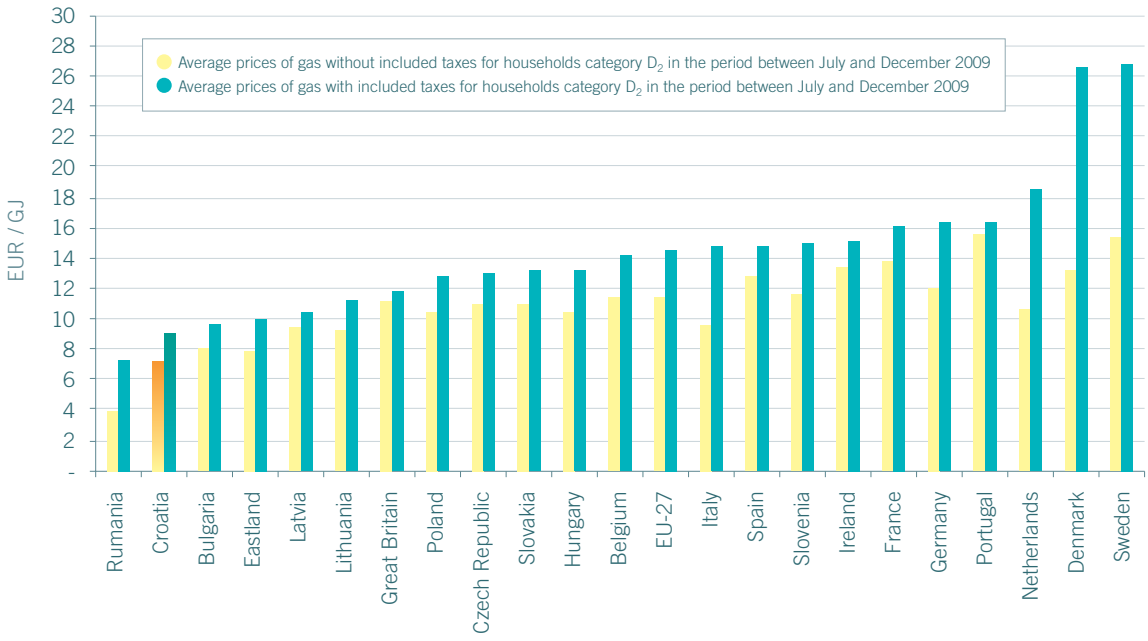
Figure 4.2.6. Trend of retail prices of natural gas for households of the D2 category in the respective European countries from 2003 to 2008 (taxes excluded) [EUR/GJ]



** 2002.-2006 data were calculated according to the old Eurostat methodology, and 2007-2009 data according to the new one*

According to the data provided by Eurostat, the prices of natural gas in the European Union reduced by 17.4% for households of the D2 category from 2008 to 2009.

Figure 4.2.7. Average natural gas prices for households of the D2 category from July to December 2009 (taxes included and excluded)

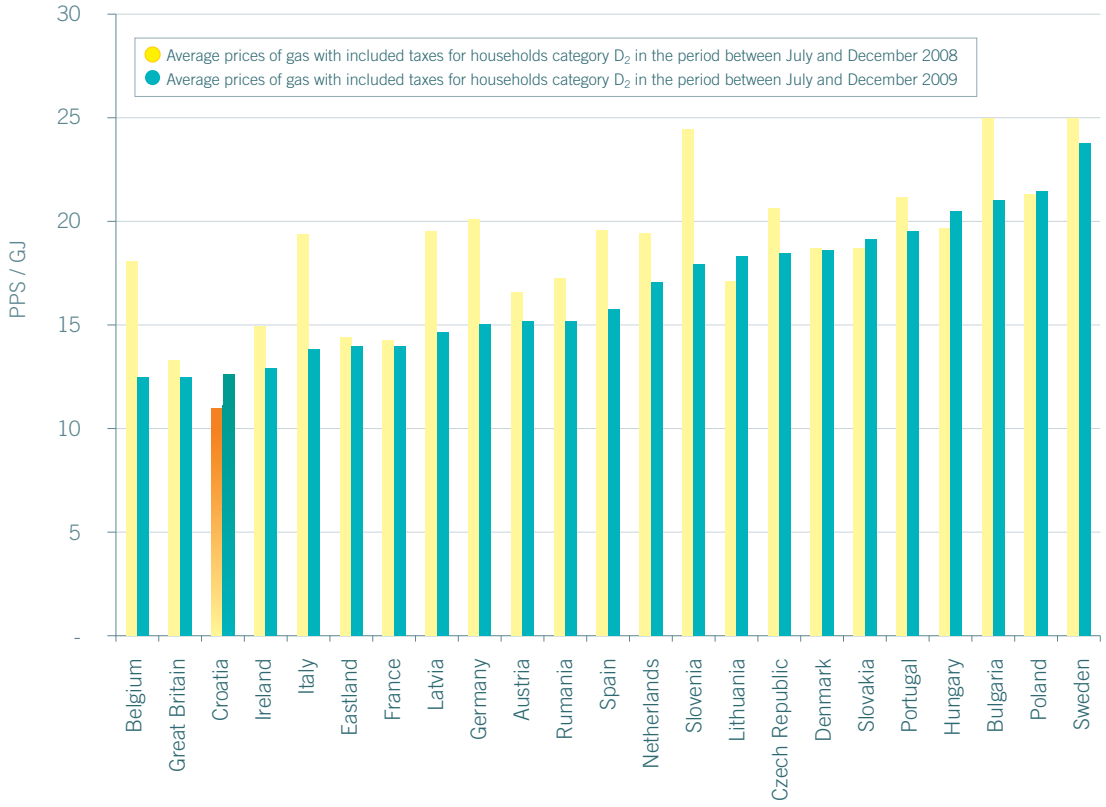


[26] *The prices are calculated as the average value of retail prices from July to December of particular years.*

The average prices of natural gas for households of D2 category in the European countries for the period from July to December 2009, taxes both included and excluded, are shown in Figure 4.2.7. The retail price of the natural gas with taxes included for households of D2 category in H2 of 2009 was the largest in the Kingdom of Sweden (28.86 EUR/GJ) and Kingdom of Denmark (26.77 EUR/GJ), and the lowest in the Republic of Rumania (7.45 EUR/GJ), Republic of Croatia (9.10 EUR/GJ) and Republic of Bulgaria (9.67 EUR/GJ). It is evident that the proportion of taxes in the total price of the natural gas for the aforementioned consumer category hugely varied and was the largest in the Kingdom of Denmark (50.4%), Kingdom of Sweden (42.7%) and Kingdom of Netherlands (42.7%) and the lowest in the United Kingdom of Great Britain and Northern Ireland (4.7%), Republic of Portugal (4.8%) and Republic of Latvia (9%).

The comparison of the European retail prices of natural gas with taxes included for households of D2 category for the period from July to December 2008 and for the period from July to December 2009 is shown in Figure 4.2.8. The international unit PPS/GJ[27] has been used as the price unit eliminating the differences in prices of goods/services in respective countries. PPS (purchasing power standards) represent units that allow purchasing of the same quantities of goods/services in all countries. The presented comparison shows that, taking into consideration the purchasing power and standards in the respective countries, the price of natural gas for household category D2 in the second half of 2009 was at the highest level in the Kingdom of Sweden, in the Republic of Poland and in the Republic of Bulgaria and at the lowest level in the Kingdom of Belgium, in the United Kingdom of Great Britain and Northern Ireland and in the Republic of Croatia.

Figure 4.2.8. Comparison of average natural gas prices for households of the D2 category to the price of goods/services in the European countries (taxes included) from July to December 2008 and from July to December 2009.

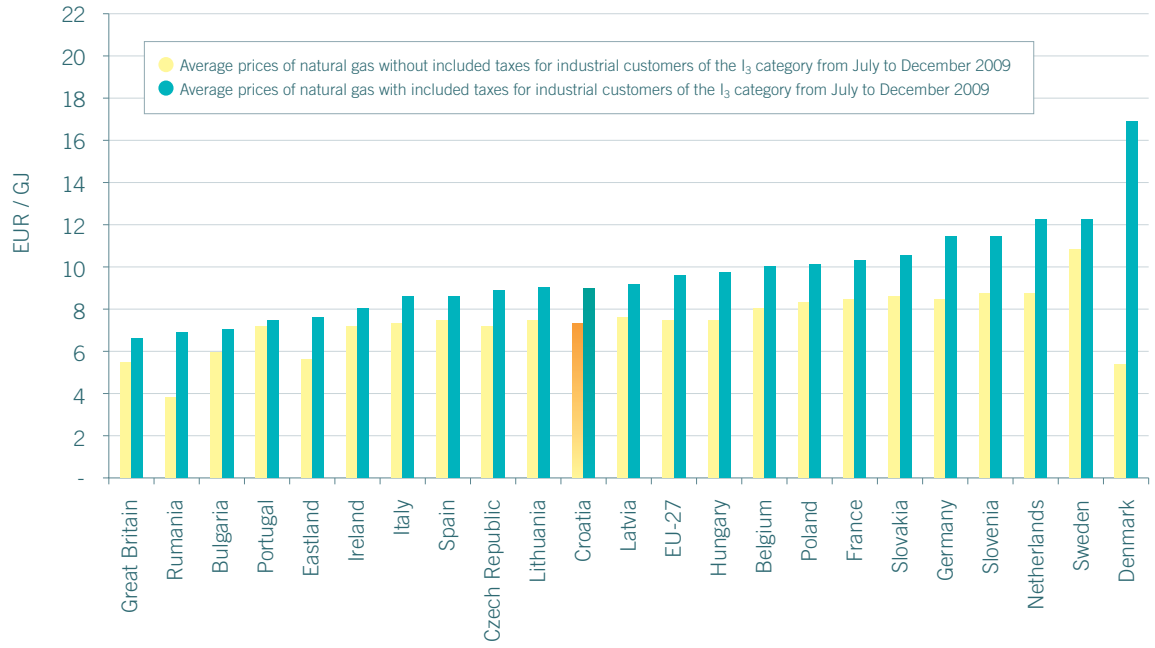


According to the Eurostat's data for the period from 2008 to 2009, the natural gas prices in the European Union, taxes included, reduced by 25.1% for industry customers of the I3 category with an annual natural gas consumption from 10,000 to 100,000 GJ which approximately matches the natural gas consumption of 300,000 to 3,000,000 m3/yearly.

Average prices of natural gas for industry consumers of the I3 category in the European countries from July to December 2009, taxes both included and excluded, are shown in Figure 4.2.9.

27 *PPS (purchasing power standards) represent a unit with which it is possible to buy the same quantity of goods/services in all countries.*

Figure 4.2.9. Average prices of natural gas for industrial customers of the I3 category from July to December 2009 (taxes included and excluded)



In H2 of 2009, the largest retail price of the natural gas for industrial consumers of I3 category, with taxes included, was identified in the Kingdom of Denmark (16.94 EUR/GJ) and the Kingdom of Sweden (15.79 EUR/GJ) and the lowest in the United Kingdom of Great Britain and Northern Ireland (6.69 EUR/GJ), the Republic of Rumania (7.06 EUR/GJ) and the Republic of Bulgaria (7.15 EUR/GJ). It is evident that the percentage of taxes in the total price of natural gas for the aforementioned consumer category varied widely. The largest percentage was in the Kingdom of Denmark (67.8%), the Republic of Rumania (45.2%) and the Kingdom of Sweden (31.1%) and the lowest in the Republic of Portugal (4.9%), Ireland (9.5%) and the Kingdom of Spain (13.7%).

REGULATED ACTIVITIES AND MARKET DEVELOPMENT FOR OIL AND OIL DERIVATIVES

5. Regulated activities and market development for oil and oil derivatives

5.1 Regulated activities

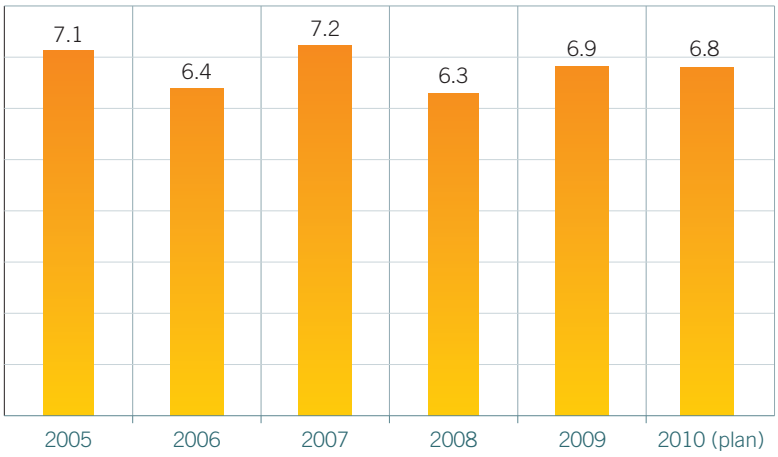
5.1.1 Transportation of oil through oil pipelines

Jadranski naftovod d.d. (hereinafter referred to as: JANAF d.d.) performs the energy activity of oil transportation through oil pipelines in the Republic of Croatia. In compliance with the Act on Oil and Oil Derivatives Market, JANAF d.d. undertakes to impartially and transparently make an access to transportation system possible for legal and natural persons, which is stipulated in detail by the Technical Conditions of Access to Transportation Capacities of JANAF (Gazette "Glasilo VRED-a" No. 3-4/03). The oil pipeline system of JANAF d.d. is used for oil import by tankers through the sea terminal in Omišalj on the island of Krk, for transportation of oil through pipelines to the oil refineries in Rijeka and Sisak as well as for the requirements of refineries in Bosnia and Herzegovina, the Republic of Serbia and the Republic of Hungary. The oil pipeline system JANAF d.d. is shown in Figure 5.1.1. Furthermore, the oil pipeline system can be used for oil import by land.

