CROATIAN ENERGY REGULATORY AGENCY

ANNUAL REPORT 2008

Croatian Energy Regulatory Agency
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Introduction

Dear Reader,

Before you lies the Report on the work of the Croatian Energy Regulatory Agency for the year 2008. 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, oil and oil products market in the Republic of Croatia. It also brings an overview of the reliability 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, the process of transferring acquis communautaire of the European Union into the Croatian economy by adopting new laws and subordinate regulations has continued.

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 has, among other things, been achieved by adopting tariff amounts for all regulated energy activities pursuant to tariff systems. With the preparation and adoption of plans for the development and construction of transportation and distribution systems, preconditions have been made for the further development of the network infrastructure in the Republic of Croatia.

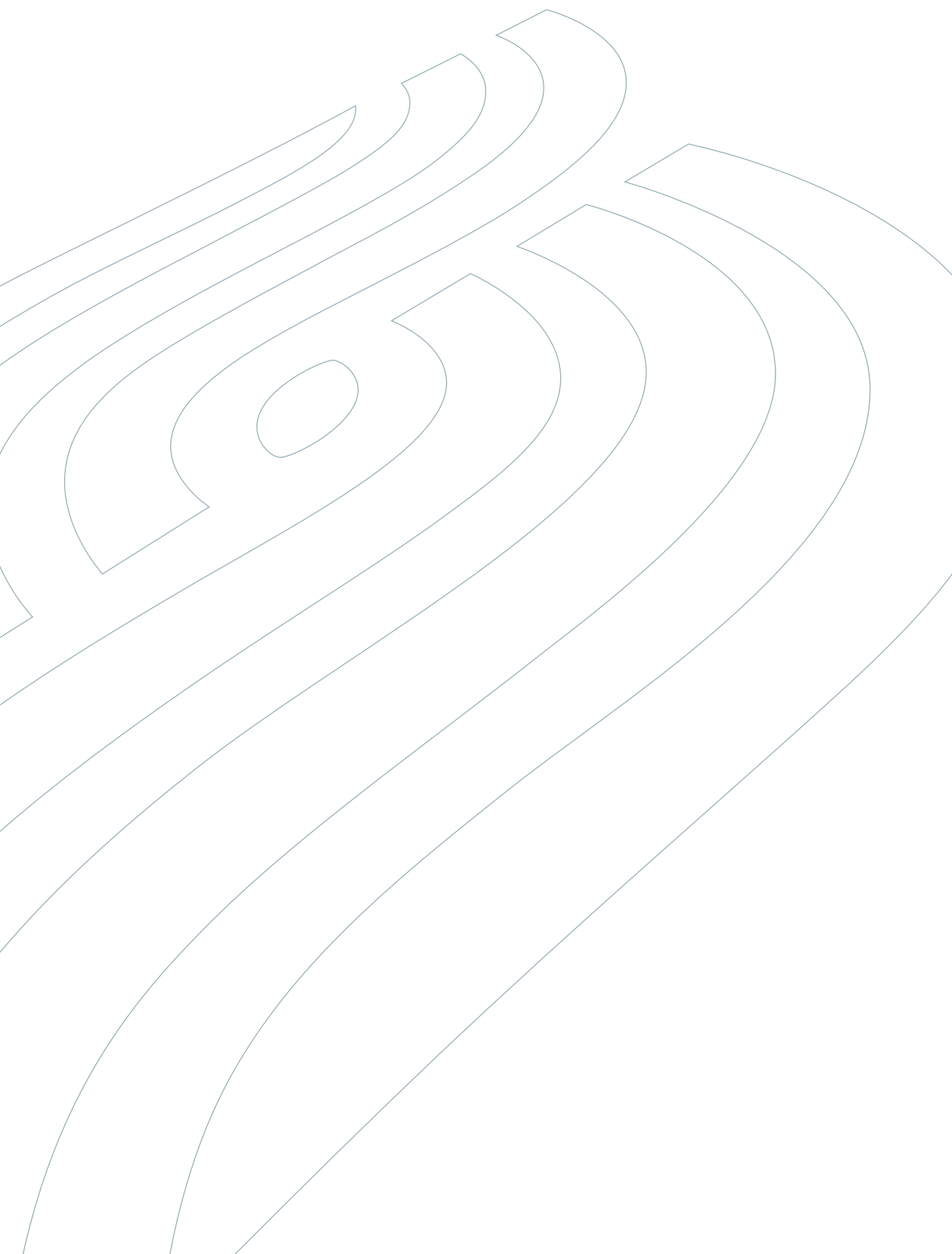
The subject of reliability of the electricity and natural gas supply for all buyers imposed itself as crucial as well. Negative global trends on the world energy market in 2008 also affected the reliability of supply. Therefore, while taking into account the requirements for the reliability of energy supply and the complexity of the energy market opening process, 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 reliability of energy supply in the Republic of Croatia and the region is improved.

Croatian Energy Regulatory Agency continued strengthening administrative, professional and organizational capacities in order to perform its obligations as efficiently and transparently as possible. A strong and independent Croatian Energy Regulatory Agency is of key importance to the further development of the energy market in the Republic of Croatia.

President of the Managing Council

Tomo Galić, BSc.Eng.



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SUMMARY AND SIGNIFICANT EVENTS IN 2008

2 Summary and significant events in 2008

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: 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 in the energy sector,
- analysis of the energy sector,
- the results of follow-ups on the fulfilment of obligations of energy operators 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.

Following the acceptance of the Report, the Agency is obliged to publish it in its gazette or on the Agency'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 and 50/09) the means 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 operators 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 complaints, objections and claims.

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: the Ministry).

The financial operations of the Agency are supervised by the Ministry of Finance.

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 Act on Gas Market (Official Gazette "Narodne novine", No. 40/07 and 152/08),
5. The Act on the Production, Distribution and Supply of Thermal Energy (Official Gazette "Narodne novine", No. 42/05),
6. the Act on Oil and Oil Derivatives Market (Official Gazette "Narodne novine", No. 57/06),
7. the 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", No. 6/06 and 9/06),
9. the General Administrative Procedure Act (Official Gazette "Narodne novine", No. 53/91 and 103/96),
10. the Ordinance on Licences for Carrying Out the Energy Activities (Official Gazette "Narodne novine", No. 118/07),
11. the Decision on the Amounts of Compensations for Carrying Out Energy Regulatory Activities (Official Gazette "Narodne novine", No. 155/08 and 50/09),
12. The Directive on the Validity Period for Licences for Carrying Out Energy Activities (Official Gazette "Narodne novine", No. 50/09) and
13. and other subordinate regulations adopted pursuant to the Energy Act and other acts that regulate the carrying out of particular energy activities.

The Agency's activities

The Activities of the Agency are provided in the Act on the Regulation of Energy Activities and include the following activities in particular:

1. issuing licences for carrying out energy activities,
2. issuing decisions on granting the eligible producer status;
3. issuing tariff systems without the amounts of tariff items,
4. issuing a tariff system for oil transportation by oil pipelines,
5. issuing a decision on the amounts of tariffs for the transportation of oil by oil pipelines
6. issuing a methodology on providing balancing energy services in the electric power system,
7. issuing regulations on the amounts of compensations for connection to the network/system and for the increase in connection power
8. issuing opinions or approvals regarding rules and regulations within the energy sector;
9. monitoring cross border capacities and congestion management;
10. performing monitoring operations (over the implementation of tariff systems and all prescribed fees, over the energy operators' services, etc.),
11. customer protection,
12. settling disputes regarding carrying out regulated energy activities;
13. collaboration with ministries and respective inspectorates;
14. submitting requests for instituting magistrate court proceedings and
15. other operations.

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

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

Organizational scheme of the Agency

The organizational scheme for work and operations of the Agency is elaborated in the Agency's Statute (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 Board of Governors and expert services.
The Agency is managed by the Chairman of the Board of Governors.
The Board of Governors and its Chairman perform jobs based on public authorisations.

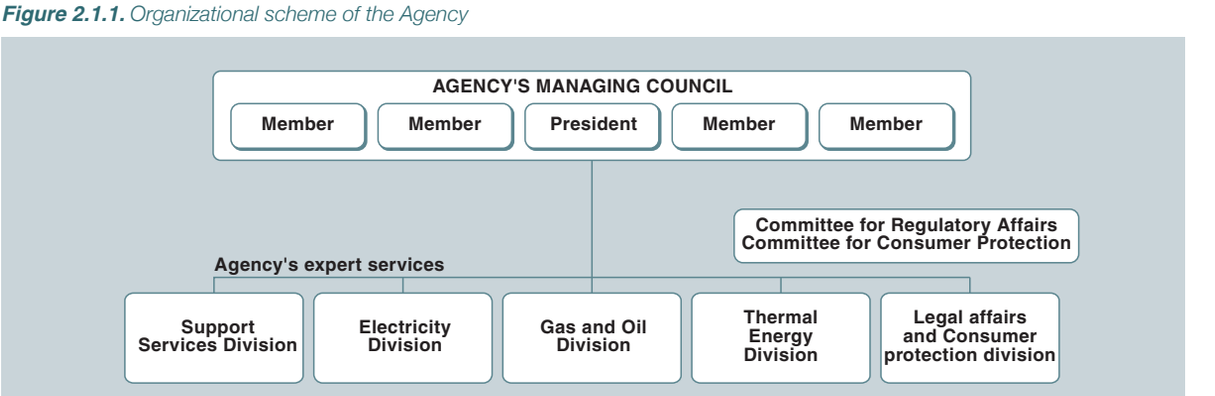
In expert services, expert, administrative and technical operations are performed as required by the Agency.

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 represented in Figure 2.1.1.

Figure 2.1.1. *Organizational scheme of the Agency*



The sector is run by managers appointed by the President of the Managing Council based on public competition for a period of four years, with the possibility of re-election.

Sector managers run the Agency's expert work and they report to the President of the Managing Council.

In 2008, the Agency employed eight new employees, so on 31 December 2008 it employed a total of 43 people and on 1 June 2009, 48 people.

In 2008, 19 meetings of the Agency's Managing Council were held and 267 items on the agenda were discussed.

All decisions of the Board of Governors are regularly published on the Agency's website.

Customer protection

The Agency is active within the field of customer protection in several ways, as follows:

- through monitoring the energy operators, controlling the quality of energy operators' services and through collecting and processing data regarding activities of the energy operators within the field of customer protection, pursuant to provisions of the Energy Act and the acts that regulate carrying out respective energy activities, as well as through cooperation with the ministries and competent inspectorates, pursuant to special acts;
- through Customer Protection Council whose members are also representatives of customers associations, which provides recommendations and opinions on measures for customer protection in the implementation of energy activities regulation system, monitors issues regarding customer protection, valid regulations and their effect on customer protection, gives its opinion on legal acts and subordinate legislation related to customer protection and takes the initiative for amendments to the regulations within the field of customer protection;
- through resolution of individual complaints and objections from customers, based on public authorisations pursuant to the Act on the Regulation of Energy Activities.

Customers may claim the protection of their rights before the Agency through complaints, objections, petitions and other statements regarding the activities of the energy operators within the electricity, thermal energy, natural gas and oil sector.

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

In 2008, the Agency received a total of 106 complaints and objections from energy buyers and there were no administrative disputes against the Agency's decision.

2.2 Important 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 regulations adopted in the previous period based on said acts.

As to significant changes of the legislative framework in 2008, relating to the area of electricity, it should be mentioned that the Act on Amendments to the Energy Act was adopted (Official Gazette "Narodne novine", No. 152/08), the Act on Amendments to the Electricity Market Act (Official Gazette "Narodne novine", No. 152/08) and Amendment to Methodology on providing balancing energy services in the electric power system (Official Gazette "Narodne novine", No. 90/08).

Electricity tradeThere have been no significant changes in the field of electricity trade in the Republic of Croatia in 2008 compared to 2007.

As to the generation of electricity, the energy operator HEP Proizvodnja d.o.o., managing 89% of generation capacities generated 86% of total electricity in the Republic of Croatia in 2008. In 2008, the Agency issued three new licences for electricity generation, and all the cases involved producers of electricity from renewable energy sources and cogeneration.

The total consumption of electricity in the Croatian electric power system amounted to approximately 18 TWh. Domestic production satisfied 63% of electricity demands. 20% of energy was obtained through trade and 17% was obtained from the nuclear power plant NE Krško. Hrvatska elektroprivreda d.d. (hereinafter: HEP d.d.) is a 50% co-owner of the nuclear power plant Krško and disposes of 338 MW. The largest share in the generaed electricity balongs to thermal power plants with a share of 53.4%, followed by hydro power plants with 46.2% and wind power plants with a 0.4% share.

In 2008, the Agency prolonged five and issued four new licences for the energy activity of trading, mediation and representation on the energy market (used for electricity trading).

As to the legislative framework, the Act on the Amendments to the Energy Act from 2008 and the Act on Amendments to the Electricity Market Act from 2008, introduced a new energy activity, „electricity trade", performed by an electricity trader - an entity which buys and sells electricity, excluding the sale of electricity to buyers. The Agency's approval of the Rules on Balancing the Electric Power System and the Rules on Allocation and Use of Cross-Border Transfer Capacity has also been introduced as obligatory in primary legislation.

In December 2008, the Agency approved the new Rules on Allocation and Use of Cross-Border Transfer Capacity. It eliminated the faults of the previous Rules on Allocation and Use of Cross-Border Transfer Capacity that were not completely harmonized with the Regulation (EC) No. 1228/2003 and the corresponding guidelines for congestion management.

With the Amendment to the Methodology on providing balancing energy services in the electric power system, the unit price of electricity balancing is prescribed for electricity calculation for eligible customers who have not found their supplier in the prescribed period.

In July 2009, the Agency adopted one more amendment to said Methodology by which this price is more precisely defined.