Figure 5.1.1. JANAF d.d.´s oil pipeline system

In 2009, the total of 6.9 Mil.t of crude oil was transported through the oil pipeline system, which was by 10% more than in the previous year. The figure 5.1.2. shows the quantities of oil transported in the period from 2005 to 2009 and the quantities planned for 2010.

Figure 5.1.2. JANAF´s oil pipeline system - transported oil quantities [in Mil.t = million tons]



Other activities of JANAF d.d. regarding the oil pipeline system development in 2009 include modernization of power system, a new surveillance and management system, pipeline and tank restructuring as well as inspection of oil pipeline section Omišalj-Sisak by using the so-called intelligent pig.

The highest price level for oil transportation through pipeline is determined by the Tariff System for Oil Transportation by Oil Pipeline (Official Gazette "Narodne novine" No. 39/07), adopted by the Croatian Energy Regulatory Agency.

The Tariff System governs as follows:
- methods and criteria for establishment of tariffs for oil transportation;
- methodology characteristics of calculation of the highest tariff amounts for oil transportation through oil pipelines;
- categories of users of oil transportation service through oil pipelines; and
- data, documents, and other materials used to determine the costs of oil transportation through pipelines, total revenue of energy undertaking for oil transportation through oil pipelines and tariffs for oil transportation through oil pipelines.

The methodology of calculation of the highest tariff amount for oil transportation through oil pipeline implies covering total operating costs of the oil transportation company, investment provision for the development of oil pipeline transportation system, provision of return on assets, i.e. investment into oil pipeline transportation system and maintenance of the transportation system´s safety and environmental protection.

Tariff amounts for oil transportation through JANAF d.d. oil pipelines for respective user categories are determined by the Decision on the Amounts of Tariffs for Oil Transportation by Oil Pipeline (Official Gazette "Narodne novine" No. 57/07).

The tariff for users of the R1 category, which use oil pipelines for oil transportation through oil pipeline up to 20 km long and coastal terminals, amounts to HRK 19.96 per ton.

The tariff for users of the R2 category, who use oil pipelines for oil transportation through oil pipeline over 20 km long, coastal and land terminals, amounts to HRK 24.29 per ton per 100 km.

5.2 Development of oil and oil derivatives market

5.2.1 Storage of oil and oil derivatives

In 2009, the energy activity regarding oil and oil derivatives storage was carried out by 23 energy undertakings. This activity involves duly storage in a prescribed manner, on special premises for own purposes (producers, users, and transportation companies) for the purpose of supply security and/or trading. The price of oil and oil derivatives storage is not regulated, i.e. it is determined based on market principles. According to data delivered by energy undertakings, the total storage capacities available in 2009 amounted to 1.3 million m3 (storage capacities within oil refineries of INA d.d. excluded). A geographical position of major oil and oil derivatives storage facilities in the Republic of Croatia is shown in Figure 5.2.1., according to the type of goods stored in a single storage facility.

Figure 5.2.1. Geographical position of oil and oil derivatives storage facilities according to the type of goods stored and the total storage capacities in 2009

The major events in 2009 concerning oil and oil derivatives storage capacities development involve commencing construction of additional tanks for crude oil storage at Sisak Terminal of Janaf d.d. In addition, Crodux plin d.o.o. in Sveti Križ Začretje set a liquefied petroleum gas terminal into operation.

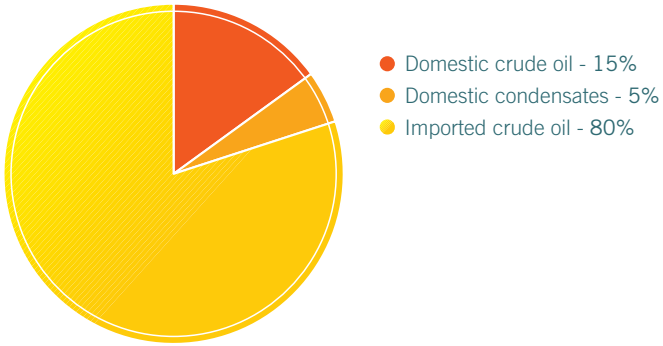
5.2.2 Production and trading of oil derivatives

Production of oil derivatives

The energy activity regarding oil derivatives production in the Republic of Croatia is carried out by INA d.d.[28] The oil derivatives produced in the Rijeka and Sisak oil refineries as well as at Etan, Gas Treatment Plant in Ivanić Grad, include motor as well as industry and household fuels. Crude oil from import and crude oil and condensates produced in domestic oil and gas fields are used as raw material for oil derivatives production. The structure of raw materials for refinery processing in 2009 is shown in Figure 5.2.2.

[28] *In addition to INA d.d., the production of oil derivatives is carried out by Modibit d.o.o. which produces bitumen.*

Figure 5.2.2. The structure of raw material for refinery processing in 2009



The total production of oil derivatives in 2009 amounted to 4.5 million tons of oil derivatives, which is 8% more than in 2008. The total quantity of oil derivatives produced in the period from 2006 to 2009 is shown in Figure 5.2.3.

Figure 5.2.3. Quantity of oil derivatives produced in the period from 2006 to 2009 [Mt]

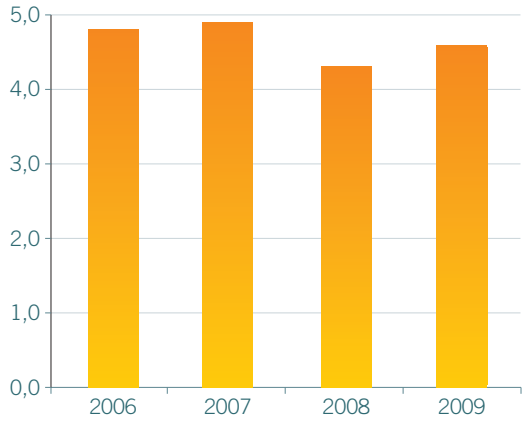
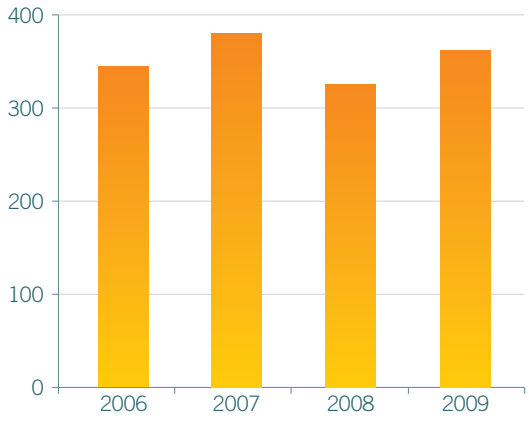


Figure 5.2.4. Quantity of LPG produced in the period from 2006 to 2009 [000 t]



At the beginning of 2010, INA d.d. started introducing fuels which comply with EURO V quality requirements and which are produced in its own refineries, which is one of the notable events worth mentioning. Within modernization of the Rijeka Oil Refinery, the activities regarding building of the plant for hydrocracking/hydrodesulphurization and plant for extraction of sulphur are underway. The quantities of liquefied petroleum gas produced in the period from 2006 to 2009 are shown separately in Figure 5.2.4.

Oil derivatives trading

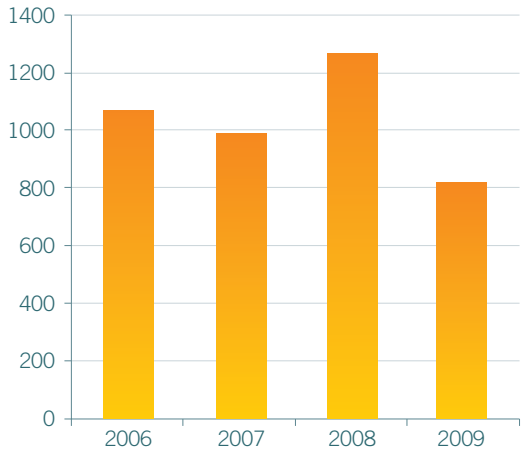
Oil derivatives trading involves energy activities as follows:
- oil derivatives wholesale trading,
- oil derivatives retail trading,
- LPG wholesale trading and
- LPG retail trading.

A license by the Agency is to be issued for oil derivatives and LPG wholesale trading activities. In addition, it is necessary to obtain an approval by the Ministry for the purpose of performing the activities mentioned, as stipulated by the Regulation on Conditions for Wholesale and Foreign Trading of Particular Goods (Official Gazette "Narodne Novine" No. 58/09 and 27/10).

In 2009, oil derivatives wholesale trading was carried out by twenty energy undertakings, whereas the LPG wholesale trading was carried out by nine energy undertakings. The price of oil derivatives is not regulated, i.e. it is determined based on market principles. However, the highest price level for oil derivatives is determined by the Ordinance on Determination of Prices of Oil Derivatives (Official Gazette "Narodne novine" No. 46/10), and the highest price level for LPG is determined by the Ordinance on Determination of Prices of LPG (Official Gazette "Narodne novine" No. 52/09 and 13/10). Apart from oil derivatives from domestic

production, the imported oil derivatives take a significant share in the market of the Republic of Croatia. According to data delivered by energy undertakings in 2009, a total of 0.8 million tons of oil derivatives was imported. A comparison of the quantities of oil derivatives imported in the period from 2006 to 2009 is shown in Figure 5.2.5.

Figure 5.2.5. Oil derivatives import in the period from 2006 to 2009 [000 t]

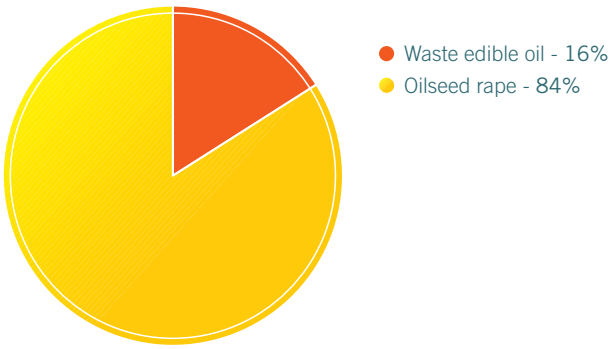


5.3 Biofuel market development

As energy activities within the biofuel sector, the following activities are defined:
- biofuel production,
- biofuel wholesale trading and
- biofuel storage.

A license by the Agency is to be issued for the purpose of performance of the above-mentioned energy activities, except for the production of biofuel which is exclusively produced for one´s own purposes, or the energy is produced up to 1 TJ p.a., for biofuel retail trading and biofuel storage exclusively for one´s own purposes. Apart from license by the Agency, for performance of biodiesel wholesale trading, it is necessary to obtain an approval by the Ministry, as stipulated by the Regulation on Conditions for Wholesale and Foreign Trading of Particular Goods (Official Gazette "Narodne novine" No. 58/09 and 27/10).Two energy undertakings obtained a license for the purpose of performing the above-mentioned energy activities. They produced and distributed the total of 4,040 tons of biodiesel in 2009, and they have storage capacities available in the total amount of 1,100 m^3. The total capacity of biofuel production in 2009 amounts to 124 tons per day. The structure of raw material in biofuel[29] production is shown in Figure 5.3.1.

Figure 5.3.1. The structure of raw material in biodiesel production in 2009



[29] *In 2009, only biodiesel*

THERMAL ENERGY SECTOR

6. Thermal energy sector

6.1 Thermal energy sector in general

Energy undertakings for generation, distribution and thermal energy supply in the Republic of Croatia provide heating services and services regarding preparation of sanitary hot water for approx. 154,000 thermal energy users. Households represent more than 95% of the total number of thermal energy users from centralized thermal energy systems. Thermal energy supply from centralized thermal energy systems is available in major Croatian towns and thermal energy is generated either in cogeneration thermal power plants for larger parts of the town or heating plants for particular residential areas. It is distributed through hot water/warm water network to the facilities where the energy is distributed in thermal stations to the consumers. Centralized thermal systems with cogeneration thermal power plants are solely available in Zagreb, Osijek and Sisak where - in addition to the thermal energy intended for heating purposes - technological steam for industrial purposes is generated. Every year 2 to 2,5 TWh of thermal energy is distributed to households through distribution thermal networks whose total length amounts to approx. 430 km.