Electricity supply

Pursuant to the Electricity Market Act of 1 July 2008, all electricity buyers are free to choose their electricity supplier, i.e. they obtained the status of eligible customer. The Act on Amendment to the Electricity Market Act from 2008 prescribes that HEP Operator distribucijskog sustava d.o.o. (hereinafter: HEP ODS) as the energy operator performing all tasks of a distribution system operator shall also perform the tasks of a tariff customers supplier under the terms of obligation to provide a public service. An eligible customer from the household category, who does not wish to use his right of an eligible customer or does not succeed in finding a supplier has a right to electricity supply from the suppliers of tariff customers. A small customer must choose a supplier before 30 June 2009 and conclude a contract on supply with his supplier of choice and in that period the small customer has a right to electricity supply from a tariff customer supplier. By the end of 2008, all customers connected at high voltage, a majority of customers connected at medium voltage and a part of small customers concluded a contract on supply with a supplier of eligible customers based on market criteria, which makes up 33% of the total electricity delivered to customers.

Transmission and distribution network infrastructure

In 2008, HEP-Operator prijenosnog sustava (hereinafter: HEP-OPS) and HEP ODS prepared drafts for a three-year plan for development and construction of transmission and distribution network between 2008 and 2010 which the Agency approved.

The construction of a 400 kV power-transmission line Ernestinovo-Pecs, as one of the most important electric power facilities in the transmission network, with the total length of 86.4 km and with the transmission capacity 2x1100 MW, with expected completion in 2010, shall greatly increase the cross-border capacities and the possibilities of electricity trade in the region.

Regulation and unbundling of activities

In 2008, tariff methodologies adopted in late 2006 were implemented for the first time and the amounts of tariff items for the following activities were set:
- electricity generation for tariff customers,
- electricity transmission,
- electricity distribution and
- electricity supply to tariff customers.

Within the scope of monitoring the unbundling of activities, HEP-OPS delivered 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 June 2007 to June 2008. The Annual report was published on 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 2008. The Report was published on the HEP-ODS website *http://www.hep.hr/ods/propisi.*

Supply reliability

In 2008, the activities on the construction of the hydro power plant "Lešće" with 42 MW power and additional cogeneration combined gas plant on the location Cogenerative TPP 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 by 2011. The construction of wind power plants of the total power of 50 MW started.

In December 2008, the Act on efficient use of energy in end use (Official Gazette "Narodne novine", No. 152/08) regulating the field of efficient use of energy in end use was adopted. It prescribes the adoption of plans, programmes and measures for the improvement of energy efficiency and their implementation. Energy services and energy reviews, as well as the obligations of the public sector, energy undertakings and big consumers, as well as the consumer rights in the implementation of energy efficiency measures are especially regulated.

The purpose of said Act is to achieve the goals of sustainable energy development: decreasing negative influences on the environment in the energy sector, improving the security of energy supply, meeting the requirements of energy consumers and completing the international obligations of the Republic of Croatia related to emissions of greenhouse gases by encouraging the implementation of energy efficiency measures in the sectors of direct energy consumption.

In 2008, the adaptation and upgrading of the Strategy of Energy Development in the Republic of Croatia started, with the objective of developing Croatian energy sector in the period before 2020. In October 2008, a Proposal for the Adaptation and Upgrading of the Strategy of Energy Development in the Republic of Croatia was presented. In 2009, the Government of the Republic of Croatia submitted the Strategy for adoption by the Croatian Parliament.

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 subordinate regulations adopted in the previous period based on said acts.

In 2008, the Act on Amendments to the Gas Market Act (Official Gazette "Narodne novine", No. 152/08), The Regulation on the Safety of Natural Gas Supply (Official Gazette "Narodne novine", No. 112/08) and the Tariff System for Storage of Natural Gas, without the Amounts of Tariff Items (Official Gazette "Narodne novine", No. 151/08) were adopted. In addition,

the Act on Amendments to the Energy Act (Official Gazette "Narodne novine", No. 152/08), the Decision on the Price of Gas Procurement for the Gas Supplier of Gas Suppliers of Tariff Customers (Official Gazette "Narodne novine", No. 142/08), the Decision on the Amount of Tariff Items for the Transportation of Natural Gas for 2009 (Official Gazette "Narodne novine", No. 154/08), Decision on the Amount of Tariff Items in the Tariff system for Distribution of Natural Gas, without the Amounts of Tariff Items and the Tariff System for Natural Gas Supply, with the Exception of Eligible Customers, without the Amounts of Tariff Items (Official Gazette "Narodne novine", No. 86/08 and 90/08), Decision on the Amounts of Tariff Items in the Tariff System for Distribution of Natural Gas, without the Amounts of Tariff Items (Official gazette "Narodne novine", No. 154/08), Decision on the Amounts of Tariff Items in the Tariff System for Natural Gas Supply, with the Exception of Eligible Customers, without the Amounts of Tariff Items (Official Gazette "Narodne novine", No. 154/08) were adopted.

In the course of 2008, the preparation of a series of subordinate regulations arising from the provisions of the Gas Market Act continued. In April 2009, the following were adopted: General Conditions of Natural Gas Supply (Official Gazette "Narodne novine", No. 43/09), Ordinance of Natural Gas Market Organisation (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), and Rules for Use of Gas Storage System (Official Gazette "Narodne novine", No. 50/09).

Act on Amendments to the Gas Market Act

The main reasons for the adoption of the Act on Amendments to the Gas Market Act are the necessary improvement of the legislative framework for the implementation of a new gas market model, i.e. the implementation of new subordinate regulations from the gas sector.

The Act on Amendments to the Gas Market Act includes the following:
- defining expressions and the entire scope of energy activities in the gas sector and the participants of the gas market,
- introducing balancing groups and head of balancing group with the aim of planning the needs for gas of the balancing group members and balancing the amount of gas that is delivered to and taken over from the transmission system on daily basis,
- introducing a gas market operator for the purpose of organizing the gas market and commercial balancing of the gas system;
- prescribing the rights and obligations of gas traders and
- defining the operative stock for the purpose of balancing the transmission system and/or reliability of gas supply.

Regulation on Natural Gas Supply Security

Security of supply is the field regulated by the Gas Market Act in accordance with the Council Directive 2004/67/EC of 26 April 2004 on the measures for ensuring the security of natural gas supply. With regard to that, the Government of the Republic of Croatia adopted the Regulation on Security of Natural Gas Supply on 30 September 2008. The regulation prescribes the measures for ensuring reliable and efficient natural gas supply, the criteria and methods of establishing the sufficient quantity of natural gas for providing reliable natural gas supply to protected customers, the order of decrease or discontinuation of natural gas supply per customer categories in case of a crisis situation and the content of the gas supplier's report on the reliability of natural gas supply. The measures for ensuring reliable and efficient natural gas supply, provided by the Regulation may be divided into three groups: long-term measures, measures that are planned and executed on yearly basis, with the objective of recognizing and eliminating the reasons that could lead to crisis situations and intervention measures in case of a crisis that could not have been foreseen or prevented. Pursuant to the Regulation, the gas producer, the transmission system operator, distribution system operator and gas storage system operator are obliged to prepare, each within its respective scope of activities, a plan of action in case of a crisis situation. Until the crisis situation plans are approved by the relevant minister, the remedy measures in case of a crisis situation defined by the Regulation shall be implemented according to the Operating plan attached to this Regulation.

Tariff System for Storage of Natural Gas without the Amounts of Tariff Items

The Tariff system for storage of natural gas, without the Amounts of Tariff Items has been adopted for the first time in the Republic of Croatia and it is based on the provisions of the Energy Act, the Act on the Regulation of Energy Activities and the Gas Market Act. The tariff system for the storage of natural gas establishes the price for the storage of natural gas for the gas storage system users on annual basis. By applying the tariff system, the prices of storage of natural gas are defined in a transparent and unbiased manner, which provides a higher level of security to the user and indirectly, higher quality level as well. Also, preconditions for development of the gas storage system in the Republic of Croatia have been provided.

The tariff system, i.e. the methodology of establishing the tariff items for natural gas storage shall define:
- the formula and elements for determining the amount of allowed revenue of the gas storage system

operator,
- data, documents and other materials used to determine the expenses and allowed amount of the gas storage system operator's revenue,
- allocation of the allowed revenue for the services of lease and use of working volume capacity, the injection capacity and withdrawal capacity for the gas storage system.
- the method, elements and criteria for the calculation of tariff items for the services of lease and use of the capacity of operating volume, injection and extraction capacities for the gas storage system and
- the procedure for submitting proposals for establishing the amount of tariff items for gas storage.

The characteristics of this Tariff system for natural gas storage are the following:
- the method of justified business costs is used as a regulation method,
- the allowed revenue of the gas storage system operator includes business operating costs, depreciation of regulated assets and the return on investments from regulated assets,
- three tariff items are defined for gas storage: the tariff item for the lease of working volume (Trv), the tariff item for the lease and use of daily capacity for gas injection into the working volume (Tu) and the tariff item for the lease and use of daily capacity for gas withdrawal from the working volume (Tp) and
- gas storage system operator proposes tariff items so that the expected total revenue does not exceed the amount of the allowed revenue.

The tariff system came into force on 1 January 2009 and it shall be implemented by the energy undertaking performing the energy related activity of gas storage.

2.2.3 Oil and oil derivatives

Legislative framework

The oil and oil derivatives market, i.e. corresponding energy activities, are regulated by the Energy Act, the Act on the Regulation of Energy Activities and the Act on Oil and Oil Derivatives Market. Oil derivatives, as defined by the Act on Oil and Oil Derivatives Market, include: gasolines, aviation fuels, diesel fuels, gas oil, fuel oil, marine fuels, jet engine fuels, kerosene, bitumen, petroleum coke and liquefied petroleum gas (LPG). In addition, the Act on Oil and Oil Derivatives Market recognizes the use of biofuels as addition to oil derivatives.

The following regulations were adopted in 2008 with the objective of improving the reliability of oil and oil derivatives supply on the Croatian market:
- Intervention plan in case of extraordinary disturbance in oil and oil derivatives market supply (Official Gazette “Narodne novine” No. 68/08),
- Decision on the establishment of an Expert Council for monitoring the regular supply of oil and oil derivatives market (Official Gazette “Narodne novine” No. 68/08) and
- Decision on the appointment of a chairman, vice chairman and members of the Expert Council for monitoring the regular supply of oil and oil derivatives market (Official Gazette “Narodne novine” No. 92/08).

In 2008, the Regulation on the organization, supervision and collection of fees for financing HANDA and compulsory stocks of oil and oil derivatives (Official Gazette “Narodne novine” No. 3/08) defining the contents, method and deadlines for delivering data and the method of calculation and deadlines for fee payments for financing the Croatian Compulsory Oil Stocks Agency (hereinafter: HANDA) and compulsory oil and oil derivatives stocks was adopted.

A Programme for creating preconditions and the activities of HANDA was prepared and adopted with the aim of ensuring 90-day worth of compulsory oil and oil derivatives stocks until 31 July 2012. In parallel with the work on long-term resolution of storage space issues, the physical accumulation of stocks also started.

In 2008, oil companies from Romania, the Republic of Serbia and the Republic of Croatia signed an agreement on the establishment of a Project development company that would work on promoting the project of a Paneuropean oil pipeline (hereinafter: PEOP) from Constanza (Romania) to Trieste (the Republic of Italy).

2.2.4 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 Production, Distribution and Supply of Thermal Energy, the Act on the Regulation of Energy Activities and subordinate regulations adopted in the previous period based on said acts.

In 2008, pursuant to the provisions of the Energy Act, the Agency adopted the Amendment to the Tariff System for Services of Energy Activities of Thermal Energy Production, Distribution and Supply, without the Amounts of Tariff Items (Official Gazette "Narodne novine", No. 65/07 and 154/08).

In December 2008, the Government of the Republic of Croatia issued a 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: Decision on the Amounts of Tariff Items from December 2008).

In November 2008, the Minister of the Economy, Labour and Entrepreneurship issued an Ordinance on Allocation and Calculation of Costs for Supplied Thermal Energy (Official Gazette "Narodne novine" No. 139/08 and 18/09).

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

The amendment to the Tariff System for Services of Energy Activities of Thermal Energy Production, Distribution and Supply, without the Amounts of Tariff Items enabled that business customers of the Third category from the Decision on the Amounts of Tariff Items in the Tariff System for Energy Activities of Thermal Energy Production, Distribution and Supply (Official Gazette "Narodne novine" No. 115/07 and 127/07) shall belong to the tariff group of households on central thermal system, i.e. households on local heating plants (separate boiling rooms) two years after the Amendment comes into force.

Decision on the Amounts of Tariff Items from December 2008

The Decision on the Amounts of Tariff Items from December 2008 defined the amounts of tariff items in the Tariff System for Energy Activities of Thermal Energy Production, Distribution and Supply in Zagreb, Osijek, Sisak, Velika Gorica, Zaprešić, Samobor, Karlovac, Slavonski Brod, Split, Varaždin, Rijeka, Virovitica, Vinkovci, Vukovar and Požega, effective as of 1 January 2009.

Ordinance on Allocation and Calculation of Costs for Supplied Thermal Energy

The Ordinance on the Allocation and Calculation of Costs for Supplied Thermal Energy prescribes the installation of thermal devices for internal distribution of supplied thermal energy, devices for regulating heat emission and devices for measuring the consumption of 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 independent usage units 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.

2.3 Significant events in the sphere of the Agency's work

2.3.1 Electricity

In 2008, the Agency was mainly focused on the following activities in the electricity domain:
- Analysis of the three-year plans for the development and construction of transmission and distribution network for the period from 2008 to 2010,
- Analysis of proposed amounts of tariff items for the following activities:
  - electricity generation for tariff customers,
  - electricity transmission,
  - electricity distribution and
  - electricity supply to tariff customers.

- Monitoring the allocation and use of cross-border transfer capacities and the harmonization of the capacity allocation scheme with the Directive (EC) No. 1228/2003 and the relevant guidelines. For that purpose, the Agency approved the new Rules on Allocation and Use of Cross-Border Transfer Capacity. With the aim of resolving the congestion on the regional level the Agency issued an approval for the HEP OPS to sign a Memorandum of Understanding regarding the implementation of common procedures for congestion management and the establishing of an auction office for Southeast Europe,
- Gathering and processing data in relation to the activities of energy undertakings for the purpose of monitoring the unbundling of energy activities and the quality of energy operators' services,
- Issuing 10 licences for carrying out energy activities,
- Issuing three decisions for acquiring the status of eligible electricity producer and
- Resolution of a total of 132 cases, customer complaints and objections on the work of energy undertakings and especially those relating to connection and connection fees.

In 2008, the Agency adopted an Amendment to the Methodology on providing balancing energy services in the electric power system.

In 2008, within the framework of cooperation with the ministries and competent inspectorates, the Agency issued an opinion regarding subordinate regulations of which the following should be pointed out:
- Proposal for the Adaptation and Upgrading of the Strategy of Energy Development in the Republic of Croatia,
- Draft Amendment to the Tariff System for Electricity Production from Renewable Energy Sources and Cogeneration,
- Draft Regulation on the Amendment to the Regulation of Fees for Encouraging Production of Electricity from Renewable Energy Sources and Cogeneration and
- Draft National List of Indicators

2.3.2 Natural gas

The Agency's activities in the gas sector in 2008 included the following:
- preparation and adoption of the Tariff System for Natural Gas Storage,
- issuing opinions regarding the draft Regulation on Natural Gas Supply Security,
- preparation of a proposal of the Ordinance of Natural Gas Market Organisation,
- preparation of a proposal of Network Rules for the Gas Distribution System,
- issuing an opinion regarding the proposed amounts of tariff items for the following activities:
  - transmission of natural gas (one opinion),
  - distribution of natural gas (33 opinions) and
  - supply of natural gas (33 opinions).
- preparation of proposed amounts of tariff items for the following activities:
  - distribution of gas (12 opinions) and
  - supply of gas (36 opinions).
- issuing 19 licences for carrying out energy activities, of which one licence was issued for natural gas storage, three licences for gas distribution and 15 licences for gas supply,
- extension of two licences for carrying out energy activity of gas distribution and
- transfer of two licences for carrying out the energy activity of gas distribution.

In the period from 1 January 2009 to 30 June 2009, a total of 9 licences were issued for the performance of energy activities and five licences were extended.

Except for the above mentioned, in 2008, the Agency started preparing the remaining two regulations regarding the gas sector - the Ordinance on the Fee for Connection to the Gas Distribution or Transmission System and for Increase of Connection Capacity and the Methodology for Determining the Balancing Energy Price in the Gas System, whose adoption is expected in the second half of 2009.

2.3.3 Oil and oil derivatives

The Agency's activities in the oil and oil derivatives sector in 2008 included the following:
- Issuing 32 licences for carrying out energy activities, of which one licence was issued for the production of oil derivatives, five licences for oil and oil derivatives storage, one license for LPG wholesale and 25 licences for the transportation of oil, oil derivatives and biofuels by road vehicles,
- extension of seven licences for oil derivatives wholesale and four licences for the storage of oil and oil derivatives and

- issuing decisions on the expiration of one licence for carrying out the energy activity of oil, oil derivatives and biofuels transportation by a road vehicle.

In the period from 1 January 2009 to 30 June 2009, a total of 23 licences were issued for carrying out energy activities and 43 licences were extended.

2.3.4 Thermal energy

In 2008, the Agency issued several proposals, opinions, responses and adopted corresponding decisions in the thermal energy sector, in connection with the activity of energy operators and the protection of thermal energy customers, according to the requirements of the Ministry, the State Inspectorate, government and self-government bodies, energy operators, customer complaints objections and demands and based on statements from legal and private entities.

In 2008, the Agency issued and extended a total of 13 licences for carrying out energy activities of thermal energy production, distribution and supply.

On 1 July 2009, the status of licences was the following: 22 licences for production, 17 licences for distribution and 23 licences for supply of thermal energy.

Other Agency's cases from the thermal energy sector were the following (classified according to categories): Complaints, objections and other customer demands, requests by the Ministry for opinions on the proposals of the amounts of tariff items and requests from energy operators and competent state organs for opinions and statements by the Agency.

Pursuant to the provisions of the Energy Act, a Decision on the Amounts of Tariff Items from 2008 was issued in 2008. It defined the amounts of tariff items for energy operators carrying out the energy activities of thermal energy production, distribution and supply. Energy operators were obliged to implement the amounts of tariff items from the Decision on the Amounts of Tariff Items from December 2008 starting from 1 January 2009.

Since the implementation of new amounts of tariff items started as of 1 January 2009, pursuant to the Decision on the Amounts of Tariff Items from 2008, the Agency controlled the implementation of the tariff system and the amounts of tariff items in all energy operators for thermal energy production, distribution and supply in the Republic of Croatia in the first half of 2009 opinions were issued on the results of the control over the implementation of the tariff system and the amounts of tariff items and published on the Agency's website.

2.3.5 International cooperation

Since its foundation 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 work in professional workgroups of these associations.

Within the framework of international cooperation in 2008, the Agency's participation in the work of the Energy Community Regulatory Board (ECRB) should be stressed as well as the work 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).

The Agency became a monitor in the ERGEG working groups (European Regulatory Group for Electricity and Gas).

The Agency also participated in the work of 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, gas and environment, renewable energy sources and energy efficiency.

Since the foundation of the Croatian Energy Regulatory Agency, the Agency's representatives are members of Licensing Committee, Tariff Committee, Chairmen Committee, Legal Regulation Working Group, Gas Working Group), ERRA (Energy Regulators Regional Association).

European Commission on the Agency's work

At the end of October 2008, within the negotiations on the Croatian accession to the European Union in Chapter 5 - Energy, the European Commission Energy Peer-Based Assesment Delegation visited HEP OPS, Croatian Energy Market Operator (hereinafter: HROTE), the Ministry and the Agency to gain insight into the implementation and harmonization of the Croatian legislation with the acquis communautaire of the European Union in the energy sector.

In its report the Delegation stated that it was satisfied with the progress that the Republic of Croatia achieved regarding the implementation of acquis communautaire concerning the energy domain and that a strong legislative and institutional framework had been set in the key fields of the energy sector, such as market regulation, operative functioning and positive regulations.

The representatives of the Delegation expressed satisfaction with the visit and, among other things, they expressed their belief that the Agency is a strong, independent and well-equipped regulatory body in the professional and organizational terms and that it is of the utmost importance to the energy sector of the Republic of Croatia. It was also ascertained that the Agency is an efficient and productive organization with strong institutional and legal foundations and effective organizational scheme and it was positively concluded that the Agency is focused on the key areas of its responsibility.

The representatives of the Delegation strongly recommended that the Agency take over full authority over defining prices for the performance of regulated energy activities, in addition to full authority in the preparation of tariff systems.

Also, it was pointed out that there are areas where further progress is expected, and these are especially highlighted in the report.

3

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. In the Republic of Croatia there is one transmission system operator - HEP-OPS. HEP-OPS is in charge of security and reliability of the electric power system operation and proper coordination of the production, transmission and distribution systems. Transmission electric power network and production facilities under the control of HEP-OPS is responsible are shown in picture 3.1.1.

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

Basic data on transmission network are represented in Table 3.1.1.

Table 3.1.1. *Basic data on transmission network, status on 31/12/2008*

Data type/voltage level	400 kV	220 kV	110 kV	MV	TOTAL
Line length [km]	1.159	1.144	4.634	184	7.121
Transformer substations [pcs]	5	6	106	-	117
Instaled power [MVA]	4.100	2.100	4.903	-	11.103

Source: HEP-OPS

Pursuant to the Act on the Regulation of Energy Activities, the Agency especially monitors deadlines within which the transmission system operator and the distribution system operator execute repairs and connections, as well as objective, transparent and impartial conditions and tariffs for connection of new electricity generators.

HEP-ODS is the only distribution system operator in the Republic of Croatia. Territorial organization of 21 distribution areas of HEP-ODS is presented in the Figure 3.1.2.

Slika 3.1.2. *Distribution areas of HEP ODS*

1 Elektra Čakovec
2 Elektra Varaždin
3 Elektra Koprivnica
4 Elektra Zabok
5 Elektra Bjelovar
6 Elektra Zagreb
7 Elektra Križ
8 Elektra Virovitica
9 Elektroslavonija Osijek
10 Elektra Vinkovci
11 Elektra Požega
12 Elektra Slavonski Brod
13 Elektra Sisak
14 Elektra Karlovac
15 Elektroprimorje Rijeka
16 Elektroistra Pula
17 Elektrolika Gospić
18 Elektra Zadar
19 Elektra Šibenik
20 Elektrodalmacija Split
21 Elektrojug Dubrovnik

Source: HEP ODS

Tables 3.1.2., 3.1.3. and 3.1.4. present basic properties of HEP-ODS' distribution network.

Table 3.1.2. *Line lengths per voltage levels in 2008.*

Voltage level	Length [km]
Lines 110 kV	139,7
Lines 35 i 30 kV	4.713,6
Lines 20 kV	4.686,9
Lines 10 kV	30.053,3
Network 0,4 kV	60.472,6
Household connections	29.459,9
Total	129.526,0

Source: HEP ODS

Table 3.1.3. *Transformer substations per voltage levels in 2008*

Voltage level	Own	Joint	Total
Substations 110/30 i 110/35 kV	0	27	7
Substations 110/35(30)/10(20) kV	2	29	31
Substations 110/10(20) kV	8	34	42
Substations 35(30)/10(20) kV	327	23	350
Substations 20/0,4 kV	3.188	275	3.463
Substations 10/0,4 kV	20.782	2.006	22.788

Source: HEP ODS

Table 3.1.4. *Transformers per voltage levels in 2008*

Voltage level	Installed power [MVA]	Number
Transformers 110 kV	126,0	76
Transformers 30 i 35 kV	64,6	693
Transformers 20 kV	860,0	3.070
Transformers 10 kV	6.325,0	21.751
Total	7.375,6	25.590

Source: HEP ODS

3.1.2 Cross-border capacities and congestion management

Pursuant to the Act on the Regulation of Energy Activities and in cooperation with the regulatory bodies of the neighbouring countries with which there are electric power system connections, the Agency especially monitors allocation and use of cross-border transfer capacities. Therefore, HEP-OPS delivered results of the allocation of cross-border transmission capacities presented in this Annual Report on monthly basis throughout 2008.

Procedures and requirements for allocation and use of cross-border capacities in the Republic of Croatia are regulated by the Rules on Allocation and Use of Cross-Border Transfer Capacity, adopted by HEP-OPS in late 2006, which have been in force since 1 January 2007. Said Rules are published on the HEP-OPS website.

Pursuant to the Rules on Allocation and Use of Cross-Border Transfer Capacity, transfer capacity is allocated at periodical allocation, auction and bilateral allocation. The available capacity is allocated for the period of one year, six months and three months at a periodical allocation, free of charge. The available transfer capacity is offered with an allocation period of one month and one day at an auction. Transfer capacity is offered at a bilateral allocation for the period of a part of a month, one day and part of a day. Pursuant to abovementioned Rules, a secondary market for allocated capacities has not been foreseen.

In December 2008, the Agency approved the new Rules on Allocation and Use of Cross-Border Transfer Capacity. It eliminated the faults of the previous Rules on Allocation and Use of Cross-Border Transfer Capacity that were not completely harmonized with the Regulation (EC) No. 1228/2003 and the corresponding guidelines for congestion management. The harmonization of the Rules with said documents is evident from the following:

- market allocation of cross-border transfer capacity for all periods (yearly, monthly, daily and intra-day) has been introduced,
- the possibility of giving advantage at the allocation and use of cross-border transfer capacities has

been abolished, i.e. the possibility of non-market allocation has been abolished and
- the possibility of transferring rights to allocated capacity between participants has been introduced.

Once a month, HEP-OPS conducts monthly auctions for its part of transfer capacity on the borders with the Republic of Serbia, Republic of Slovenia and Bosnia and Herzegovina. On the border with the Republic of Hungary, bilateral auctions are conducted by HEP-OPS and MAVIR (Hungarian transfer system operator) for the entire transfer capacity once a month. Figure 3.1.3. presents the principle of allocating cross-border capacity for borders with the Republic of Serbia, Republic of Slovenia and Bosnia and Herzegovina. The Croatian share of the available transfer capacity for auction (ATCHR) is defined as the total transfer capacity (TTC) that is established in accordance with the neighbouring transmission system operator, with deducted transmission reliability margin (TRM), with deducted net transfer capacity belonging to the neighbouring transmission system operator (NTCx) and with deducted previously allocated capacity (AACHR).

The principle of allocation at bilateral auctions is presented in Figure 3.1.3.b. At an auction, available transfer capacity (ATC) is awarded. It is defined as a total transfer capacity (TTC) with deducted transfer reliability margin (TRM) and with deducted previously allocated capacity (AAC).

Average values of winter and summer values of cross-border capacity NTC (Net Transfer Capacity) for 2007 and 2008 are presented in Table 3.1.5. Winter values refer to January, February, March, October, November and December, whereas summer values refer to April, May, June, July, August and September. 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).