More than 11% of the total number of households in the Republic of Croatia is connected to the district heating systems and approx. 15% of the total energy used for heating of households and preparation of sanitary hot water derives from centralized heating systems. Basic technical data on district heating system in major Croatian towns are given in Table 6.1.1., whereas the number of thermal energy users of centralized thermal energy systems is given in Figure 6.1.1.

Figure 6.1.1. Number of thermal energy customers on the centralized thermal energy system

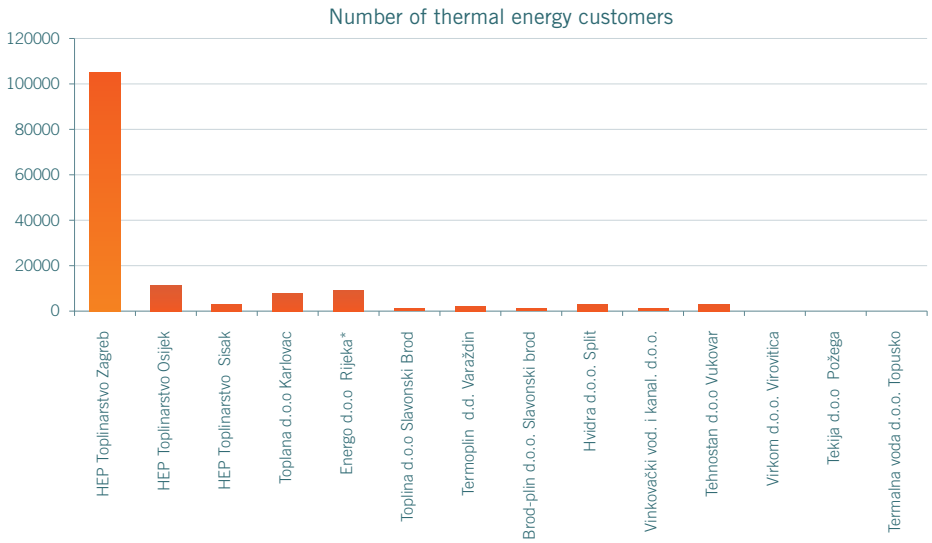


Table 6.1.1. Data on energy undertakings within the thermal energy sector of the Republic of Croatia

ENERGY UNDERTAKING	Number of customers	Network length [km]	Total installed power [MWt]	Annualy delivered [GWh/a year]	Heated area [m^2]	Fuel*
1 HEP Toplinarstvo d.o.o.**	122054	361.1	2294	1728.8	9458910	PP, LUEL, LU, nte***
Zagreb	106312	258.8	1766	1536.0	8063477	PP, LUEL, LU, nte
Osijek	11689	54.0	336	185.3	1132196	PP, LU, nte
Sisak	4053	21.3	192	61.5	263237	LU, nte
2 Energo d.o.o., Rijeka	9619	16.04	102.16	82.98	580685	PP, LUEL, LU, MP
3 Toplana d.o.o., Karlovac	8140	21.0	117.62	77.3	534749	PP, LU, LUEL
4 Tehnostan d.o.o., Vukovar	3205	7.2	49.35	28.4	180702	PP, LU, LUEL
5 Termoplin d.d., Varaždin	2835	2.1	40.85	25.0	159917	PP
6 Hvidra d.o.o., Split****	3300	8.5	31	14.7	222165	LUEL, LU
7 Brod-plin d.o.o., Slavonski Brod	3948	4.5	49.79	46.17	205478	PP
8 Vinkovački vod. i kanal. d.o.o., Vinkovci	1698	1.6	16.99	12.4	88958	PP, LU, LUEL
9 Virkom d.o.o., Virovitica	481	0.9	9.8	4.3	30152	PP
10 Inas-Invest d.o.o., Zagreb****	18	-	-	4.8	32000	-
11 Energoremont d.d., Karlovac****	5	0.0	37	6.6	28822	-
12 Tekija d.o.o., Požega	463	0.8	7.2	3.1	22067	PP
13 Termalna voda d.o.o., Topusko	205	1.3	5.3	7.8	37631	geo
14 Dioki d.d., Zagreb****	4	0.0	49	7.5	0	-
15 Zračna luka Zagreb d.o.o., Zagreb****	2	2.0	12	1.9	0	PP, LU
TOTAL	155994	428	2827	2107	11589537	

** PP - natural gas, LU Đfuel oil, LUEL - extra light fuel oil, MP - mixed gas, nte - procurement of thermal energy, geo - geothermal energy*
*** In 2009, HEP Toplinarstvo d.o.o. delivered 596,776 tons of technological steam (partly used for heating)*
**** In 2009, HEP Toplinarstvo d.o.o. procured the thermal energy for the centralized thermal energy system from HEP Proizvodnja d.o.o. (calorific value: 1,675,870.00 MWh, technological steam: 840,492.60 t)*
***** Data for 2008*

Energy undertakings engaged in generation, distribution and thermal energy supply are owned by local self-government units, by the state or are privately owned. In addition to the mentioned activities, these companies mainly perform gas distribution activity and other utility services.

Energy undertaking HEP-Toplinarstvo d.o.o., Zagreb, which supplies more than 80% of the total number of thermal energy buyers as well as Grijanje Varaždin d.o.o., Varaždin, Toplana d.o.o., Karlovac and Termalna voda d.o.o., Topusko exclusively perform generation, distribution and thermal energy supply activities.

Table 6.1.2. shows data on ownership and business activities of energy undertakings within the thermal energy sector.

Table 6.1.2. Ownership and the activities of energy undertakings within the thermal energy sector

Energy undertaking / headquarters	Ownership	Business activity
ENERGO d.o.o. / Rijeka	Private / Municipal	Generation, distribution, gas and thermal energy supply
GRIJANJE d.o.o. / Varaždin	Private / Municipal	Generation, distribution, gas and thermal energy supply
BROD-PLIN d.o.o. / Slavonski Brod	Municipal	Generation, distribution, gas and thermal energy supply
PLIN VTC d.o.o. / Virovitica	Municipal	Generation, distribution, gas and thermal energy supply, gas distribution, gas supply
TEHNOSTAN d.o.o. / Vukovar	Municipal	Generation, distribution and thermal energy supply, chimney sweeping craft, property management
VINKOVAČKI VODOVOD I KANALIZACIJA d.o.o. / Vinkovci	Municipal	Collection, purification and distribution of water, drainage, water and sewage network construction, thermal energy supply, cemetery
HVIDRA d.o.o / Split	Private	Generation, distribution and thermal energy supply, parking, towing-away of illegally parked cars, garages, car wash
TEKIJA d.o.o. / Požega	Municipal	Collection, purification and distribution of water, drainage, waste collection and disposal, thermal energy supply, cemetery, parking
HEP TOPLINARSTVO d.o.o. / Zagreb	State	Generation, distribution and thermal energy supply
TOPLANA d.o.o. / Karlovac	Municipal	Generation, distribution and thermal energy supply
IVAKOP d.o.o. / Ivanić Grad	Municipal	Generation, distribution and thermal energy supply, water supply, waste water drainage and purification, maintaining cleanliness, municipal waste disposal, public open space maintenance
TERMALNA VODA d.o.o. / Topusko	Municipal	Generation, distribution and thermal energy supply

6.2 Legislative framework for thermal energy sector

The legislative framework for energy activities regarding generation, distribution and thermal energy supply consists of: The Energy Act, the Act on Regulation of Energy Activities and the Act on Generation, Distribution and Thermal Energy Supply. The performance of energy activities regarding generation, distribution and thermal energy supply is governed by the following subordinate legislation as well: The General Terms and Conditions for Thermal Energy Supply (Official Gazette "Narodne novine" No. 129/06), The Tariff System for Generation, Distribution and Thermal Energy Supply Services - without the amount of tariff items (Official Gazette "Narodne novine" No. 65/07, 154/08, 22/10, 46/10 and 50/10), the Decision on the Amount of Tariff Items within the Tariff System for Energy Activities regarding generation, distribution and thermal energy supply (Official Gazette "Narodne novine" No. 115/07, 127/07 and 154/08), as well as the Ordinance on the Method of Allocation and Calculation of Costs for Thermal Energy Supplied (Official Gazette "Narodne novine" No. 139/08 and 18/09).

The Act on Generation, Distribution and Thermal Energy Supply stipulates as follows: the conditions and method of performing generation, distribution and thermal energy supply activities, the rights and obligations of energy undertakings performing the above-mentioned activities, the rights and obligations of thermal energy users, the provision of means for performing those activities, financing the construction of facilities and plants for generation and distribution of thermal energy, monitoring the implementation of the Act and penalties for perpetrators of offences defined by the Act.

The above-mentioned Act stipulates that the generation of thermal energy for eligible users and thermal energy supply to eligible users is to be carried out in compliance with the rules governing market relations. Energy activities related to the generation of thermal energy for tariff customers and thermal energy supply to tariff customers are carried out in accordance with the regulations.

Energy activity regarding the distribution of thermal energy is carried out as a public service. The local self-government unit that has energy facilities available on its distribution territory for the purpose of distribution of thermal energy is obliged to permanently provide energy activity regarding the distribution of thermal energy. The local self-government unit and energy undertaking for the distribution of thermal energy are obliged to provide quality performance of energy activity in terms of distribution of thermal energy in compliance with the principles of sustainable development, to provide maintenance of energy facilities in working order and to provide transparency of operation.

Energy activity in terms of distribution of thermal energy is carried out based upon a concession or a contract on performing the activities. The right to carry out energy activities in terms of distribution of thermal energy and the right to build power stations for distribution of thermal energy can be obtained through concession.

General Terms and Conditions for Thermal Energy Supply stipulate energy and technical conditions as well as economic relationships among the distributor, supplier, generator and thermal energy user. General Terms and Conditions for Thermal Energy Supply govern as follows: the procedure of issuing prior thermal energy approval and providing conditions for connection to the distribution network, the procedure of issuing thermal energy approval, the conditions for connection and delivery and supply of thermal energy and distribution network usage, follow-up on supply and quality reliability/safety, mutual contractual relationships among the thermal energy distributors, network users, the obligations and responsibilities of thermal energy distributors and network users, conditions in terms of measurement, calculation and charging for the delivered thermal energy, conditions regarding implementation of limitation or stoppage in the delivery of thermal energy as well as procedures for determining and calculating unauthorized thermal energy consumption.

The Tariff System for Services Regarding Energy Activities in Terms of Generation, Distribution and Thermal Energy Supply - without the amount of tariff items - determines a methodology of the calculation of tariff items for energy activities in terms of thermal energy generation, distribution and supply, with the exception of eligible users, thermal energy distribution and supply, with the exception of eligible users, the matrix of the tariff models and elements for determining a regulated maximum revenue. It stipulates the tables for cost follow-up and formula for calculating the total revenue by means of tariff items, the procedure for submitting proposals for determining the amount of tariff items and the data authenticity statement form.

The Decision on the Amount of Tariff Items in the Tariff System for Services Regarding Energy Activities in Terms of Generation, Distribution and Thermal Energy Supply (Official Gazette "Narodne novine", No. 115/07 and 127/07) in the towns of Zagreb, Osijek, Sisak, Velika Gorica, Zaprešić, Samobor, Karlovac, Slavonski Brod, Split, Varaždin, Rijeka, Virovitica, Vinkovci and Vukovar, energy undertakings: HEP Toplinarstvo d.o.o., Zagreb, Toplana d.o.o., Karlovac, Toplina d.o.o., Slavonski Brod, Brod-Plin d.o.o., Slavonski Brod, HVIDRA d.o.o., Split, Termoplin d.d., Varaždin, Energo d.o.o., Rijeka, Virkom d.o.o., Virovitica, Vinkovački vodovod i kanalizacija d.o.o., Vinkovci, and Tehnostan d.o.o., Vukovar stipulated the amount of tariff items in the Tariff system for services regarding energy activities in terms of generation, distribution and thermal energy supply and was valid until December 31, 2008.