Figure 3.1.3. *Principles for establishing cross-border transfer capacities*

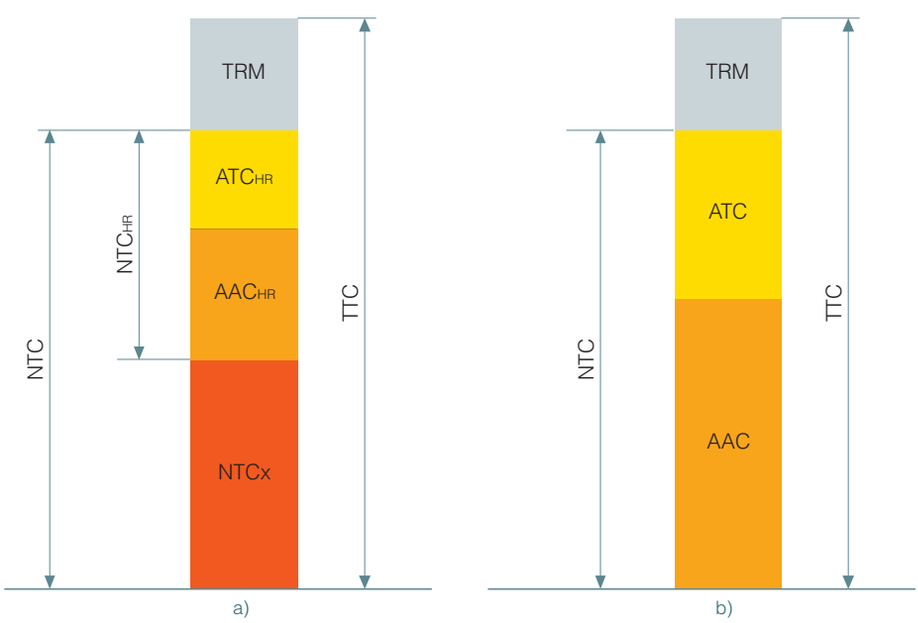


Table 3.1.5. *Average winter and summer values of NTC according to borders for 2007 and 2008 [MW]*

Winter values					Summer values				
Direction			2007	2008	Change	Direction		2007	2008	Change
HR	←	BA	668	567	-15%	HR ← BA		573	547	-5%
HR	→	BA	473	488	3%	HR → BA		462	463	0%
HR	←	SI	933	825	-12%	HR ← SI		950	808	-15%
HR	→	SI	892	850	-5%	HR → SI		900	783	-13%
HR	←	RS	267	213	-20%	HR ← RS		142	125	-12%
HR	→	RS	317	225	-29%	HR → RS		208	200	-4%
HR	←	HU	950	925	-3%	HR ← HU		796	833	5%
HR	→	HU	267	400	50%	HR → HU		233	300	29%
Import			2.818	2.530	-10%	Import		2.461	2.313	-6%
Export			1.948	1.963	1%	Export		1.803	1.747	-3%

Source: HEP-OPS

Total sum of average values of NTC for import in 2008 amounted to 4.843 MW, whereas the sum for export was 3.695 MW.
Transfer capacities allocated at periodical annual allocation for 2008 are presented in table 3.1.6.

Table 3.1.6. *Capacities allocated at annual level according to borders for 2008*

Direction			Available [MW]	Allocated [MW]	Energy operator
HR	←	BA	175	175	HEP Trgovina d.o.o.
HR	→	BA	175	175	HEP Trgovina d.o.o.
HR	←	SI	300	300	HEP Trgovina d.o.o.
HR	→	SI	300	300	HEP Trgovina d.o.o.
HR	←	RS	50	50	HEP Trgovina d.o.o.
HR	→	RS	50	50	HEP Trgovina d.o.o.
HR	←	HU	225	225	HEP Trgovina d.o.o.
HR	→	HU	100	100	HEP Trgovina d.o.o.

Source: HEP-OPS

HEP-OPS' income from monthly auctions for cross-border transfer capacities according to borders in 2007 and 2008 is presented in Figure 3.1.4.

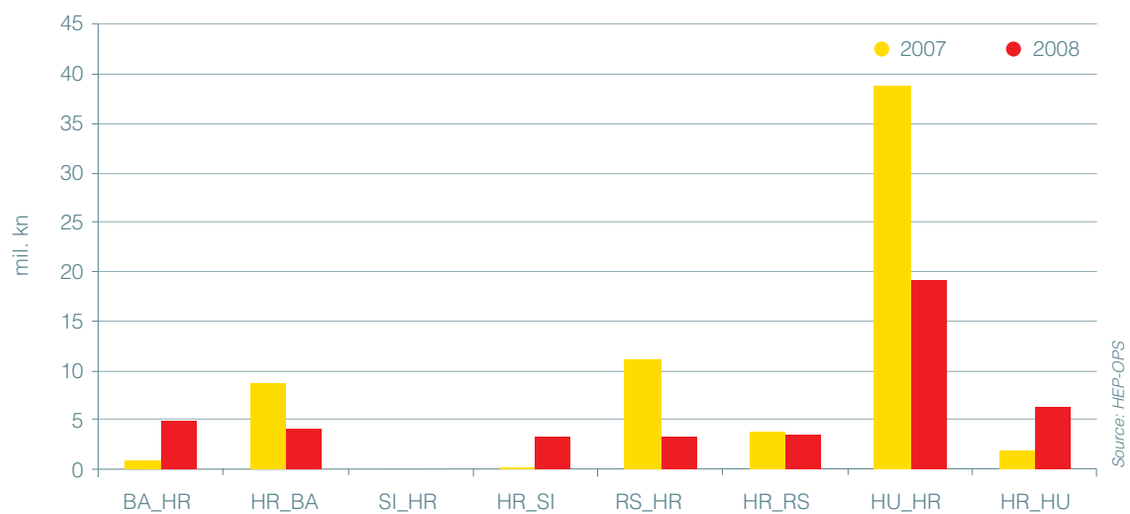
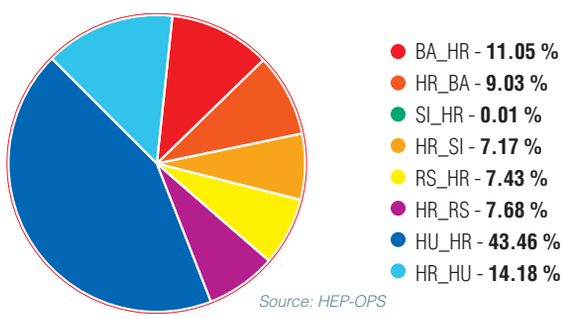


Figure 3.1.4. *HEP-OPS' income from monthly auctions for cross-border transfer capacities according to borders in 2007 and 2008*

The total HEP-OPS' income from monthly auctions in 2008 amounted to HRK 42.7 m. The structure of HEP-OPS' income from annual auctions for cross-border capacities according to borders in 2008 is presented in figure 3.1.5.

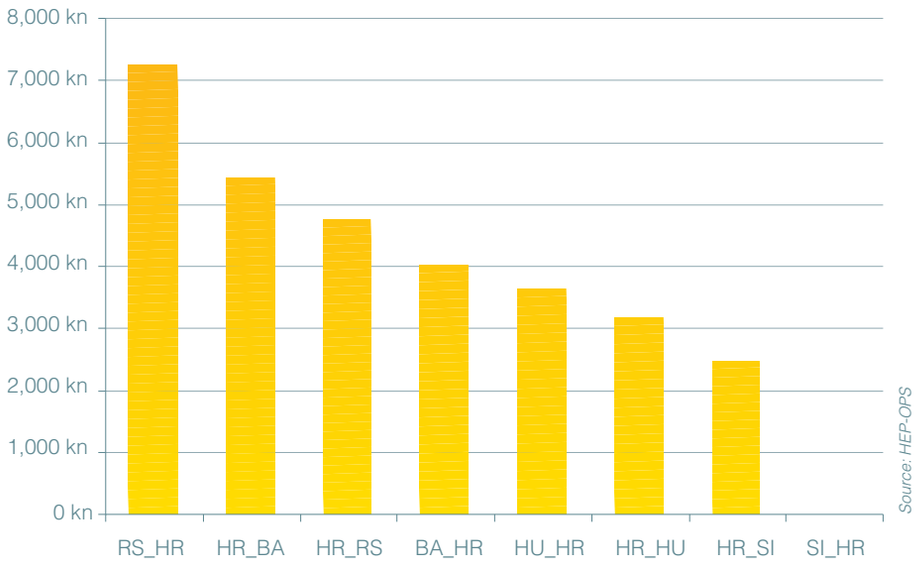
Figure 3.1.5. *The structure of HEP-OPS' income from monthly auctions for cross-border transfer capacities according to borders in 2008*



Source: HEP-OPS

Average realized prices of one MW according to borders at auctions in 2008 are presented in figure 3.1.6.

Figure 3.1.6. *Average realized prices of one MW according to borders at auctions in 2008*



A list of participants and capacities allocated at auctions according to borders in 2008 are presented in tables 3.1.7. and 3.1.8.

Table 3.1.7. *A list of participants and allocated capacities at auctions for borders with the Republic of Slovenia, Republic of Serbia and Bosnia and Herzegovina for 2008 [MW]*

Auction participant	Import	Export	Total
ATEL HRVATSKA d.o.o.	27	98	125
EFT Hrvatska d.o.o.	220	710	930
EZPADA d.o.o.	180	100	280
HEP Trgovina d.o.o.	468	350	818
HSE ADRIA d.o.o.	565	60	625
GEN-I d.o.o.	185	227	412
KORLEA d.o.o.	0	0	0
LUMIUS d.o.o.	0	65	65
MEGAPLAN d.o.o.	55	90	145
VERBUND - APT d.o.o.	0	0	0
RE ENERGIJA d.o.o.	35	13	48
HEP d.d.	761	1.004	1.765
Total	2.496	2.717	5.213

Source: HEP-OPS

Table 3.1.8. *A list of participants and capacities allocated at bilateral auctions for the border with the Republic of Hungary for 2008 [MW]*

Auction participant	Import	Export	Total
D-ENERGIA	47	0	47
E-CAP	20	115	135
EFT	110	410	520
EON	5	110	115
EZPADAH	540	460	1.000
HEP d.d.	550	2.500	3.050
IGET ZAGREB	0	85	85
LUMIUS	0	116	116
RE-HUN	0	130	130
RUDNAP	220	375	595
ATEL ENERGIA	30	40	70
HSE	10	640	650
EDFHUN	167	0	167
HSE	40	120	160
GEN-I BP	0	5	5
STATKRH	0	15	15
CEZ	15	0	15
MASZ	0	5	5
Total	1.754	5.126	6.880

Source: HEP-OPS

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 amounts of tariff items for energy activities of electricity transmission and distribution, pursuant to the Energy Act. The decision on the amounts of tariff items that came into force on 1 July 2008 was adopted by the Government of the Republic of Croatia. Table 3.1.9. represents an overview of average prices for transmission and distribution according to six-month periods, customer categories, as well as change in percentages. The amounts of average prices are determined according to realized income per customer categories, resulting use of certain tariff items from tariff systems and realized electricity consumption.

Table 3.1.9. *Realized average price for transmission and distribution according to six-month periods in 2008*

Customer category	**Average transmission price**			**Average distribution price**		
	1st six months 2008 [p/kWh]	2nd six months 2008 [p/kWh]	Change [%]	1st six months 2008 [p/kWh]	2nd six months 2008 [p/kWh]	Change [%]
High voltage customers	5,1	5,5	7,8	-	-	-
Medium voltage customers	6,9	7,0	1,4	7,2	13,1	81,9
Low voltage customers - business	6,7	7,6	13,4	21,9	22,7	3,7
Low voltage customers - households	5,2	7,4	42,3	23,8	20,4	-14,3
Average of all customers	6,0	7,3	21,7	18,4	18,4	0,0

Source: HEP-OPS

The method used to determine a network operator's costs in the Tariff System for Electricity Transmission, without the Amounts of Tariff Items and the Tariff System for Electricity Distribution, without the Amounts of Tariff Items, which the Agency adopted in December 2006 is based on approved business costs. The basic features of the approved business costs method include:
- acknowledging justified business expenses to an energy operator,
- acknowledging reasonable deadline for the refund of invested funds to the energy operator,
- allocation of costs to users proportional to the amounts they incurred and
- duration of regulatory period lasting one year.

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

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

Tables 3.1.10. and 3.1.11. represent an overview of realized investments by HEP-OPS and HEP ODS in the 2005-2008 period.

Table 3.1.10. *An overview of realized investments by HEP-OPS in the 2005-2008 period.*

Investment type	Realized [HRK m.]			
	2005	2006	2007	2008
Investment preparation	10,9	8,3	11,4	16,9
Modifications and reconstruction	58,9	59,4	129,0	151,9
Revitalization	0,0	0,0	-	0,5
Repairs and renovation	12,0	24,0	10,6	3,1
New facilities	281,4	224,4	169,3	180,6
Other assets	31,2	46,9	16,7	2,6
Total	394,4	363,0	337,0	355,6

Source: HEP-OPS

Tablica 3.1.11. *Prikaz ostvarenih investicija HEP ODS-a u razdoblju 2005.-2008.*

Investment type	Realized [HRK m.]			
	2005	2006	2007	2008
Investment preparation	25,2	13,2	19,6	26,3
Modifications and reconstruction	251,2	218,0	225,3	121,2
Revitalization	13,4	4,6	4,3	2,7
Repairs and renovation	73,4	72,4	101,8	68,6
New facilities	252,3	231,4	267,2	153,5
Ostale investicije	212,8	163,5	157,1	118,2
Electric power conditions and connection	427,9	560,7	597,0	608,5
Development	2,2	0,0	0,0	0,0
Ukupno	1.258,5	1.263,8	1.372,3	1.099,0

Source: HEP ODS

HEP-OPS invested HRK 355.6 m in 2008, whereas the level of investments of HEP ODS was HRK 1,099.0 m, where HRK 608.5 m were invested in resolving electric power conditions and constructing connections.

An overview of important capital facilities of HEP-OPS commissioned in 2008 is presented in table 3.1.12.

Table 3.1.12. *An overview of important capital facilities of HEP-OPS commissioned in 2008*

Name of facility
New power-transmission line 2x220 kV Plomin-Vodnjan (commissioned with 110 kV)
New substation 110/x kV Buzet
Power-transmission lines Pazin-Butoniga-Buzet-Buje commissioned under 110 kV
New power-transmission line 2x110 kV Pračno-Kostajnica (commissioned under 35 kV)
Reconstructed substation 110/35/10 kV Zabok
New power-transmission line DV 110 kV Plomin-Dubrova

Source: HEP-OPS

3.1.3.2 Quality of electricity supply

Quality of electricity is defined and monitored in regard to:
- reliability of power supply,
- voltage quality and
- quality of service for the network users at the point of electricity delivery/takeover.

Reliability is defined as ability of the network to provide continuous supply of electricity in a given time period and is expressed by indicators related to the number and duration of interruptions in supply.

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.).

In 2008, 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. Table 3.1.13. shows interruptions in electricity supply and their duration as well as the estimated undelivered electricity in the HEP-OPS network in 2008.

Table 3.1.13. *Interruptions in electricity supply by HEP-OPS and their duration in 2008*

No. of interruptions in supply	Duration of supply interruptions [min]	Average undelivered electricity [MWh]
131	4.844	666,3

Source: HEP ODS

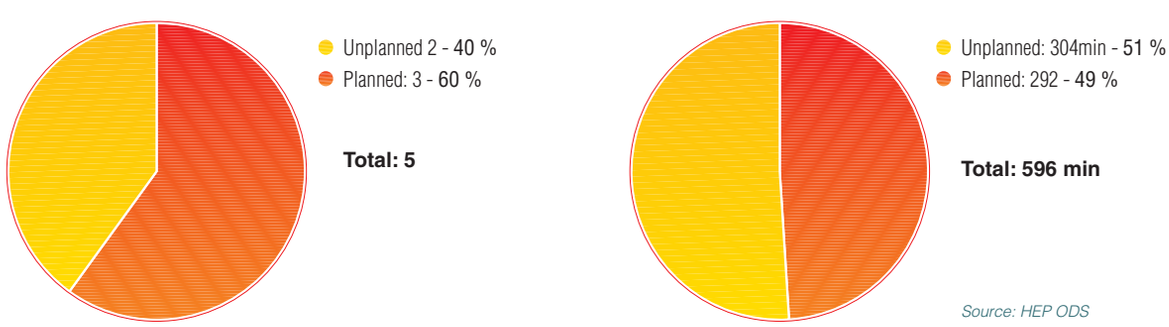
The distribution system operator established in 2006 a system for monitoring power supply interruptions in all distribution areas by manually entering all interruptions lasting longer than 3 minutes into the DISPO program, down to the level of a subarea office as the lowest organizational unit in HEP-ODS.

Reliability indices that are systematically monitored are System Average Interruption Frequency Index (SAIFI) and SAIDI (System Average Interruption Duration Index).

The DISPO program allows the analysis of recorded interruptions and their statistical processing needed for the calculation of defined reliability indices. Planned interruptions are as a rule caused by removal of faulty or aged equipment, regular maintenance, construction of facilities and the network, elimination of malfunctions and other consequences due to force majeure, elimination of malfunctions and other consequences due to activity of third parties, maintenance of third party plants, construction of third party facilities and interruptions in the supply of the distribution network. Forceful interruptions are due to failures in the distribution network, failures caused by the third parties, force majeure and interruptions in the supply of the distribution network.

Reliability indices for 2008 are presented in the Figure 3.1.7., while Figure 3.1.8. represents the comparison of the supply reliability indices trend in HEP ODS from 2006 to 2008.

Figure 3.1.7. *Indicators of power supply reliability in HEP ODS for 2008*



a) SAIFI

b) SAIDI

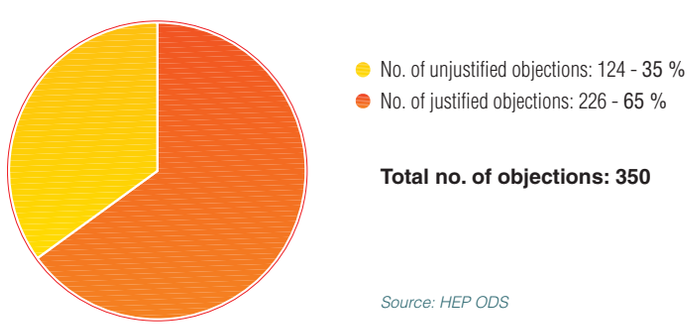
Source: HEP ODS

With the aim of establishing 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 2008.

Figure 3.1.8. *Trend of supply reliability indicators movement in HEP ODS from 2006 to 2008*

Figure 3.1.9. shows statistics of objections regarding the voltage quality in the HEP-ODS distribution network in 2008. Out of a total of 2,282,998 metering points in the HEP ODS distribution network, a total of 350 complaints were received regarding the voltage quality, which makes a 0.02% compared to the total number of metering points. Justified objections amounted to 226 or 0.01% compared to the total number of metering points.

Figure 3.1.9. *Objections regarding the voltage quality in HEP ODS distribution network in 2008*



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

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 separates services in the distribution and electricity supply in the following categories:
1. Service quality within the activities of electricity distribution;
2. Measurement services quality within the activities of electricity distribution;
3. Service quality within the activities of electricity supply;
4. Other attributable services and
5. Business conduct quality control.

The statistics of issued prior connection approvals and connection approvals, and the average number of issuing days in HEP ODS in 2008 are shown in table 3.1.14.

Table 3.1.14. *Issued prior connection approvals and connection approvals and the average number of issuing days in HEP ODS in 2008*

Type of approval	Number of approval	Average number of issuing days
PEES	34.983	26,08
EES - new customers	47.154	28,26
EES - construction site connection	2.430	12,53
EES - temporary connection	665	5,23

Source: HEP ODS

Table 3.1.15. represents the statistics of HED ODS' contracting of electricity supply in 2008.

Table 3.1.15. *Contracting HEP ODS electricity supply in 2008*

Consumption category	No. of concluded contracts	No. of objections to the contracting process	
		Received	Accepted
Households	113.709	78	27
Business	24.968	58	28
Total	138.677	136	55
Share of objections in the number of oncluded contracts		0,10%	0,04%

Source: HEP ODS

Table 3.1.16. shows the statistics of charges and issuing of invoices in HEP ODS in 2008.

Table 3.1.16. *Charging and issuing invoices in HEP ODS in 2008*

Consumption category	No. of issued invoices	Objections to invoices and instalments		Complaints to charging	
		Received	Accepted	Received	Accepted
Households	30.647.084	116.574	95.214	24.808	19.640
Business	2.107.352	15.017	11.304	6.371	5.480
Total	32.754.436	131.591	106.518	31.179	25.120
Udio prigovora u broju izdanih računima	0,40%	0,33%	0,10%	0,076%	

Source: HEP ODS

Table 3.1.17. represents the statistics of collecting debts via regular HEP ODS procedure in 2008.

Table 3.1.17. *Collection of debts trough a regular procedure by HEP ODS in 2008*

Consumption category	No. of paid invoices without dunning letter	No. of objections to the regular collection procedure	
		Received	Accepted
Households	18.829.208	13.968	2.852
Business	1.526.154	1.531	770
Total	20.355.362	15.499	3.622
Share of complaints in the number of invoices paid without dunning letter		0,08%	0,02%

Source: HEP ODS

Table 3.1.18. shows the statistics of replies to questions, requests and complaints received from HEP ODS customers in 2008.

Table 3.1.18. *Replies to questions, requests and complaints from HEP ODS customers in 2008*

Consumption category	No. of questions, requests and complaints from customers	No. of replies within legally provided deadline
Households	1.019.792	893.840
Business	67.725	58.180
Total	1.087.517	952.020
Share in the total No. of questions, request and complaints from customers		88%

Source: HEP ODS

Table 3.1.19. shows the statistic of non-standard services of calculation and issuing of invoices by HEP ODS in 2008.

Table 3.1.19. *Non-standard services of calculation and issuing invoices in HEP ODS in 2008*

Consumption category	No. of non-standard services of calculation and issuing of invoices				No. of complaints on non-standard services of calculation and issuing of invoices	
	Special calculation	Self-reading	Copies of payment slips and certified invoices	Total	Received	Accepted
Households	377.669	178.880	11.937	568.486	2.910	2.608
Business	3.243	-	2.178	5.421	256	34
Total	380.912	178.880	14.115	573.907	3.166	2.642
Share	66,3%	31,2%	2,5%	100,0%	0,6%	0,5%

Source: HEP ODS

Table 3.1.20. represents the statistics of collecting debts via non-standard procedure (sending dunning letters) by HEP ODS in 2008.

Table 3.1.20. *Collection of debts trough a non-standard procedure (sending dunning letters) by HEP ODS in 2008*

Consumption category	No. of sent dunning letters	No. of complaints on dunning letters	
		Received	Accepted
Households	1.428.480	10.637	2.947
Business	385.596	5.376	729
Total	1.814.076	16.013	3.676
Share in the No. of sent dunning letters		0,88%	0,20%

Source: HEP ODS

The Customer Complaint Committee of HEP-ODS held 71 meetings and the results of their work are presented in Table 3.1.21. Out of 192 complaints in total, processed by the Customer Complaint Committee, 54 were accepted and 138 rejected.

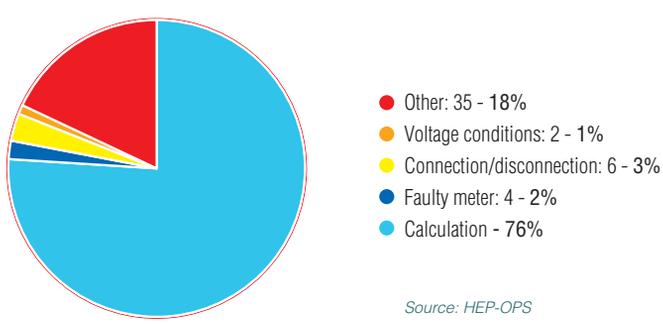
Table 3.1.21. *Analysis of operations of the Customer Complaint Commission of HEP-ODS in 2008*

Meetings held	Total complaints	Total accepted	Total rejected
71	192	54	138

Source: HEP ODS

Complaints structure is shown in Figure 3.1.10.

Figure 3.1.10. *Share of certain types of customer complaints resolved by the Customer Complaint Commission*



Source: HEP-OPS

3.1.4 Unbundling of activities

Legal separation 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 allows HEP ODS to carry out activities of electricity distribution and electricity supply as regards to the customers in the public service system, i.e. households and small businesses.

Independence, transparency and impartiality of the operations of HEP-OPS and HEP ODS are guaranteed through monitoring of their business activities, which is performed by the Agency. HEP-OPS and HEP ODS are obliged to ask for the Agency's approval for respective activities and submit reports on their operations to the Agency.

The Electricity Market Act prescribes that the transmission system operator and the distribution system operator must 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 are obliged to submit an annual report on the implementation of their programs to the Agency and to publish it on their websites.

Pursuant to aforementioned legal obligations, HEP-OPS issued a Program for Provision and Implementation of Transparency, Objectivity and Impartiality Criteria of HEP-OPS' operations and established a Commission for Follow-up and Monitoring of the Program. In 2008, the Commission adopted the annual Report on Program Implementation during the period between June 2007 and June 2008, which was submitted to the Agency and published on its website *(http://www.hep.hr/ops)*. The aforementioned report presents 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 Programs 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 Criteria of operations of HEP-ODS and established a Commission for Follow-up and Monitoring of the Program for Provision and Implementation of Transparency, Objectivity and Impartiality Criteria of operations of HEP-ODS as of January 1, 2008.

The Commission issued the Annual Report on Program Implementation in 2008 and published it on the HEP ODS website (*http://www.hep.hr/ods*). The conclusions of this Annual Report are that the implementation of the Program criteria are at the satisfactory level and that there is no need for their amendments. Furthermore, it was concluded that, in the upcoming period, special attention should be paid to metering data, i.e. the protection of metering data.

HEP ODS publishes notifications relating to tariff systems, electricity prices, instructions on consumption calculation, planned works, advice on rational electricity consumption, etc.) on its website (*http://www.hep.hr/ods*). All legal acts and subordinate and internal regulations of HEP d.d. and HEP ODS may be found on that site, which relate to the electricity buyers, as well as annual reports of HEP ODS with all information and business indicators for the previous year.

3.2 Electricity market development

3.2.1 Electricity trade

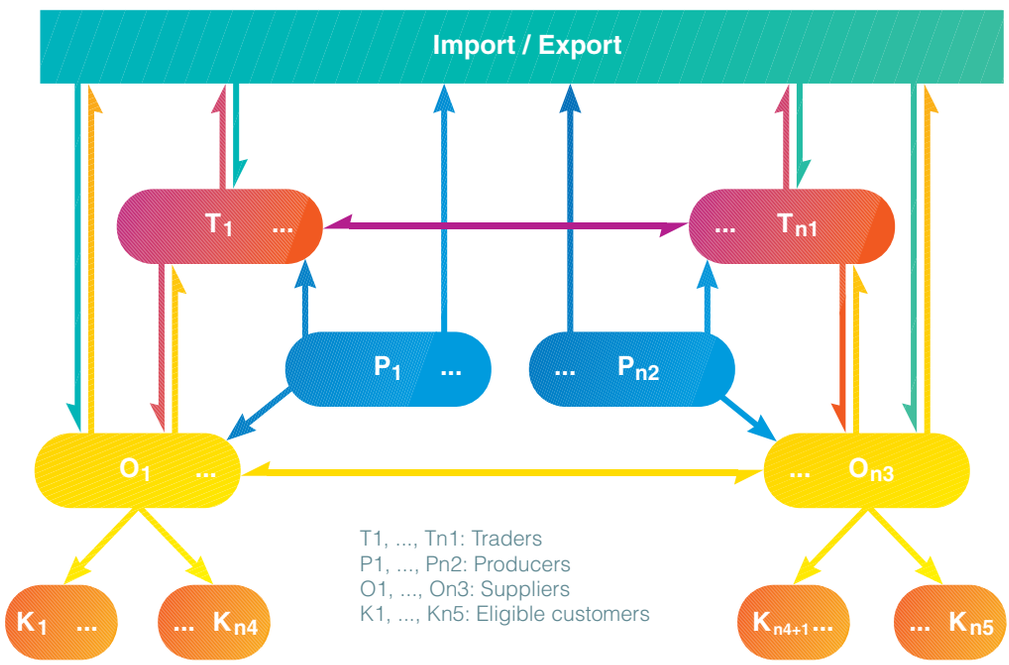
Electricity market in the Republic of Croatia is regulated by the Electricity Market Act and the following secondary legislation:

- 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 and 90/08) which aims to enable contracting electric power balancing services between transmission system operator and balancing service provider, establishing the framework for reference price determination and determination of energy balancing price for subjects responsible for deviations;
- Rules on Balancing the Electric Power System (Official Gazette "Narodne novine", No. 133/06) which regulate activities of operators responsible for deviations, providers of electric power system balancing service, their relationships with transmission system operator, market operator and the method for charging balancing energy;
- Ordinance on Allocation and Use of Cross-Border Transfer Capacities which determines the ways

and conditions for granting and using cross-border capacities. (the Rules were adopted in late 2008, coming into force on 1 January 2009, while in 2008, Rules on Allocation and Use of Cross-Border Transfer Capacity were in force).