The Decision on the Amount of Tariff Items in the Tariff System for Services Regarding Energy Activities in Terms of Generation, Distribution and Thermal Energy Supply (Official Gazette "Narodne novine" No. 154/08) in the towns of Zagreb, Osijek, Sisak, Velika Gorica, Zaprešić, Samobor, Karlovac, Slavonski Brod, Split, Varaždin, Rijeka, Virovitica, Vinkovci, Vukovar i Požega, energy undertakings: HEP Toplinarstvo d.o.o., Zagreb, Toplana d.o.o., Karlovac, HVIDRA d.o.o., Split, Termoplin d.d., Varaždin, Energo d.o.o., Rijeka, Virkom d.o.o., Virovitica, Vinkovački vodovod i kanalizacija d.o.o., Vinkovci, Tehnostan d.o.o., Vukovar, Brod plin d.o.o., Slavonski Brod and Tekija d.o.o., Požega stipulated the amount of tariff items in the Tariff system for services regarding energy activities in terms of generation, distribution and thermal energy supply which has been valid since January 1, 2009. However, at the end of 2009 several energy undertakings performing energy activities in terms of generation, distribution and supply of thermal energy submitted a request for an increase in the amount of tariff items. In April 2010, following the implementation of procedure stipulated, the Agency issued the opinion about the respective requests. The basic reason for submitting the request for the increase in the amount of tariff items represents the increase in the price of natural gas, which is used as fuel in generating thermal energy and has a significant impact on the costs of thermal energy.

The Ordinance on the Allocation and Calculation of Costs for Supplied Thermal Energy, which entered into force in November, 2008, stipulates the installation of devices for local distribution of the supplied thermal energy, devices for thermal emission regulation and devices for thermal energy consumption measurement in facilities that were built prior to the enforcement of the Act on Generation, Distribution and Thermal Energy Supply. This Ordinance stipulates the models for allocation and calculation of costs for the thermal energy supplied on the shared thermal energy meter to thermal energy users, who are separate facility unit owners, representing an independent utilization unit and who register the thermal energy via devices for local distribution of the thermal energy supplied or measure the thermal energy via separate device for thermal energy consumption measurement.

6.3 Thermal energy prices

The prices of thermal energy, which were valid during 2007 and for the most part during 2008, were determined in line with the procedure and in a manner stipulated by the Utility Services Act. Pursuant to the provisions of this Act, the price of utility service in terms of thermal energy supply and the mode of payment were determined by service provider who was obligated to obtain a prior approval from the local self-government municipality unit on the territory covered by this service. This resulted in various prices and methods of calculation and collection for the thermal energy supplied in the towns in the Republic of Croatia. Since the quantity of the thermal energy supplied was not measured by most energy undertakings, the customers usually paid a certain fixed monthly amount per square meter of residential area (HRK/m^2).

In 2005, the Act on Generation, Distribution and Thermal Energy Supply stipulated that energy undertakings responsible for thermal energy distribution install devices for thermal energy flow regulation and devices for measurement of thermal energy consumption at all thermal stations at their own expense within two years as of the date of the enactment of the Act. On April 9, 2007, the period in which each energy undertaking competent for thermal energy distribution in the Republic of Croatia was obliged to install devices for thermal energy flow regulation and devices for measurement of thermal energy consumption at all thermal stations expired.

Based on the provisions of the Tariff system for energy services in terms of generation, distribution and thermal energy supply, without the amount of tariff items, energy undertakings were obliged to submit their proposals for determining the amount of tariff items after they had gathered data on the thermal energy supplied at billing metering points for 12 months, starting from the day of the legal obligation regarding installation of devices for measurement of thermal energy consumption at all thermal stations. The period stipulated for gathering respective data expired on April 9, 2008. Thereupon another six-month period followed in which the energy undertaking performing the energy activities in terms of generation, distribution and thermal energy supply had to submit to the Ministry appropriate proposals for determining the amount of tariff items. The stipulated period expired on October 9, 2008.

Pursuant to the provisions of the Energy Act, energy undertakings submitted proposals for determining resp. modification regarding the amount of tariff items to the Ministry on nine occasions and the Agency on one occasion during 2008. The Ministry obtained the opinion of the Agency resp. the energy undertaking regarding the submitted proposals and forwarded the proposals as to determining tariff item amounts to the Government of the Republic of Croatia. The Government of the Republic of Croatia stipulated under the Decision on the Amount of Tariff Items of December 2008 the amount of tariff items for energy services in terms of generation, distribution and thermal energy supply, as set forth in tables 6.3.1., 6.3.2., and 6.3.3. The energy undertakings were obliged to apply the amount of tariff items according to the Decision on the Amount of Tariff Items of December 2008 as at January 1, 2009.

Table 6.3.1. The amount of tariff items for thermal energy of energy undertakings according to the Decision on the Amount of Tariff Items of December, 2008 (VAT excluded)

Energy undertaking / town	Tariff element - Energy		Tariff element - Power	
	Households	Industry and commercial consumers [HRK/kWh]	Households	Industry and commercial consumers [HRK/kW]
HEP-Toplinarstvo d.o.o., Zagreb				
The Towns of Zagreb, Osijek i Sisak - Centralized heating system	0,12	0,23	11,13	14,42
The Towns of Samobor, Zaprešić i Velika Gorica - district heating plants (detached boiler-houses)	0,20	0,23	14,42	14,42
Virkom d.o.o., Virovitica	0,22	0,23	18,00	18,00
Termoplin d.d., Varaždin	0,22	0,24	18,70	18,70
Vinkovački vod. i kanalizacija d.o.o., Vinkovci	0,22	0,24	18,70	18,70
Energo d.o.o., Rijeka	0,23	0,28	17,00	18,26
Tehnostan d.o.o., Vukovar	0,23	0,30	18,38	18,38
Brod-Plin d.o.o., Slavonski Brod	0,23	0,30	18,70	18,70
Tekija d.o.o., Požega	0,24	-	18,70	-
Hvidra d.o.o., Split	0,27	0,31	11,22	14,59

Table 6.3.2. The amount of tariff items for technological steam of energy undertaking HEP-Toplinarstvo d.o.o., according to the Decision on the Amount of tariff items of December, 2008 (VAT excluded)

Energy undertaking / town	Energy	Power
HEP-Toplinarstvo d.o.o.	HRK/t	HRK/t/h
Zagreb	125,70	7.973,60
Osijek	125,70	7.973,60

Table 6.3.3. The amount of tariff items for hot/warm water of energy undertaking Toplana d.o.o., Karlovac, according to the Decision on the Amount of Tariff Items of December 2008 (VAT excluded)

Energy undertaking	Consumption category	Unit of measurement	Amount of tariff items
Toplana d.o.o., Karlovac	Households	(HRK/m^2)	5,51
	Business premises	(HRK/m^2) during the heating season	19,92
	Business premises on the meter	(HRK/MWh)	773

Figures 6.3.1. and 6.3.2. show the results of compared tariff item amounts of energy undertakings in the Republic of Croatia providing services in terms of generation, distribution and thermal energy supply for tariff elements of supplied/received thermal energy and rented power, according to the Decision on the Amount of Tariff Items of December 2008.

Figure 6.3.1. Comparison of amounts of tariff items of energy undertakings for the tariff element of energy supplied for thermal energy customer categories: households, industry, and commercial consumers (VAT excluded)

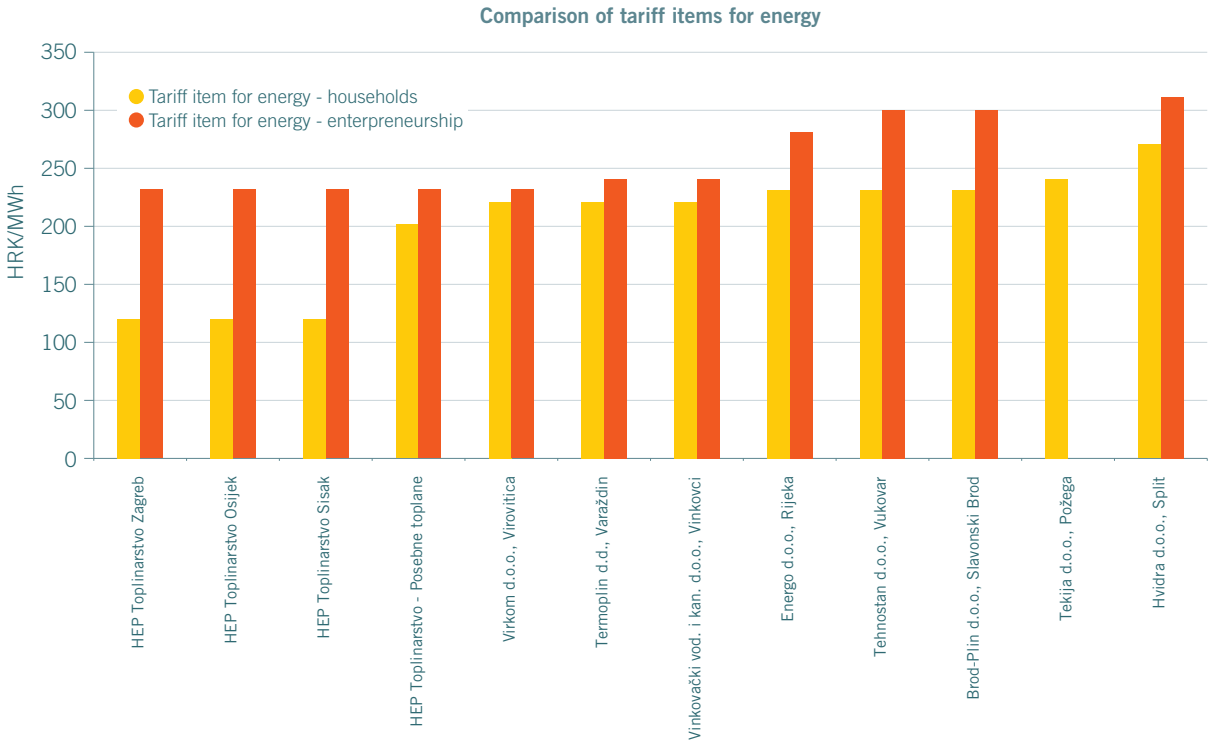
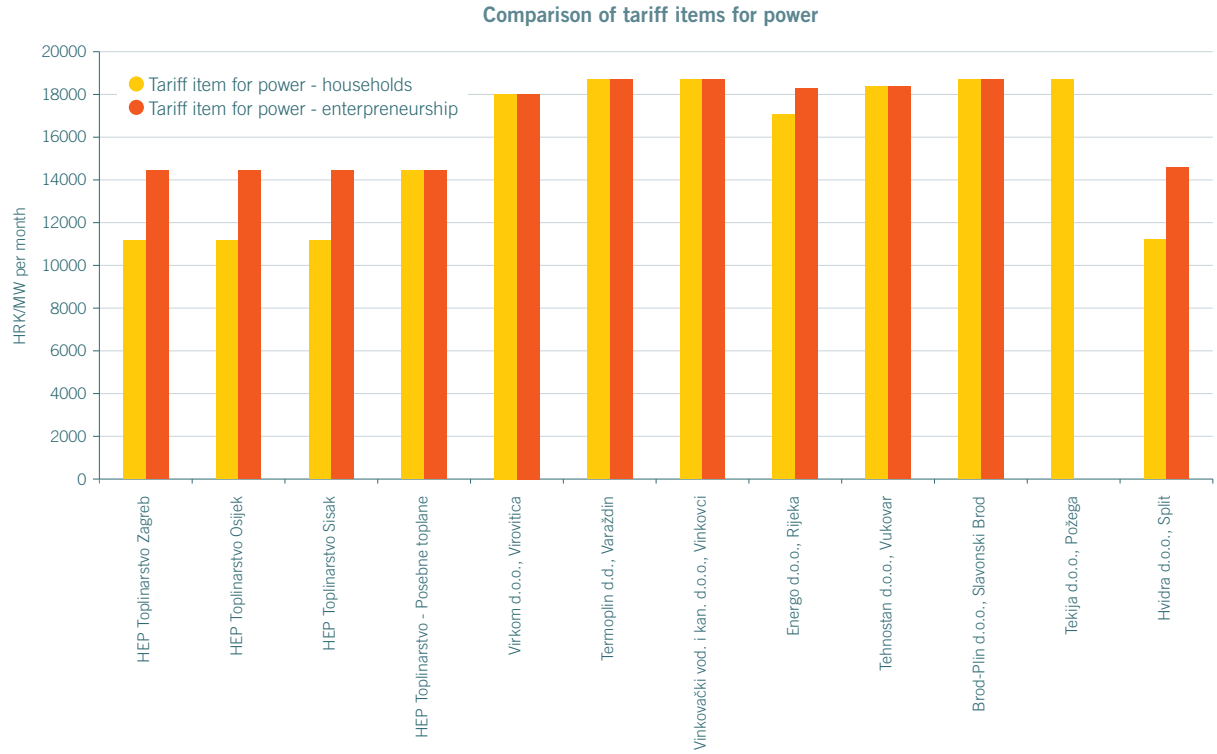


Figure 6.3.2. Comparison of the amounts of tariff items of energy undertakings for the tariff element of rented power for thermal energy customer categories: households, industry, and commercial consumers (VAT excluded)



The total average selling price of one MWh of thermal energy supplied (VAT excluded) by energy undertakings in the Republic of Croatia is shown in figures 6.3.3. and 6.3.4. The comparison was made for the tariff customers of the households category, provided that the same level of service is provided to the customers and taking into consideration different climatic regions in which the towns in the Republic of Croatia are situated.

Figure 6.3.3. Comparison of the total average price of thermal energy of energy undertakings for tariff customer category: households (VAT excluded) expressed in HRK/MWh

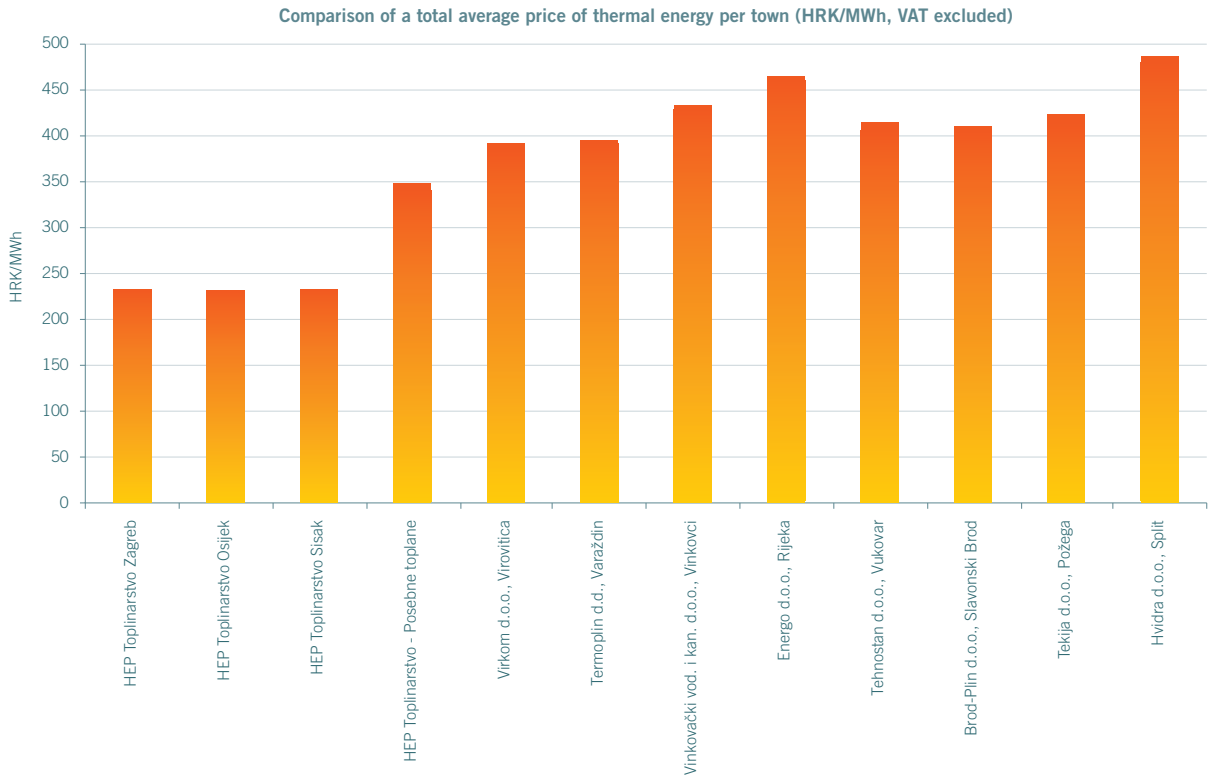
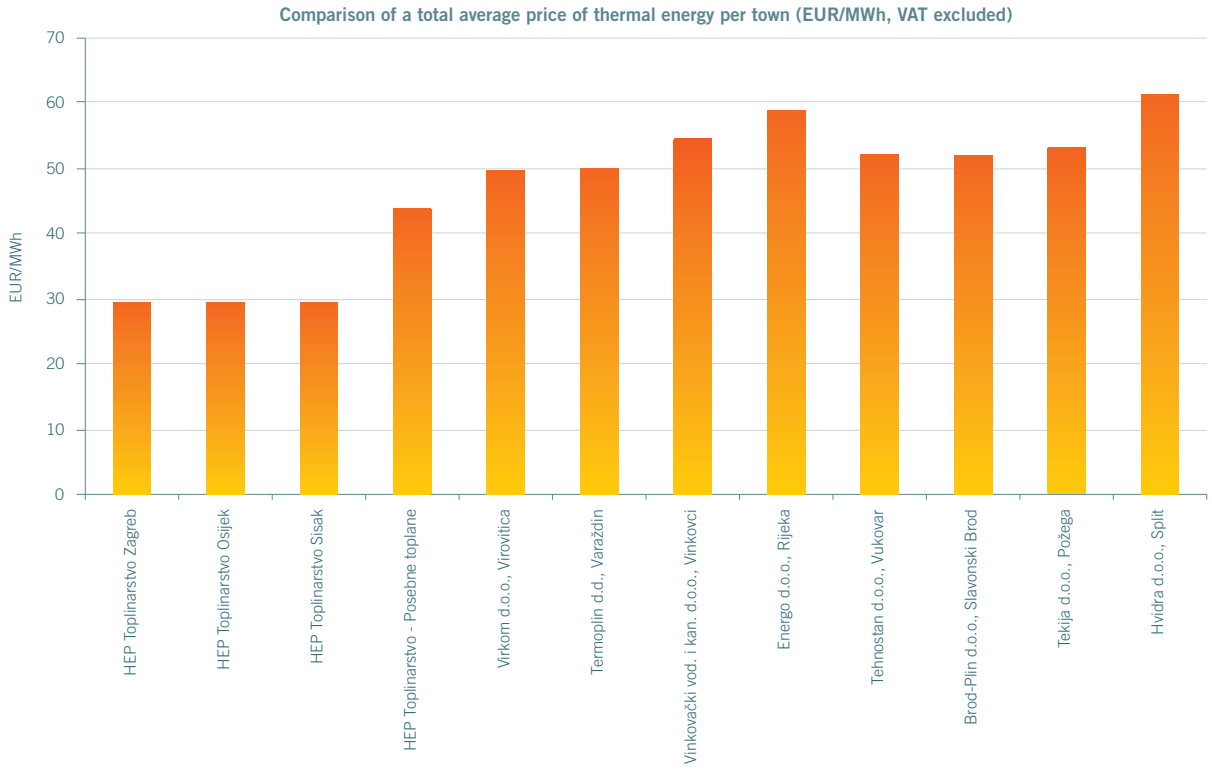


Figure 6.3.4. Comparison of the total average price of thermal energy of energy undertakings for tariff customer category: households (VAT excluded) expressed in EUR/MWh



6.4 Activities within the thermal energy sector

Table 6.4.1. specifies the Agency´s cases from thermal energy sector in 2009 according to type, complaints, objections and customers´ requests towards the Agency, requests by the Ministry for opinion on proposals regarding amounts of tariff items and proposals as to the amount of tariff items as well as the requests by energy undertakings and competent public authorities for opinion and statement of the Agency.

Table 6.4.1. Customers' complaints and request for opinion and statement of the Agency

Case type	Number	[%]
Customers' complaints, objections, and statements	24	57,2%
Requests by the Ministry for opinion of the Agency on proposals as to the amount of tariff items, proposals as to the amount of tariff items	4	9,5%
Requests by energy undertakings and competent public authorities for opinion and statement of the Agency	10	23,8%
Other	4	9,5%
Total	42	100%

Energy undertakings engaged in energy activities in terms of generation, distribution and thermal energy supply have legal obligation to obtain a license from the Agency for performing each and every one of the above-mentioned energy activities. The license is not required for performing energy activity regarding generation of thermal energy, which is exclusively generated for one´s own needs or at generation plants having power up to 0,5 MW.

In 2009, the Agency issued 9 licenses for performing generation, distribution and thermal energy supply activities, namely:
- for thermal energy generation - four
- for thermal energy distribution - two
- for thermal energy supply - three

In addition, a transfer of three licenses for performing generation, distribution and thermal energy supply activities was carried out.

The status of issued and extended licenses as per December 31, 2009 was as follows: 22 licenses for thermal energy generation, 16 licenses for thermal energy distribution and 22 licenses for thermal energy supply.

In 2009, most of the cases submitted in terms of thermal energy sector referred to customers' complaints, objections and statements, followed by requests for opinion and statement of the Agency on the part of energy undertakings and competent public authorities.

6.5 Customer protection

In 2009, customers' complaints, objections, and statements regarding the thermal energy related to the following:
- requests for disconnection from thermal energy system,
- tariff system application and thermal energy consumption calculation,
- collection of costs of electric power consumed at thermal stations,
- thermal energy quality,
- customers' requests for opinion of the Agency and interpretation of regulations,
- modification as to the heated area of residential space.

Customers' complaints, objections, and statements sorted by type are shown in table 6.5.1. In 2009, the Agency resolved 20 customers´ complaints, objections, and statements (out of 24).

Table 6.5.1. Customers' complaints and statements sorted by type

Case type	Number	%
Request for disconnection from thermal energy system	3	12,5%
Tariff system application and thermal energy consumption calculation	13	54,2%
Collection of costs of electric power used at thermal stations	1	4,2%
Thermal energy quality	1	4,2%
Customers' requests for opinion of the Agency and interpretation of regulations	4	16,6%
Modification as to the heated area of residential space	2	8,3%
Total	24	100%

SECURITY OF SUPPLY

7. Security of supply

7.1 Security of electricity supply

Pursuant to Article 23.a of the Energy Act, the Government of the Republic of Croatia issues a report on the status of the security of electricity supply and expected energy needs at the Proposal of the competent Ministry once a year. The Ministry obtains the opinion of the Agency at the drafting of the Proposal.

Maximum and minimum loads (Pmax and Pmin) of the Croatian electric power system, the times of their occurrence and the related electricity import and export are shown in Table 7.1.1. The maximum load of the electric power system in 2009 occurred on December 21, at 6:00 pm and amounted to 3.120 MW.

Table 7.1.1. Maximum and minimum load of the electric power system in Croatia

	Maximum load				Minimum load			
Year	P_{max} [MW]	Time	Import [MW]	Export [MW]	P_{min} [MW]	Time	Import [MW]	Export [MW]
2006	3036	25.01. 20:00	1960	1178	1046	11.06 03:00	1454	673
2007	3098	17.12. 18:00	1538	734	1143	02.05 04:00	975	288
2008	3009	31.12. 18:00	1903	892	1182	25.05. 06:00	1207	672
2009	3120	21.12 18:00	1448	548	1151	13.04. 05.00	687	440

The installed power of power plants on the territory of the Republic of Croatia amounts to 3,988 MW. The Republic of Croatia is a part-owner of the nuclear power plant NPP Krško in the Republic of Slovenia and disposes of 50% of the plant's power, i.e. 338 MW. In 2009, HEP Proizvodnja d.o.o., in cooperation with HEP d.d., carried out the following project activities in order to increase the installed capacities:

- Hydro power plant Lešće with the power of 42 MW is currently undergoing the final phase of the water-gate works, while the construction, mechanical and other works on the switchyards and distribution of the power plant have been finished;
- The additional cogeneration combined gas plant at the site of TE-TO Zagreb ("Block L") with the electrical power of 100 MW and thermal power of 80 MW, which replaces the old plant from 1962 (Block "A"), was set into trial operation in 2009;
- Regarding the new cogeneration gas-steam plant of Thermal power plant "Sisak C" with the electric power of 230 MW and thermal power of 50 MW, which is scheduled to be constructed alongside the existing plants of the Thermal power plant "Sisak A" and Thermal power plant "Sisak B", the preparations regarding the project were continued in 2009;
- The combined cogeneration gas-steam plant of the Thermal power plant "Slavonija", with the electrical power of 400 MW and thermal power of 140 M, whose construction will ensure the security of supply for the area of Slavonia and Baranya, and the gas thermal power plant "Dalmacija" with the power of 400 MW, are currently in the development stage;
- Activities on revitalization of numerous hydro power plants, which will ensure additional 130 MW of generation capacity by 2011, continued.
- Regarding the project of construction of the hydro power plant of Senj II, with the power of 342 MW and the project of annexing of Hydro power plant of Dubrovnik with the existing 216 MW by additional 304 MW, which were temporarily stopped in 2009, there were no further activities.

In 2009, there was no significant increase in generation capacities, except that Orlice wind power plant was set into operation and there was no decommissioning of power plants as well.

The Electricity Market Act stipulates in Article 9 the manner in which the construction of generation plants is approved. Electricity generation plant may be built by legal and natural persons, provided that the generation plant which is to be built complies with the criteria stipulated in the procedure for issuing energy approval for construction of generation plants.