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 model of electricity market, the producer may sell electricity generated in own generation facilities to a trader or a supplier. A supplier may purchase electricity from a producer, trader or other supplier and he may sell electricity to eligible customers based on contractual relations or to tariff customers under a regulated scheme or to a trader or other supplier.

A trader may buy electricity from a producer, supplier or other trader and he may sell electricity to a supplier or other trader.

An eligible customer is free to choose a supplier with whom he concludes a contract on electricity supply for eligible customer.

A producer, supplier or trader that wants to participate in procedures and activities on the electricity market must conclude an agreement with HROTE regulating the rights and obligations between the market participant and HROTE.

Table 3.2.1. represents the main elements of the electric power balance-sheet in the Republic of Croatia for 2008 but also for the previous two years. There are presented 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 nuclear power plant Krško (HEP d.d. part), import and export of electricity and total consumption (with losses) in the Republic of Croatia.

Table 3.2.1. *Electricity balance of the Croatian electric power system for 2008. [MWh]*

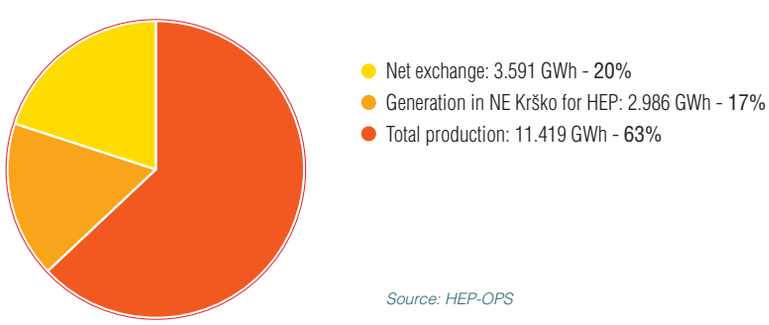
Ord.No.	Electricity balance	2006	2007	2008.
1.	Total production[1]	11.566,2	11.268,6	11.418,8
2.	Production of nuclear power plant Krško for HEP d.d.	2.644,5	2.713,9	2.985,8
3.	Other input into Croatia	10.570,9	9.172,3	9.258,5
4.	Input into Croatia (2+3)	13.215,4	11.886,2	12.244,3
5.	Total procurement (1+4)	24.781,6	23.154,8	23.663,1
6.	Output from Croatia	7.593,2	5.525,1	5.667,3
7.	Total consumption (5-6)	17.188,4	17.629,7	17.995,8
8.	Immediate procurement to the distribution network	443,3	374,8	394,9
9.	Losses in transmission network	544,0	547,1	483,8
10.	Transmission consumption (7-8-9)	16.201,1	16.707,8	17.117,1
11.	Direct customers	947,4	919,7	978,6
12.	Pumping work (Velebit Pump Storage Power Plant) and other own consumption	221,0	272,0	192,9
13.	Delivery to distribution (10-11-12)	15.032,7	15.516,1	15.945,6
14.	Transit (min(4,6))	7.593,2	5.525,1	5.667,3
15.	Transmission losses % (100x9/(10+9+14))	2,2%	2,4%	2,1%

Source: HEP-OPS

[1] *Including the energy taken over from industrial power plants and wind power plants and the generation taken over directly into the distribution network*

The structure of electricity procurement for the needs of the Croatian electric power system is presented in Figure 3.2.2. A major part of the total consumption in 2008 (17.996 GWh, table 3.2.1.) was covered by national generation, which amounted to 11.419 GWh. The electricity generated in the nuclear power plant Krško for the needs of HEP d.d. amounted to 2,986 GWh, whereas net exchange ("Other input into Croatia" - "Output from Croatia") amounted to 3,591 GWh.

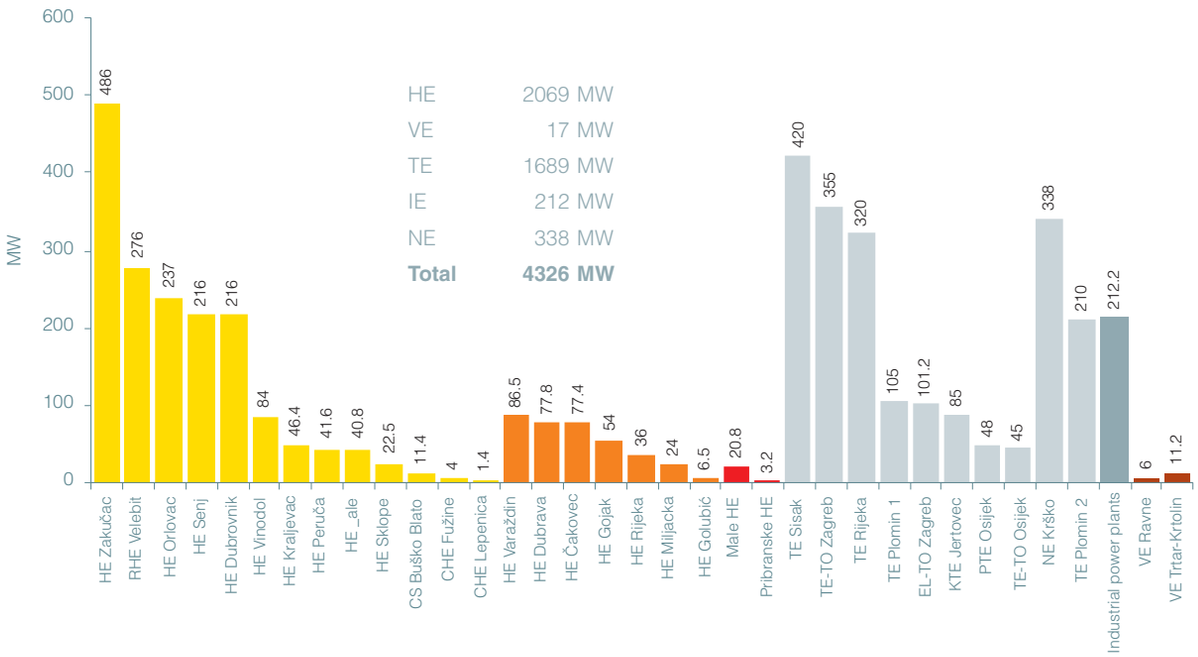
Figure 3.2.2. *The structure of electricity supply for the needs of Croatian electric power system in 2008*



Source: HEP-OPS

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 production facilities are presented in Figure 3.2.3. of the nuclear power plant Krško, whose 50% of production capacities are at the disposal of HEP d.d., are located on the territory of the Republic of Croatia.

Figure 3.2.3. *Available powers of production facilities in 2008*



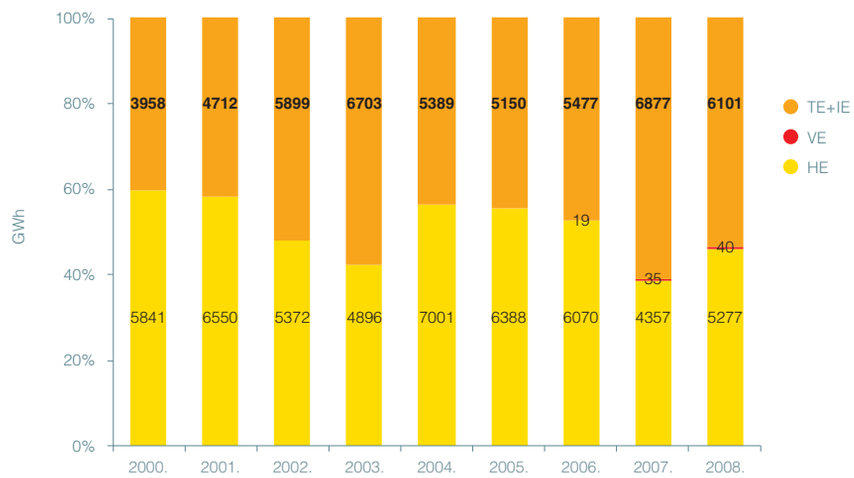
The power plants of HEP Proizvodnja d.o.o. are shown in Figure 3.2.4.

Figure 3.2.4. *Spatial distribution of power plants belonging to HEP Proizvodnja d.o.o. in 2008*

Electricity generation in 2008, from power plants on the territory of the Republic of Croatia (11,419 GWh) consisted of generation from hydro power plants (46.2%), thermal power plants and industrial power plants (53.4%) and wind power plants (0.4%).

The structure of electricity generation from power plants on the territory of the Republic of Croatia is presented in Figure 3.2.5.

Figure 3.2.5. *Electricity generation from power plants on the territory of the Republic of Croatia in the 2000-2008 period*



The duration of peak loads in power plants on the territory of the Republic of Croatia in 2008 is presented in Figure 3.2.6. The longest duration of a peak load happened in thermal power plant Plomin 2 (7,209 h) and thermal power plant Plomin 1 (7,166 h). Among hydro power plants, the longest duration of a peak load occurred in hydro power plant Varaždin (5,005 h), hydro power plant Čakovec (4,552 h) and hydro power plant Dubrava (4,467). Wind power plant VE Trtar Krtolin had twice as long duration of peak load (2,829 h) as VE Ravne (1,442 h). Industrial power plants almost had not delivered electricity into the system. Their duration of peak load amounted to 127 hours.

Figure 3.2.6. *Duration of peak loads in power plants on the territory of the Republic of Croatia in 2008*

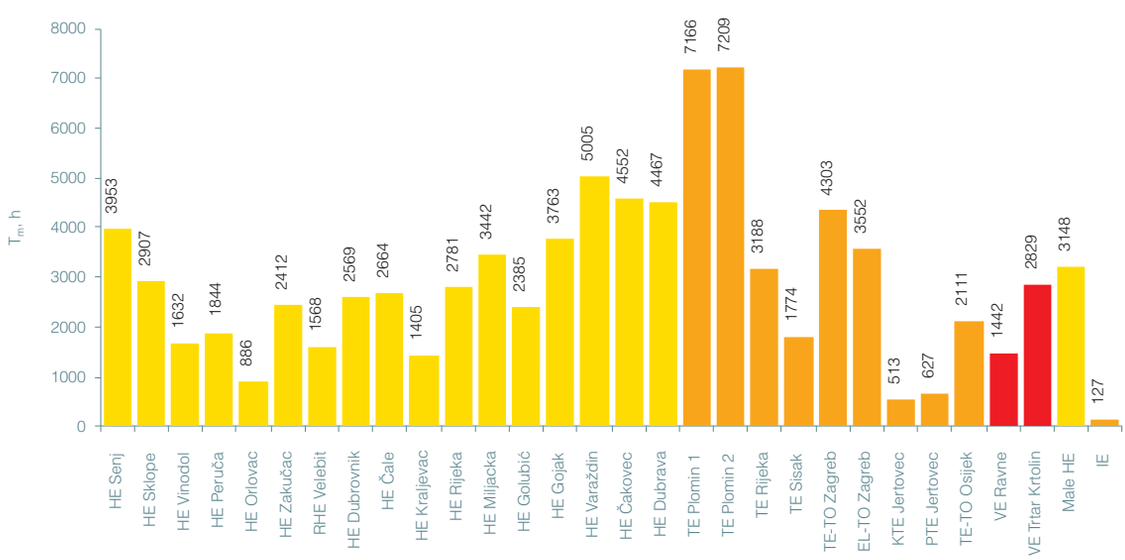


Table 3.2.2. represents a list of energy operators with a licence for electricity generation.

Table 3.2.2. *List of energy operators for electricity generation*

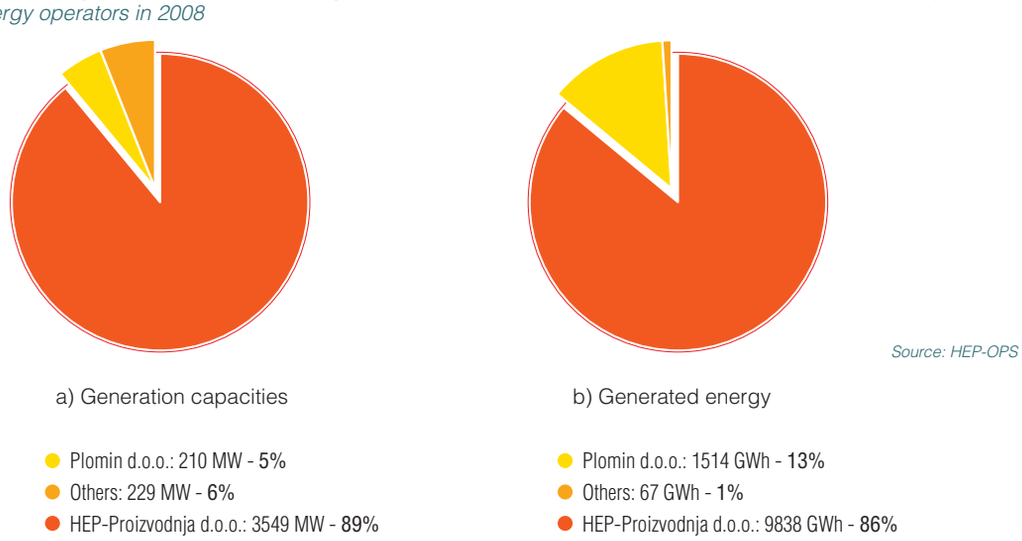
Ord.No.	Name of energy operator	Date of issuing the license	Duration of license [years]
1.	HEP Proizvodnja d.o.o.	10. 12. 2003.	15
2.	Thermal power plant Plomin d.o.o.	11. 12. 2003.	15
3.	INA-INDUSTRIJA NAFTE d.d.	13. 12. 2003.	15
4.	Adria Wind Power d.o.o.	28. 03. 2007.	5
5.	Valalta d.o.o.	26. 06. 2007.	5
6.	EKO d.o.o.	05. 12. 2007.	5
7.	Wind power plant Trtar - Krtolin d.o.o.	07. 01. 2008.	5
8.	Hidro-Watt d.o.o.	10. 01. 2008.	5
9.	TUDIĆ ELEKTRO CENTAR d.o.o.	10. 07. 2008.	5

Source: HEP-OPS

Figure 3.2.7. presents shares in generation capacities and electricity generation from the power plants on the territory of the Republic of Croatia according to energy operators in 2008.

The largest share by far belongs to HEP-Proizvodnja d.o.o., with a 89% share in generation capacities and 86% in generated energy. TE Plomin d.o.o participates with 5% in generation capacities and 13% in generated energy.

Figure 3.2.7. *Shares of generation capacities and generated electricity from power plants on the territory of the Republic of Croatia per energy operators in 2008*



Source: HEP-OPS

Herfindahl-Hirschman index (HHI) of concentration of generation capacities on the territory of the Republic of Croatia is 0.80, whereas the HHI of the concentration of generated electricity from power plants on the territory of the Republic of Croatia is 0.76.

An energy operator may appear on the electricity market in the Republic of Croatia upon obtaining an EIC (ETSO Identification Code) code, concluding a contract on balancing energy with HEP-OPS- and, finally, signing an agreement with HROTE regulating mutual relations on the electricity market. Table 3.2.3. presents energy operators who met all conditions for appearing on the electricity market.

Table 3.2.3. *List of energy operators that fulfilled the conditions for appearance on the electricity market, status on 31 December 2008*

Ord.No.	Name of market participant	EIC	Licence type
1.	Atel Hrvatska d.o.o.	31X-ATEL-HR----F	Trade, mediation and representation on electricity market
2.	EFT HRVATSKA d.o.o.	31X-EFT-HR-----C	Trade, mediation and representation on electricity market
3.	EZPADA d.o.o.	31XEZPADA-HR---4	Trade, mediation and representation on electricity market
4.	GEN-I Zagreb d.o.o.	31X-ISTRABENZ--C	Trade, mediation and representation on electricity market
5.	HEP d.d.	31X-HEP-DD-----9	Trade, mediation 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	Trade, mediation and representation on electricity market
9.	HSE Adria d.o.o.	31X-HSE-ADR-HR-Z	Trade, mediation and representation on electricity market
10.	INTERENERGO d.o.o.	31X-INTEREN-HR-7	Trade, mediation and representation on electricity market
11.	KORLEA d.o.o.	31XKORLEA------H	Trade, mediation and representation on electricity market
12.	KORLEA d.o.o.	31XKORLEA------H	Electricity supply
13.	Lumius d.o.o.	31X-LUMIUS-HR--F	Trade, mediation and representation on electricity market
14.	MEGAPLAN d.o.o.	31X-MEGAPLAN---9	Trade, mediation and representation on electricity market
15.	MONTMONTAŽA d.d.	31XMONTMONTAZA-5	Trade, mediation and representation on electricity market
16.	RE Energija d.o.o.	31X-RE-ENERGIJAY	Trade, mediation and representation on electricity market
17.	RUDNAP energija d.o.o.	31X-RUDNAP-HR--L	Trade, mediation and representation on electricity market
18.	TLM d.d.	31X-TLM-HR-----L	Trade, mediation and representation on electricity market
19.	VERBUND - Austrian Power Trading d.o.o.	31X-APT-HR-----0	Trade, mediation and representation on electricity market

Source: HEP-OPS

Croatian electricity market is based on bilateral trade. Tables 3.2.4. and 3.2.5. present the total amounts of electricity sold on the Croatian electricity market according to amounts from contractual schedules of market participants. Since contractual schedules must be balanced, the amounts shown also represent the total electricity sales on the Croatian market.

Table 3.2.4. *The direction of electricity sold on the Croatian market in 2008 according to contractual schedules of market participants*

Direction of sale	Energy [MWh]
Traders → suppliers	15.545.686
Traders → HEP-OPS d.o.o. (za pokrivanje gubitaka)	570.077
Traders → HEP ODS d.o.o (za pokrivanje gubitaka)	1.710.636
Suppliers → Customers	15.545.686

Source: HROTE

Table 3.2.5. *Total electricity trade in 2008 according to contractual schedules of market participants*

Market participant	Energy [MWh]
Atel Hrvatska d.o.o.	310.736
EFT HRVATSKA d.o.o.	1.419.762
EZPADA d.o.o.	248.217
GEN-I Zagreb d.o.o.	248.644
HEP d.d.	878.400
HEP-Opskrba d.o.o.	15.545.686
HEP-Trgovina d.o.o.	18.441.106
HSE Adria d.o.o.	406.647
INTERENERGO d.o.o.	1.354
KORLEA d.o.o.	542.268
Lumius d.o.o.	44.160
MEGAPLAN d.o.o.	69.206
MONTMONTAŽA d.d.	3.600
RE Energija d.o.o.	50.721
RUDNAP energija d.o.o.	62.014
TLM d.d.	878.400
VERBUND - Austrian Power Trading d.o.o.	60
Total	39.150.981

Source: HROTE

3.2.2 Balancing Electric Power System

Stable functioning of the electric power system requires continuous balance between consumption and generation of electricity. For many reasons, imbalances occur in the functioning of the electric power system that 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, transmission system operator is in charge of balancing the system. In the Republic of Croatia, HEP-OPS is in charge of balancing the system and accordingly of adopting the Rules on Balancing the Electric Power System, with the prior approval of the Agency.

In the Croatian market model, the purpose of the balancing mechanism is penalizing discrepancies between realisation (achieved delivery, i.e. fulfilled electricity takeover) and the amount in the contractual schedule of entities responsible for deviations, which are thus encouraged to deliver realistic contractual schedules.

Operators responsible for deviations, i.e. producers, suppliers and traders, shall conclude contracts on balancing energy with HEP-OPS which shall contain a financial guarantee covering the expenses of balancing energy.

HROTE prepares a market plan for delivery before 1 p.m. of the trading day, based on the delivered contractual schedules from producers, suppliers and traders. If there is a need for correction, HROTE requires market participants to correct the contractual schedules. A market participant is obliged to deliver a corrected contractual schedule before 1 p.m. of the trading day. HEP-OPS prepares an system operation plan for the delivery day before 2:45 p.m. Before 3:45 p.m., HEP-OPS harmonizes the exchange programme of the Croatian electric power system with neighbouring transmission system operators. A market participant may request a change in the contractual schedule of HEP-OPS 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 00:00. HEP-OPS reports to HROTE about all changes in the contractual schedule approved during the delivery day, from 12:00 a.m. to the next business day. According to delivered changes, HROTE prepares a contractual schedule for the market participant based on which balancing energy is calculated.

HROTE calculates balancing energy based on contractual schedules and billing metering data delivered by HEP-OPS and HEP ODS, while HEP-OPS issues invoices for balancing energy.

Deviation prices are determined according to the Methodology on providing balancing energy services in the electric power system issued by the Agency.

Positive deviations (lack of energy) in the observed billing period of balancing (one hour) is 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 prices Cr, which is the mean value of the base load on the European Energy Exchange in Leipzig. HEP-OPS publishes balancing energy unit prices on its website (http://www.hep.hr/ops). Table 3.2.6. shows prices Cr and Cp for 2008 according to months.

Table 3.2.6. *Balancing energy prices for 2008 rounded up to a whole number*

Month	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
C_r *[EUR/MWh]*	57	59	53	67	56	73	70	62	88	86	64	55
C_r *[HRK/MWh]*	410	433	387	490	408	531	505	442	628	615	454	400
C_p *[HRK/MWh]* (from 0 do 6 a.m.)	308	325	290	368	306	398	379	332	471	461	341	300
C_p *[HRK/MWh]* (from 6 a.m. to 5 p.m. and from 11 p.m. to 12 p.m.)	615	649	581	735	612	796	758	663	941	923	681	599
C_p *[HRK/MWh]* (from 5 p.m. to 11 p.m.)	738	779	697	882	734	955	909	796	1130	1107	818	719

Realization of the contractual 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 on the HEP-OPS website (http://www.hep.hr/ops). The Agency issued a positive opinion regarding the temporary use of a unique load profile diagram and stressed the need for further activity in establishing dependable load profile diagrams. In December 2006, HEP ODS started a process of investigating load profile diagrams of typical customer groups and on December 23, 2008 HEP-OPS submitted a Proposal of load profile curves for typical customer groups and rules for their use.

3.2.3 Electricity supply

3.2.3.1 Basic features of electricity consumption

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

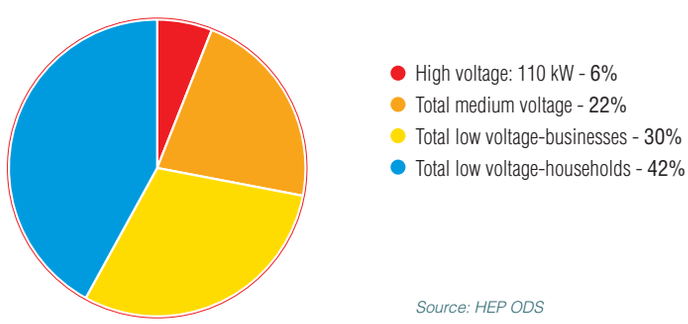
Percentage structure of electricity sales is presented in Figure 3.2.8.

Table 3.2.7. *Number of metering points and sales, average sales and the share of electricity sales according to consumption categories in 2008*

Consumption category	Number of metering points	Sales [MWh]	Sales per metering point [kWh]	Share in total sales [%]
High voltage - 110 kV	29	978,600	33,744,828	6
Medium voltage - 35 kV	74	426,263	5,760,311	3
Medium voltage - 10(20) kV	1.905	3,066,416	1,609,667	19
Total medium voltage	**1,979**	**3,492,679**	**1,764,871**	**22**
Total high and medium voltage	**2,008**	**4,471,279**	**2,226,733**	**28**
Low voltage-businesses (blue)	52,328	331,300	6,331	2
Low voltage-businesses (white)	117,903	1,419,311	12,038	9
Low voltage-businesses (red)	14,647	2,529,296	172,684	16
Niski napon-corporate (orange)	-	240	-	0
Niski napon-streetlights (yellow)	20,136	444,277	22,064	3
Total low voltage - business	**205,014**	**4,724,424**	**23,044**	**30**
Low voltage-households (blue)	789,917	1,817,993	2,301	11
Low voltage-households (white)	1,257,592	4,882,635	3,883	31
Low voltage-households (orange)	-	154	-	0
Low voltage-households (black)	3,139	11,146	3,551	0
Total low voltage - households	**2,050,648**	**6,711,928**	**3,273**	**42**
Total low voltage	**2,255,662**	**11,436,352**	**5,070**	**72**
Total	**2,257,670**	**15,907,631**	**-**	**100**

Source: HEP ODS

Figure 3.2.8. *Shares of particular consumption categories in the total electricity sales*



Source: HEP ODS

Electricity purchase and sales for HEP ODS and corresponding distribution losses for the 2000-2008 period are presented in table 3.2.8.

Table 3.2.8. *Electricity purchase, sales and distribution losses for the 2000-2008 period*

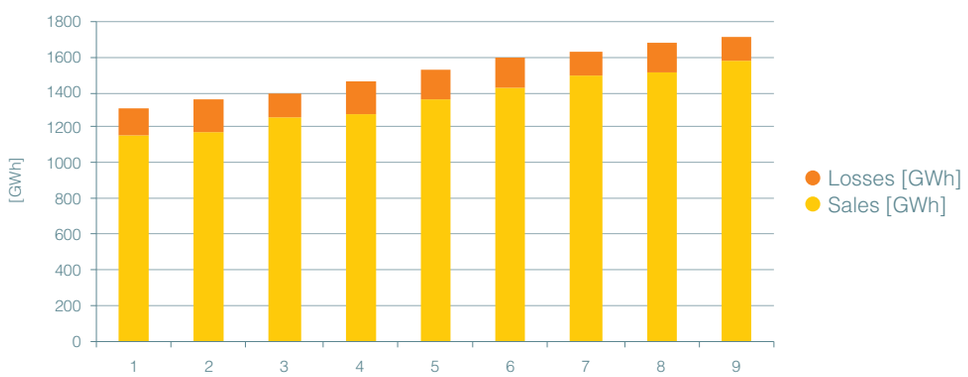
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Purchase *[GWh]*	13.135	13.734	14.022	14.737	15.329	15.942	16.423	16.811	17.130
Sales *[GWh]*	11.712	11.901	12.615	12.854	13.692	14.372	15.059	15.158	15.907
Losses *[GWh]*	1.423	1.833	1.407	1.883	1.637	1.571	1.365	1.653	1.223
Losses % of purchase	10,8	13,3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

Source: HEP ODS

Average annual increase in electricity purchase in the 2000-2008 period amounted to 3.38%, while the average increase in electricity sales in the same period amounted to 3.90%.