If the construction of generation plants combined with the measures of electricity consumption management and measures for increase of energy efficiency are not sufficient, a decision on construction of plants for energy generation through public tenders in the interest of supply security, environmental protection or fostering energy efficiency can be made. In that case, the decision on public tender and the selection of the most favourable bidder for the construction of generation plants with the power of up to 50 MW is made by the Agency, whereas the decision on public tender and the selection of the most favourable bidder for construction of power plants with the power of 50 MW and more is made by the Government of the Republic of Croatia at the proposal made by the Agency. The Agency is responsible for organisation and implementation of the procedure of the public tender for the construction of power plants.

The most important HEP-OPS investments - from the point of view of plant safety and cross-border trade - include:

- continuation of construction of the 400 kV power-transmission line Ernestinovo - Pecs for the purpose of increasing the cross-border capacities on the Croatia-Hungary border of regional importance in order to link the Central and Southeast Europe market with the anticipated setting into operation in 2010,
- reconstruction of the 220 kV cross-border line Mraclin - Prijedor on the Croatia- Bosnia and Herzegovina border for the purpose of increasing supply security as well as for the requirements of "Sisak C" thermal power plant,
- continuation of reinforcement as to transmission network in Istria with accompanying transformer stations and two 110 kV Plomin Raša 1 power-transmission sections completed in 2009,
- construction and reinforcement of the 220 kv network for energy reception from the power plants planned in Split transmission area (in order to revitalize and expand Zakučac and Dubrovnik Hydro plants),
- construction and reinforcement of the 110 kV network in accordance with revitalization priorities and the necessity of meeting the consumption, while at this point it should be pointed out that in 2009 the transformer station TS 110/10(20) kV Osijek with corresponding 110 Kv cable Osijek 3 - Osijek 4 was completed. In the three-year schedule for the period 2010-2012 a construction of 9 new 110/x kV transformer stations as well as 4 new transformer stations for railway needs is scheduled,
- the fitting of compensation device with power of 150 MVAR with connection to 400 kV in the transformer station TS 400/220/110 kV Konjsko is scheduled for the purpose of complying with voltage situation in Dalmatia,

Among other capital investments of HEP-OPS, the ICT equipment revitalization project in the period between 2008 and 2010 is continued with the objective of increasing the quality of administration and management. The project will also ensure market functions which will provide for a higher quality appearance of Croatian energy undertakings in the regional electricity market.

In terms of the activities of the Republic of Croatia within the Energy Community, the Ministry prepared the Security of Supply Statement of the Republic of Croatia in July 2009 (available at *www.energy-community.org*). Regarding the security of electricity supply, the Statement briefly shows the organization of electricity market, the existing status of infrastructure by activities and specifies strategic activities related to the improvement of supply security.

In October 2009, Energy Development Strategy of the Republic of Croatia was adopted, which establishes the development of Croatian energy sector for the period until 2020, based upon utilization of all energy options for the purpose of complying with its own energy needs and creating additional advantages for the public, according to the principles of environmental, economic and social responsibility.

According to the Strategy, it is estimated that the average annual increase in total electricity consumption by 2020 will amount to approx. 3,5%, i.e. the total electricity consumption, without its own power plant consumption, will amount to 28 TWh in 2020. It is estimated that peak load in Croatian electricity system will amount to approx. 4,600 MW in 2020.

In order to meet its needs in future, a construction of a resilient electricity system is envisaged, which will be competitive in uncertain, changing conditions, providing a high level of security of electricity supply to consumers, which will be based upon diversity and different types of applied technologies and energy forms for conversion into electricity. The most important objectives are as follows:

- it is expected that newly built capacities in large hydro plants will amount to approx. 300 MW by 2020,
- the Republic of Croatia set a goal that a percentage of electricity generation from large hydro plants and renewable energy sources in terms of total electricity consumption is to be maintained on the existing level in the period until 2020 and that it amounts to 35% in 2020,
- until 2020, thermal power plants with a total power of minimum 2,400 MW are to be built (due to worn-out state, thermal power plants of total power on 1100 MW threshold will be brought to a standstill in Croatia in the period from 2013 to 2020),
- until 2020, cogenerations units of total power of minimum 300 MW in counter-pressure performance will be built,

- until 2020, the construction of gas thermal power plants of total power of minimum 1,200 MW is required,
- until 2020, the construction of coal-fired thermal power plants of total power of minimum 1.200 MW is expected,
- the Republic of Croatia launches a Croatian nuclear energy programme, whereas the passing of decision on construction of nuclear plant is expected in 2012 at the latest,
- it is expected that the installed power of wind-power plants in the Republic of Croatia will amount up to 1,200 MW in 2020,
- the Republic of Croatia sets the construction of minimum 100 MW small hydro plants until 2020 as a goal.

In order to accomplish its objectives - with regard to electricity supply security - the Strategy involves a number of other mechanisms such as utilization of all forms of renewable energy sources, energy efficiency, distributed electricity generation, application of other energy sources in direct consumption etc.

7.2 Security of natural gas supply

Participants in the gas market are responsible for gas supply security within their activity. The Ministry in charge of Energy is responsible for:
- follow-up on the relationship between supply and demand in the gas market,
- preparation of an estimate of the future consumption and supply available,
- planning of construction and development of additional gas system capacities and
- proposing and undertaking measures in case of emergency state.

Regional self-government units are responsible for:
- follow-up on the relationship between supply and demand in their area,
- preparation of an estimate on the future consumption and supply available,
- planning of construction of additional capacities and distribution system development on their area and
- proposing and undertaking measures within their jurisdiction, as stipulated by the law.

Regarding natural gas supply security, it is necessary to fully apply both legal acts and subordinate legislation from the gas sector in connection with gas market restructuring.

With the goal to define the measures for the natural gas supply security, in September 2008 the Regulation on Natural Gas Supply Security was issued and applied during the "gas crisis" in January 2009 for the first time. Namely, due to a total outage of natural gas supply from the Russian Federation and the disruption that occurred in the supply to final customers, the Government of the Republic of Croatia declared an emergency state on January 7, 2009, and the Ministry issued measures for resolution of the emergency state. By conducting the measures for increase in generation from domestic deposits, intervention import from the EU countries and by decreasing natural gas consumption, along with conducting measures of the 4th, 5th and 6th degree of supply decrease and outage of delivery, the sustainability of the gas system and the uninterrupted gas supply to all protected customers in the Republic of Croatia was maintained.

Based upon experience regarding conducting measures for resolution of the emergency state during the "gas crisis", in December 2009 the Government of the Republic of Croatia issued a Regulation on Amendments to Regulation on Natural Gas Supply Security (Official Gazette "Narodne novine" No. 153/09), which stipulates in detail the measures for decrease or outage of natural gas supply to particular customers, whereby a greater importance is being attached to the sensibility of particular customer categories.

Apart from the legal regulations, an important precondition for gas supply security is the development of a new infrastructure. The gas infrastructure development is systematically carried out, pursuant to the proposal of the system operator. The Gas Market Act regulates that development plans are drawn up for a five-year period, with the obligation of yearly updates. The development plans are approved by the Minister competent for energy industry, which previously obtained an opinion by the Agency.

In order to further improve the supply security and enable the opening of the natural gas market, additional interconnection with the Republic of Hungary and connection of the Croatian and Hungarian gas transmission system is planned by the end of 2010. To that end, the operators of transmission systems in these two countries concluded a Memorandum of Understanding on May 31, 2007, and upon harmonization of technical details on interconnection they signed a Letter of Intent on July 3, 2008 as well. On these grounds, the Joint Development Agreement of bidirectional interconnection gas pipeline was signed on March 3, 2009 defining the obligations and rights of the partners (Plinacro d.o.o. and FGSZ) regarding the construction of 210 km long Hungarian route Varosföld-Bata-Dravaszerdahely, and the Croatian 88 km long route Donji Miholjac-Beničanci-Slobodnica, all with the unique diameter DN 800, with maximum operating pressure of 75 bars, and the total capacity of 6.5 billion m^3 per year. The Agreement stipulates that the construction

of the whole interconnection gas pipeline is to be completed by the end of 2010, and its commissioning in mid-2011.

The LNG terminal[30], whose investor should be the international consortium Adria LNG, constituted out of the German company E.ON Ruhrgas, the Austrian OMV, the French Total and the Slovenian Geoplin, should also play a major part in providing energy independence of the Republic of Croatia and the diversification of natural gas procurement route. The 11% share in Adria LNG consortium should be taken over by the LNG Hrvatska d.o.o. company, whose founders are the companies Plinacro d.o.o. and HEP d.d. and which was founded in June 2010. In September 2008, the Government of the Republic of Croatia adopted the Decision by which the site Dina near Omišalj on the island of Krk was deemed as the most favourable for the construction of the LNG terminal, whose planned gasification capacity amounts to 10-15 billion m^3 per year. The construction of the terminal for the liquefied natural gas would provide infrastructure for import of additional quantities of gas from north Africa, the Middle East and other areas, while diversifying the procurement routes for natural gas at the same time. Potential markets for new gas quantities, besides the Croatian market, would be West European and Central European countries. Apart from increasing supply security and diversifying procurement routes in accordance with the growing demand for natural gas, the implementation of this project would also increase the liquidity and flexibility of the Croatian gas market and secure the position of the Republic of Croatia as an important transit hub for natural gas.

In addition to the construction of the transmission system and LNG terminals, investments in additional storage capacities represent an important precondition for increasing supply security, taking the expected increase in natural gas consumption and great seasonal fluctuations in the natural gas consumption into consideration.

7.3 Security of oil and oil derivatives supply

Preconditions for secure supply of oil and oil derivatives of the market of the Republic of Croatia were established by harmonization of legal regulations with the EU energy regulations. In this context, the Act on Oil and Oil Derivatives Market stipulates the following measures:

- supervision and responsibility for secure, regular and quality oil and oil derivatives supply, conducted by the Ministry in charge of Energy,
- intervention in case of disturbances in domestic market, conducted by Expert Committee for follow-up on regular oil and oil derivatives market supply,
- constitution of operative oil and oil derivatives stocks, conducted by legal and natural persons generating electrical and/or thermal energy and
- constitution of compulsory oil and oil derivatives stocks, conducted by the Croatian Agency for Compulsory Oil and Oil Derivatives Stocks (hereinafter HANDA).

The representative of the Agency, acting as a member, takes part in the operation of the Expert Committee for the follow-up on regular oil and oil derivatives market supply, which conducts an Intervention Plan in case of emergency regarding the supply as to oil and oil derivatives market (Official Gazette "Narodne novine" No. 68/08). The Intervention Plan stipulates the procedures and criteria for establishing an emergency and procedures for normalization of supply regarding oil and oil derivatives market, which involve measures for decrease in oil derivatives consumption and conditions of consumption and renewal of compulsory oil and oil derivatives stocks.

Regarding the constitution of quantities of compulsory oil and oil derivatives stocks, HANDA is obliged to form compulsory stocks in the amount of 90-day average consumption by July 31, 2012. The quantity and structure of compulsory stocks for particular year is determined by the Government of the Republic of Croatia. The Government of the Republic of Croatia has adopted the Decision on Quantity and Structure of Compulsory Oil and Oil Derivatives Stocks for the year 2009 (Official Gazette "Narodne novine" No. 48/09), in the amounts, as shown in Table 7.3.1 resp. for the year 2010, according to the Decision on Quantity and Structure of Compulsory Oil and Oil Derivatives Stocks (Official Gazette "Narodne novine" No. 41/10).

Table 7.3.1. Quantity and structure of compulsory oil and oil derivatives stocks for the year 2009

Obliged Party	Gasoline [t]	Diesel fuel [t]	Gas oil [t]	Jet fuel [t]	Heating oil [t]
HANDA	92.000	207.000	41.000	8.500	88.000
Energy undertakings (generators and importers)	15.000	34.000	7.000	1.500	14.000
TOTAL	107.000	241.000	48.000	10.000	102.000

[30] *Facility for importation and gasification of liquified natural gas.*

Regarding the storage capacities available, the analysis of the Ministry and HANDA established that there are no appropriate storage capacities on the territory of the Republic of Croatia for the quantity of compulsory oil and oil derivatives stocks. In December 2009, the Plan of provision, construction dynamics and renewal of compulsory stocks of oil and oil derivatives, storage organisation and regional distribution was adopted (Official Gazette "Narodne novine" No. 149/09), which established that it is necessary to build 480.000 m^3 of storages capacities for crude oil and approx. 260.000 m^3 for oil derivatives within the shortest period possible.

Apart from the above-mentioned facts, it is to be mentioned that the EU Energy Council adopted a new Directive on minimum oil and oil derivatives stocks 2009/119/EC in June 2009, which is to be applied from 31 December 2012 and which stipulates a new methodology of calculation of quantities, a modification in the manner of reporting as well as inclusion of biofuels into the stocks system.

Biofuels as supplement or substitute for diesel fuels or gasoline for transportation needs

The Act on Oil and Oil Derivatives Market recognizes the utilization of biofuels as supplement to oil derivatives if they comply with the regulation on the quality of biofuels.

The Regulation on the Quality of Biofuels (Official Gazette "Narodne novine" No. 141/05) stipulates limits of the characteristics of biofuels which represent a supplement or substitute for diesel fuel or gasoline for transportation needs.

The Act on Biofuels for Transportation stipulates the incentives for generation and consumption of biofuels in the Republic of Croatia, particularly in terms of fostering utilization of biofuels and other renewable transportation fuels and brings the Croatian legislation and acquis communautaire of the European Union into line.

Apart from the above-mentioned facts, it is to be mentioned that the European Parliament and the Council adopted a new Directive on fostering the utilization of energy from renewable sources 2009/28/EC in April 2009, which gives guidelines for calculation of fuel share from renewable sources in transportation fuels, calculations as to saving of greenhouse gases, the criteria of sustainability of biofuel generation as well as other requirements which need to be transposed into the local regulations until December 5, 2010.

PUBLIC SERVICE OBLIGATION

8. Public service obligation

8.1 Electricity

HEP d.d. as the mother company and its dependant companies have the obligation to carry outregulated activities regarding electricity as public service. Transmission and distribution of electricity are regulated activities, whereas generation and supply of electricity are market activities. However, there is a special regulated activity regarding generation of electricity for tariff customers in the Republic of Croatia. The electricity market in the Republic of Croatia was completely opened on 1 July, 2008, which means that, since then, all customers have a legal right to choose their electricity supplier. However, customers from the household category (42% of the total consumption, according to the data for 2009) have the right to electricity supply from tariff customers suppliers if they do not wish to use their status as eligible customers and to freely contract electricity supply. All customers who lose their supplier or whose supplier went out of business have the same right, but only up to 30 days at the most. Tariff customers supplier is an energy undertaking which has the license to carry out electricity supply activities and the public service obligation to supply tariff customers with electricity in regulated manner and at regulated prices. The Electricity Market Act defines that in the Republic of Croatia the distribution system operator is obliged to carry out activities of tariff customer supplier as well.

Tariff customers supplier carries out the electricity supply in accordance with the valid corresponding tariff items amounts from the tariff system for electricity generation and tariff system for electricity supply.

It must be pointed out that until June 30, 2009 so-called small customers (customers with less than 50 employees and annual income of up to HRK 70 million) had the right to electricity supply from tariff customers suppliers.

Customers left without a supplier or customers whose supplier went out of business, that are not able to find a new supplier within 30 days, pay for the electricity supply at the electric power balancing price determined by the Methodology of Providing Energy Balancing Services in the Electric Power System.

In June, 2009, the Agency adopted amendments to the Methodology of Providing Energy Balancing Services in the Electric Power System which define that eligible customers which fail to chose a new supplier within 30 days pay for the electricity in accordance to the valid corresponding tariff item amounts from the tariff system for electricity generation for tariff customers, increased by 20%. These customers pay the supply fee as well (costs of calculation of electricity consumption, costs of bill issuing and collecting) in accordance with the tariff item amounts from the tariff system for electricity supply to tariff customers.

8.2 Natural gas

Performance of energy activities as public services has been regulated by the Energy Act.

The public service is defined as a service available at all times to all customers and energy undertakings at regulated prices and regulated conditions for access and usage of the service, taking safety, regularity and quality of service, environmental protection, efficiency of energy utilization and climate protection into the account and it is performed according to the principles of transparency of operation and supervision by legally defined authorities.

Energy activities in the gas sector are carried out as market or regulated activities.

Regulated activities, which are carried out as public services include gas transmission, gas distribution, gas storage, LNG terminal operation, gas procurement, supply of gas to tariff customers as well as gas market organization.

Eligible customer from household category who has not chosen their supplier within six months from the day of the opening of the market, is entitled to gas supply by the supplier who is the holder of the public service of gas supply. In accordance with the Ordinance on the Natural Gas Market Organisation and the

General Conditions of Natural Gas Supply, eligible customers from household category whose supplier went out of business or who had decided to change the supplier after the opening of the market are entitled to the public service of gas supply as well.

For the supplier who is the holder of the public service obligation regarding gas supply to customers from household category, the supplier who carried out the gas supply activity for tariff customers from household category on July 31, 2008 was determined for a five-year period. The holder of the public service obligation of gas supply to the household category customers is entitled to procure gas from the supplier which is the holder of the public service obligation of gas supply. After the expiration of the five-year period, the holder of the public service obligation of gas supply for the customers from the household category is selected for the next five-year period by public tender.

For the holder of the public service obligation regarding gas supply, the gas supplier who carried out the activity regarding gas supply on July 31, 2008 is determined. Thereupon, by passing a decision on determining the gas supplier, the Government of the Republic of Croatia determines the holder of the public service obligation of gas supply that is the gas supplier for tariff customers suppliers in the Republic of Croatia for a period until July 31, 2013. After expiry of the said period, the holder of the public service obligation of gas supply for a period of five years is selected on the basis of the public tendering procedure conducted by the Agency.

At the meeting held on July 24, 2009, the Government of the Republic of Croatia adopted a Decision on gas supplier for tariff customers suppliers in the Republic of Croatia. Pursuant to the Decision, the company Prirodni plin d.o.o. from Zagreb is determined as gas supplier for tariff customers suppliers. The public service customers from household categories have the status, rights and responsibilities of tariff customers as long as the conditions are fulfilled on the basis of which the public service obligation of gas supply to the household category customers has been established. The supplier who is the holder of the public service obligation of gas supply to the household category customers has the status, rights and responsibilities of the supplier of the household category tariff customers as long as the conditions are fulfilled on the basis of which the public service obligation of gas supply to the household category customers and gas procurement has been established.

Concerning the very substance of the public service obligation of gas supply and gas procurement, the supplier who is a holder of the public service obligation of gas supply for the household category customers is obliged to supply gas to the eligible customers from the household category under regulated conditions, while the supplier who is a holder of the public service obligation of gas procurement is obliged to procure gas to the supplier who is a holder of the public service obligation of gas supply to the eligible customers from the household category under regulated conditions.

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ANNEX - LICENCES FOR CARRYING OUT ENERGY ACTIVITY

10. Annex - Licences for carrying out energy activity

List of energy undertakings to which the Agency issued, renewed or transferred licenses for carrying out energy activity in 2009 per energy activity:

List of licenses issued in the period from 1/1/2009 to 31/12/2009	No. of licenses issued
Electricity generation	**3**
SLADORANA d.d. from Županja	
ZAGREBAČKE OTPADNE VODE - upravljanje i pogon d.o.o. for services from Zagreb	
VJETROELEKTRANA ORLICE d.o.o. for energy generation from Šibenik	
Electricity supply	**1**
PARTNER ELEKTRIK d.o.o. for electrician works and technical security, from Zagreb	
Electricity trading	**1**
LUMIUS d.o.o. for energy activity from Varaždin	
Gas production	**1**
Plinara d.o.o. from Pula	
Delivery and sales of gas from own production	**1**
INA-INDUSTRIJA NAFTE d.d. from Zagreb	
Gas procurement	**1**
Prirodni plin d.o.o. from Zagreb	
Gas distribution	**8**
ZELINA-PLIN d.o.o. for gas distribution from Sv. I. Zelina	
ZELENJAK PLIN d.o.o. from Klanjec	
ČAPLIN d.o.o. for gas distribution from Čazma	
PLIN VRBOVEC d.o.o. for gas distribution and supply from Vrbovec	
PAPUK PLIN d.o.o. for carrying out activity in gas sector, from Orahovica	
PLIN d.o.o. for gas distribution and supply from Garešnica	
IVKOM-PLIN d.o.o. for gas distribution and supply from Ivanec	
IVAPLIN d.o.o. for gas distribution and supply from Ivanić Grad	
Gas supply	**7**
GRADSKA PLINARA ZAGREB Đ OPSKRBA d.o.o. for gas supply from Zagreb	
INA - INDUSTRIJA NAFTE d.d. from Zagreb	
Prirodni plin d.o.o. from Zagreb	
ZELENJAK PLIN d.o.o. from Klanjec	
IVKOM-PLIN d.o.o. for gas distribution and supply, from Ivanec	
AMGA ADRIA construction, planning, utility services, trading d.o.o. from Kraljevica	
PLIN VRBOVEC d.o.o. for gas distribution and supply from Vrbovec	
Organization of gas market	**1**
HRVATSKI OPERATOR TRŽIŠTA ENERGIJE d.o.o. for organization of electricity and gas market from Zagreb	
Thermal energy generation	**4**
Ivakop d.o.o. from Ivanić Grad	
Grijanje Varaždin d.o.o. from Varaždin	
PLIVA HRVATSKA d.o.o. for development, production and sales of drugs and pharmaceutical products, from Zagreb	
HRVATSKE ŠUME d.o.o. from Zagreb	
Thermal energy distribution	**2**
Ivakop d.o.o. from Ivanić Grad	
Grijanje Varaždin d.o.o. from Varaždin	
Thermal energy supply	**3**
Ivakop d.o.o. from Ivanić Grad	
Grijanje Varaždin d.o.o. from Varaždin	
HRVATSKE ŠUME d.o.o. from Zagreb	
Biofuel production	**1**
BIODIZEL VUKOVAR d.o.o. for production, trading and services from Vukovar	
Biofuel wholesale	**1**
BIODIZEL VUKOVAR d.o.o. for production, trading and services from Vukovar	
Storage of biofuel	**1**
BIODIZEL VUKOVAR d.o.o. for production, trading and services from Vukovar	

Oil derivatives transmission through oil product pipelines and other unspecified means of transportation under the Item 22 Paragraph 1 Article 15 of the Energy Act	**1**
DINAMARIN d.o.o. for maritime services from Omišalj	
Transmission of oil, oil derivatives and biofuel by road transportation	**35**
Legal persons	
TIFON d.o.o. for trading and serviced from Zagreb	
Zovko-Zagreb d.o.o. from Sesvete	
Tornado d.o.o from Topolovec	
ZLATKO TRANSPORTI d.o.o. from Sesvete	
Mastrans prijevoz, trgovina i usluge d.o.o. from Metković	
AB PETROL d.o.o. from Sesvetski Kraljevec	
AUTOŠKOLA MILOTIĆ d.o.o. from Pazin	
OTI-G d.o.o. from Velika Gorica	
TRI BARTOLA for trading and services d.o.o. from Galovac	
KLOPIĆ d.o.o. from Županja	
MARKO TRGOVINA I PRIJEVOZ d.o.o. from Zagorska Sela	
SIROVINA BENZ d.o.o. from Knin	
GUT d.o.o. from Zagreb, HELP d.o.o. from Čazma	
EKOL TRGOVINA d.o.o. from Ivanić Grad	
MARIMPEX d.o.o. from Rakov Potok	
Baće promet d.o.o. from Metković	
MS PROMET d.o.o. for trading, from Pula	
FEROTOM ZAGREB d.o.o. for transportation and trading from Dugo Selo	
KALAJ PROMET d.o.o. for transportation and services, from Zagreb	
DEZEL d.o.o. for trading and construction from Zagreb	
KOMPANIJA ŽERJAV TRANSPORTI d.o.o. for transportation, trading and services, from Hum na Sutli	
CODEX 2006 d.o.o. for construction, trading and services from Sisak	
SIMPED d.o.o. for construction, trading and services from Sisak	
TRANS PLIN d.o.o. for gas transmission from Buje	
NACIONAL d.o.o. for production, transportation and services from Bjelovar	
KOLTRANS d.o.o. for transportation, shipping, trading and representation, from Zagreb	
EUROTANK d.o.o. for national and international transportation, shipping and trading from Velika Gorica	
KABEMA import-export, wholesale trade d.o.o. from Velika Gorica	
PLATANUS d.o.o. for trading, tourism, catering and services from Trsteno	
PGP-PUH d.o.o. for trading, transportation and construction from Zagreb	
Natural persons	
Stipo Mandić, owner of the craft AUTOPRIJEVOZNIK-VL. STIPO MANDIĆ from Zagreb	
Ilija Barišić, owner of the craft AUTOPRIJEVOZNIK ILIJA BARIŠIĆ, from Slavonski Brod	
PRIJEVOZNIČKO-TRGOVAČKI OBRT "JOZINOVIĆ" Branko Jozinović, the owner, Zrinjevac 30, Ivankovo	
Alen Crnković, owner of the craft "CRNKOVIĆ", AUTOPRIJEVOZNIČKI OBRT, ALEN CRNKOVIĆ, SISAK, A. G. MATOŠA 21, Sisak	
Ana Čudina, owner of the craft OBRT ZA RIBARSTVO, PRERADU, TRGOVINU I PRIJEVOZ NADALINA, OWNER: ANA ČUDINA, KAŠTEL NOVI, PUT STOMORIJE BB, Kaštel Novi	
Wholesale trading in oil derivatives	**4**
MS PROMET d.o.o. for trading from Pula	
VELIS d.o.o. for construction, trading and services from Sesvete	
NAFTA CENTAR d.o.o. for trading and services from Samobor	
Croatian Agency for Mandatory Stocks of Oil and Oil Derivatives from Zagreb	
Storage of oil and oil derivatives	**5**
TERMINAL DUNAV d.o.o. for transhipment and storage of oil derivatives from Vukovar	
BRALA TRADE d.o.o. from Islam Latinski	
SIROVINA BENZ d.o.o. from Knin	
JADRANPLIN d.o.o. for storage, loading and trading from Drniš	
CRODUX PLIN d.o.o. for trading und services from Zagreb	
Wholesale trade of LPG	**4**
BRALA TRADE d.o.o. from Islam Latinski	
JADRANPLIN d.o.o. for storage, loading and trading from Drniš	
ZAGREBAČKI PROMETNI ZAVOD d.o.o. from Zagreb	
CRODUX PLIN d.o.o. for trading and service from Zagreb	
Trading, intermediation and representation on the energy market	**1**
Prirodni plin d.o.o. from Zagreb	
TOTAL	**86**

List of licences renewed in the period from 1/1/2009 to 31/12/2009	No. of licences renewed
Electricity supply	**1**
HEP-ODS d.o.o. from Zagreb	
Gas distribution	**11**
KOMUS d.o.o. from Donje Stubice	
GRADSKA PLINARA KRAPINA d.o.o. for gas distribution and supply from Krapina	
PLINARA d.o.o. from Pula	
MONTCOGIM-PLINARA d.o.o. from Sv. Nedelja	
PLINKOM d.o.o. from Pitomača	
BROD-PLIN d.o.o. for construction and maintenance of gas network, natural gas distribution and supply, thermal energy production, distribution and supply from Slavonski Brod	
MOSLAVINA PLIN d.o.o. for gas pipeline construction and gas distribution, from Kutina	
PLIN-PROJEKT d.o.o. for gas pipeline construction and gas distribution from Nova Gradiška	
Termoplin - Novi Marof d.d. from Novi Marof	
PLINARA ISTOČNE SLAVONIJE d.o.o. for gas supply from Vinkovci	
PRVO PLINARSKO DRUŠTVO d.o.o. for gas distribution from Vukovar	
Thermal energy supply	**1**
HVIDRA d.o.o. from Split	
Oil derivatives transmission through oil product pipelines and other unspecified means of transmission under the Item 22 Paragraph 1 Article 15 of the Energy Act	**1**
Jadranski pomorski servis d.d. from Rijeka	
Transmission of oil, oil derivatives and biofuel by road transportation	**44**
Legal persons	
BUDO PROMET d.o.o. from Velika Gorica	
BRALA TRADE d.o.o. from Islam Latinski	
Natural persons	
AUTOPRIJEVOZNIK Damir Grcić from Drniš	
AUTOPRIJEVOZNIK Nikola Vrbat from Zagreb	
Zoran Jozić, owner of the craft Autoprijevoznik Jozić from Slavonski Brod	
Luka Jozić, owner of the craft AUTOPRIJEVOZNIK Luka Jozić from Slavonski Brod	
Hrvatina Grgurinović, owner of the craft Prijevoz i trgovina "TINA" from Komin	
Andro Ceković, owner of the craft AUTOPRIJEVOZ I UGOSTITELJSTVO from Slavonski Brod	
Antun Stjepanović, owner of the craft AUTOPRIJEVOZNIK ANTUN STJEPANOVIĆ from Slavonski Brod	
Robert Mavar, owner of the craft AUTOPRIJEVOZNIK from Kastav	
Arsen Čermelj, owner of the craft JAVNI PRIJEVOZ GORIVA from Viškovo	
Ivan Marić, owner of the trucking crafts from Zaprešić	
BoŽidar Grgurić, owner of the craft "AUTOPRIJEVOZNIK" from Kloštar Ivanić	
Veronika Došen, owner of the trucking crafts from Zagreb	
Anto Stanić, owner of the craft AUTOPRIJEVOZ I TRGOVINA from Sesvete	
Collins Domančić, owner of the craft AUTOPRIJEVOZNIK DOMANČIĆ COLLINS from Dražice	
Davor Panjkret, owner of the craft "PARTNER-CENTAR", the craft for services and trading, Novo Selo Palanječko, from Sisak	
Ivana Bubalo, owner of the craft "MARIĆ" craft for trucking and real estate trading, from Pušća	
Martin Šlogar, owner of the craft AUTOPRIJEVOZNIK from Čazma	
Lovro Mijić, owner of the craft AUTOPRIJEVOZNIČKI OBRT "MIJIĆ" from Solin	
Vladimir Jurakić, owner of the craft "AUTOPRIJEVOZNIK" from Sesvete	
Zvonko Jozić, owner of the craft ĆIZOJ-AUTOPRIJEVOZNIK from Slavonski Brod	
Ivica Ninčević, owner of the craft AUTOPRIJEVOZNIK, OWNER: IVICA NINČEVIĆ from Solin	
Nikola Kljajić, owner of the craft NIKI PRIJEVOZ from Stari Slatinik	
Slavko Katinić, owner of the craft AUTOPRIJEVOZNIK SLAVKO KATINIĆ from Slavonski Brod	
Mario Soldan, owner of the craft SOLDAN PRIJEVOZ AUTOPRIJEVOZNIČKI OBRT, OWNER: MARIO SOLDAN, from Slavonski Brod	
Mirko Grubišić, owner of the craft TRGOVAČKO-PRIJEVOZNIČKI OBRT "SVEM" OWNER: MIRKO GRUBIŠIĆ from Solin	
Igor Pranjić, owner of the craft AUTOPRIJEVOZNIČKI OBRT "RIJEKA TRANS" IGOR PRANJIĆ from Rijeka	
Dario Ljubas, owner of the craft AUTOPRIJEVOZNIK DARIO LJUBAS, OWNER: DARIO LJUBAS from Kukuljanovo	
MIRKO LIOVIĆ, owner of the craft AUTOPRIJEVOZNIK MIRKO LIOVIĆ from Slavonski Brod	
MLADEN KUŠTRO, owner of the craft Autoprijevoznik "KUŠTROTRANS", owner: MLADEN KUŠTRO from Zagreb	
Zlatko Šlosar, owner of the craft OBRT AUTOPRIJEVOZNIK ZLATKO ŠLOSAR from Rupe	
Tomo Jelinić, owner of the craft AUTOPRIJEVOZNIK TOMO JELINIĆ from Slavonski Brod	

Mirsad Ičanović, owner of the craft "AUTOPRIJEVOZNIK", MIRSAD IČANOVIĆ from Sisak
Stojan Marinc, owner of the craft AUTOPRIJEVOZNIK STOJAN MARINAC from Klana
Marijan Kljajić, owner of the craft AUTOPRIJEVOZNIK, TRGOVINA I USLUGE, OWNER: MARIJAN KLJAJIĆ, ZAGREB, JEŽDOVEČKA 118 B, from Zagreb
Hrvoje Tomić, owner of the craft AUTOPRIJEVOZNIK HRVOJE TOMIĆ, 142. BRIGADE 48, Drniš
Slavko Đaković, owner of the craft AUTOPRIJEVOZNIK "ĐAKOVIĆ" OWNER: SLAVKO ĐAKOVIĆ, SLAVONSKI BROD, SV. ANTUNA 61, TOPRIJEVOZNIK Sv. Antuna 61, Slavonski Brod
Ivica Šebalj, owner of the craft "AUŠEBALJ" USLUŽNI OBRT, IVICA ŠEBALJ, BUDAŠEVO, KOSTELČEVA 40, Pavla i Mice Kostelac 40, Budaševo Sisak
Darko Gusak, owner of the craft AUTOPRIJEVOZNIČKI OBRT, OWNER: DARKO GUSAK, ZAGREB, VIGANJSKA 1A, Viganjska 1a, Zagreb
Stjepan Panežić, owner of the craft "PAN-OIL" PRIJEVOZ I USLUGE, STJEPAN I BLAŽENKA PANEŽIĆ, PETRINJA, IVANA GORANA KOVAČIĆA BB, Petrinja
Maksimir Simčić, owner of the craft UNUTARNJI JAVNI PRIJEVOZ STVARI - ZAPALJIVIH TEKUĆINA, OWNER: MAKSIMIR SIMČIĆ, KLANA, ŠKALNICA 21 B, Klana
Stipo Praiz, owner of the craft AUTOPRIJEVOZ "PRAIZ" STIPO PRAIZ, ŠPIŠIĆ BUKOVICA, P. MIŠKINE 9, Špišić Bukovica
Ana Simoni, owner of the craft "BENI" OBRT ZA TRGOVINU, UGOSTITELJSTVO I PRIJEVOZ, owner: Ane Simoni, 85. ulica 58, 20271 Blato

Wholesale trade in oil derivatives	**6**
TIFON d.o.o. for trading and services from Zagreb	
INA-Osijek Petrol d.d. from Osijek	
LUKOIL Croatia d.o.o. from Zagreb	
NAUTICA VUKOVAR d.o.o. for port operation from Vukovar	
SIROVINA BENZ d.o.o. from Knin	
Luka Ploče-trgovina from Ploče	
Storage of oil and oil derivatives	**4**
TIFON d.o.o. for trading and services from Zagreb	
NAUTICA VUKOVAR d.o.o. for port operation from Vukovar	
Luka Ploče-trgovina from Ploče	
CROBENZ d.d. from Zagreb	
Trading, intermediation and representation on the energy market	**4**
Ezpada d.o.o. from Zagreb	
ELEKTRO GRUPA d.o.o. from Split	
GEN-I Zagreb d.o.o. electricity trading and sales, from Zagreb	
EFT Hrvatska d.o.o. for trading and services from Zagreb	
TOTAL	**72**

List of licences transferred in the period from 1/1/2009 to 31/12/2009	No. of licences transferred
Gas distribution	**3**
From KOMUNALAC d.o.o. from Konjščina to PLIN KONJŠČINA d.o.o. for gas distribution and supply from Konjščina	
From KOMUNALNO PITOMAČA d.o.o. to PLINKOM d.o.o. for gas distribution from Pitomača	
From DARKOM d.o.o. from Daruvar to DARKOM DISTRIBUCIJA PLINA d.o.o. for gas distribution from Daruvar	
Gas supply	**3**
From VIRKOM d.o.o. from Virovitica to PLIN VTC d.o.o. for gas distribution and supply from Virovitica	
From KOMUNALAC d.o.o. from Konjščina to PLIN KONJŠČINA d.o.o. for gas distribution and supply from Konjščina	
From IVAKOP d.o.o. from Ivanić Grad to IVAPLIN d.o.o. for gas distribution and supply from Ivanić Grad	
Thermal energy generation	**1**
From VIRKOM d.o.o. from Virovitica to PLIN VTC d.o.o. for gas distribution and supply from Virovitica	
Thermal energy distribution	**1**
From VIRKOM d.o.o. from Virovitica to PLIN VTC d.o.o. for gas distribution and supply from Virovitica	
Thermal energy supply	**1**
From VIRKOM d.o.o. from Virovitica to PLIN VTC d.o.o. for gas distribution and supply from Virovitica	
TOTAL	**9**

Energy activity	Licences issued as at 31 December 2009
Electricity generation	12
Electricity transmission	1
Electricity distribution	1
Electricity supply	5
Electricity trading	1
Organization of the electricity market	1
Gas production	1
Delivery and sales of natural gas from own production	1
Gas procurement	2
Natural gas storage	2
Natural gas transmission	1
Gas distribution	37
Managing the LNG terminal	0
Gas supply	45
Intermediation on the gas market	0
Representation on the gas market	0
Gas trading	0
Organization of the gas market	1
Thermal energy generation	22
Thermal energy distribution	16
Thermal energy supply	22
Biofuel production	2
Wholesale trading in biofuel	1
Storage of biofuel	1
Production of oil derivatives	2
Oil transmission through oil pipelines and other unspecified means of transportation under the Item 22 Paragraph 1 Article 15 of the Energy Act	2
Oil derivatives transmission through oil product pipelines and other unspecified means of transmission under the Item 22 Paragraph 1 Article 15 of the Energy Act	4
Transmission of oil, oil derivatives and biofuels by road transportation	121
Wholesale in oil derivatives	19
Storage of oil and oil derivatives	23
Wholesale trading in liquefied petroleum gas (LPG)	5
Trading, intermediation and representation on the energy market	30
Wholesale and retail trade in liquefied petroleum gas (LPG)	4
TOTAL	385

On 31 May 2010, the Agency issued a total of 403 licences for carrying out energy activities.

Data on licences for carrying out energy activities are available in the Consolidated Registry of Licences kept by the Agency at its website: *http://www.hera.hr/hrvatski/html/dozvole.html*.

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