Purchasing scheme, i.e. a sum of electricity sales and corresponding distribution losses for the 2000-2008 period is presented in Figure 3.2.9.

Figure 3.2.9. *Purchase, i.e. the sum of electricity sales and losses in distribution for the 2000-2008 period*



Since 2007, the European statistics organization Eurostat has been using a new method for monitoring average electricity prices, defined according to classes as presented in tables 3.2.9. and 3.2.10.

Table 3.2.9. *Consumption classes for households*

Consumption class	Lowest consumption [kWh/g]	Highest 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 businesses*

Consumption class	Lowest consumption [MWh/g]	Highest 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

Table 3.2.11. presents indicative peak loads for businesses according to the Agency's estimates.

Table 3.2.11. *Indicative peak loads for businesses*

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

Tables 3.2.12 and 3.2.13. present classification of eligible customers according to their consumption and number and per consumption classes defined by the Eurostat's methodology.

Table 3.2.12. *Consumption classes for households*

Consumption class	Consumption %	Customers %
Da	3,0	27,8
Db	12,9	23,5
Dc	32,4	28,1
Dd	45,7	19,6
De	6,0	1,0

Izvor: HEP ODS

The largest share of sold electricity belongs to classes D.d. (large households) and Dc (medium households). As far as the number of customers (metering points) is concerned, the largest share belongs to class Dc (medium households) and class Da (very small households).

Table 3.2.13. Consumption classes for businesses on low and medium voltage

Consumption class	Businesses on low voltage		Businesses on medium voltage	
	Consumption %	Customers %	Consumption %	Customers %
Ia	18,5	79,0	-	9,2
Ib	56,9	20,5	4,9	38,5
Ic	17,9	0,4	19,5	30,8
Id	6,7	0,1	64,1	20,9
Ie	-	-	11,5	0,6

Izvor: HEP ODS

In the business category using low voltage the greatest share of electricity sold falls into consumption class Ib, whereas the greatest share of the number of customers is in the to small businesses class, i.e. Ia.
With the customers using medium voltage, the most electricity is sold in the consumption class Id, whereas the greatest number of customers (metering points) involves consumption classes Ib and Ic.

3.2.3.2 Electricity prices for end customers in the Republic of Croatia

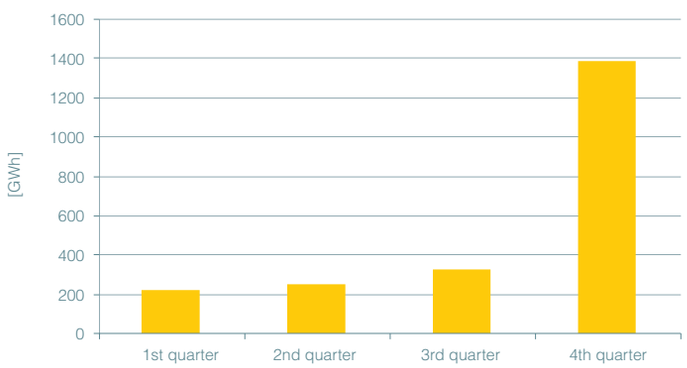
Electricity prices in the Republic of Croatia

Four legal entities had licences for electricity supply activity in the Republic of Croatia in 2008 and these are:
- HEP ODS,
- HEP Opskrba d.o.o.,
- Korlea d.o.o. and
- HEP Toplinarstvo d.o.o.

In 2008, all customers using high voltage and a considerable number of customers using medium voltage concluded supply contracts, i.e. used their eligibility status. Figures below present an overview of electricity sales to eligible customers, according to quarters in 2008 and the share of individual customer categories (compared to their total consumption) that purchased electricity from suppliers on the market in December 2008.

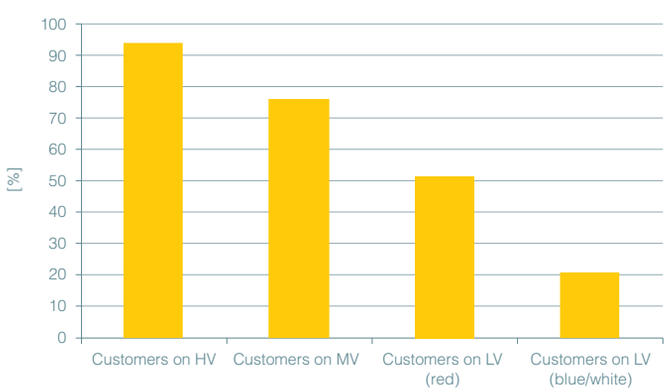
Figure 3.2.10. represents electricity sold to customers according to quarters in 2008, whereas Figure 3.2.11. presents percentage shares of particular customer categories on the market in electricity consumption in December 2008.

Figure 3.2.10. *Electricity sold to eligible customers, per quarters in 2008 [GWh]*



Source: HEP-OPS

Figure 3.2.11. *Shares of particular customer categories on the market in relation to total consumption and customer categories in December 2008*



Source: HEP-OPS

Average total sales prices for customers per tariff categories in the 2005-2008 period are presented in table 3.2.14. All prices are established based on tariff items from the then valid tariff systems for regulated electric power activities. Table 3.2.15. shows average electricity prices (without the network use fee) for eligible customers according to quarters in 2008.

Table 3.2.14. *Average total sales prices for end customers in the 2005- 2008 period [HRK/kWh]*

Customer category	2005	2006	2007	2008 (1-6.)	2008 (7-12.)
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
Customers on low voltage - businesses, without street lighting	0,57	0,59	0,59	0,59	0,70
Customers on low voltage - street lighting	0,47	0,49	0,49	0,49	0,60
Customers on low voltage - businesses total	0,56	0,58	0,58	0,58	0,69
Low voltage customers - households	0,56	0,58	0,58	0,58	0,70
Total customers on low voltage	0,56	0,58	0,58	0,58	0,70
Total tariff customers	0,52	0,54	0,54	0,54	0,64

Source: HEP ODS

Table 3.2.15. *Average electricity prices for eligible customers in 2008 [HRK/kWh]*

Quarter	Price
I.	0,320
II.	0,279
III.	0,304
IV.	0,377

Source: HEP ODS

Electricity prices in European countries

Figures 3.2.12. and 3.2.13. present a trend of increase in prices of electricity (including the fees for network use) in the EU countries for customers in households and businesses category. There are no available data for some years.

Figure 3.2.12. *An overview of changes in total prices of electricity in EU countries for customers in household category Dc, from 2001 to 2008, with taxes and fees*

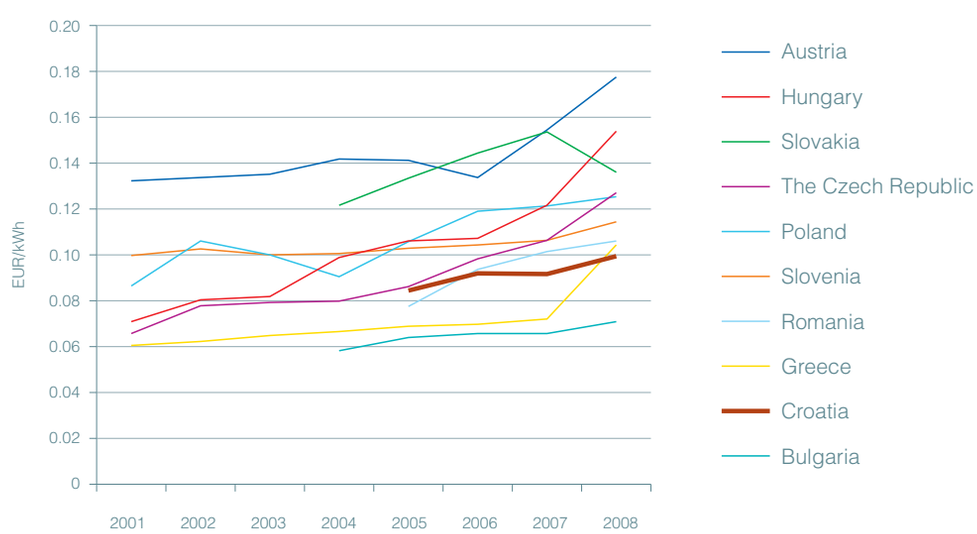
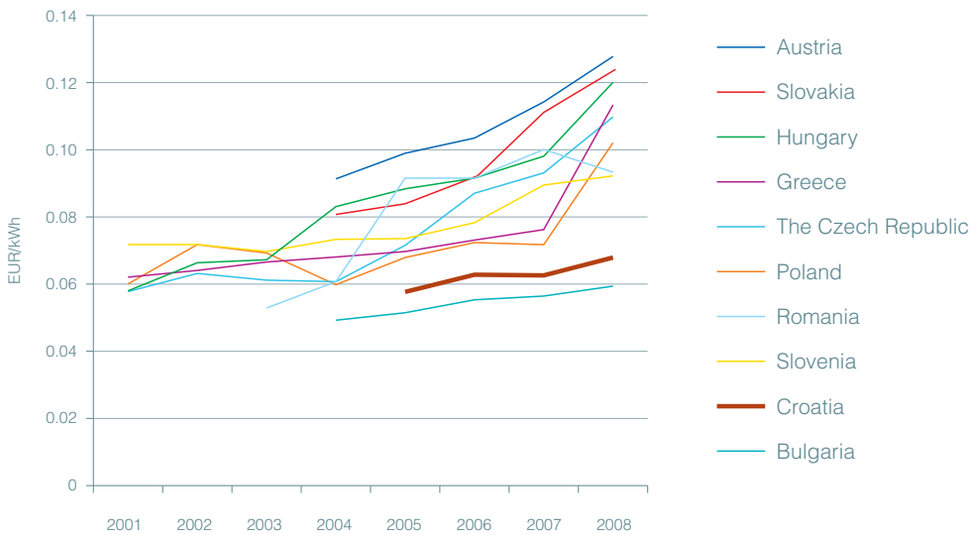


Figure 3.2.13. *An overview of changes in total prices of electricity in EU countries for customers in business category Id, from 2001 to 2008, with taxes and fees*



Average total prices of electricity in the second half of 2008 in EU countries and the Republic of Croatia for households from Dc consumption class and businesses from Id class are presented in figures 3.2.14. and 3.2.15. The prices are presented with included taxes and other fees.

Figure 3.2.14. *Total prices of electricity for Dc category households, with taxes and fees for the second half of 2008*

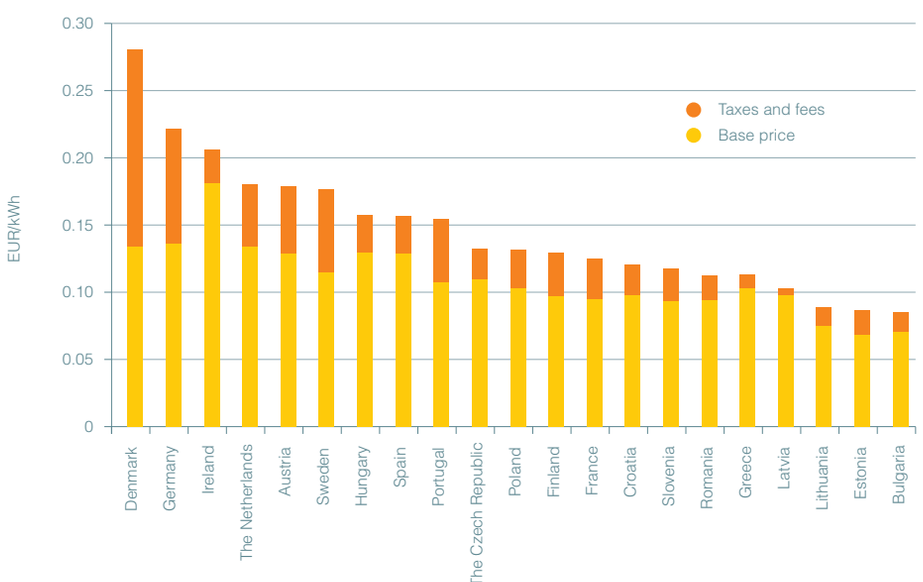
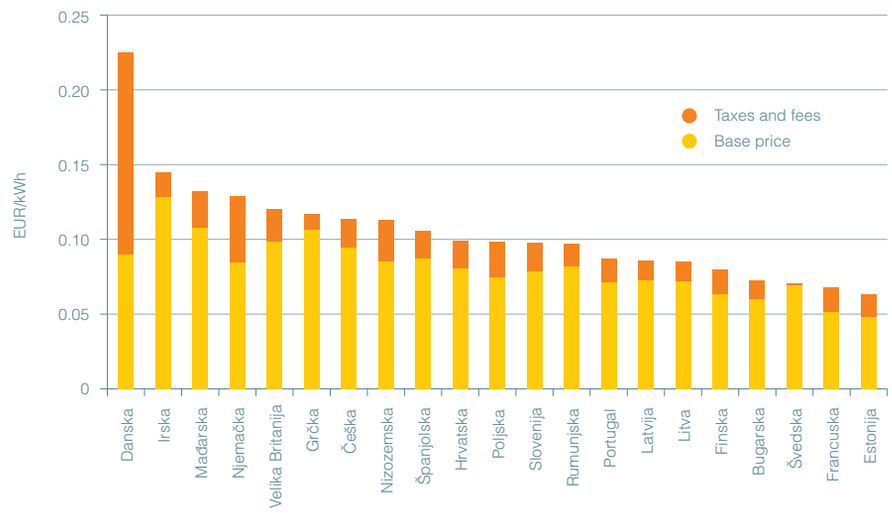


Figure 3.2.15. *Total prices of electricity for business category Id , with taxes and fees for the second half of 2008*



Electricity prices for characteristic customers in the Republic of Croatia

Table 3.2.16. presents the features of typical electricity buyers in the Republic of Croatia, according to consumption categories. For customers in Figures from 3.2.16. to 3.2.20., the structure of the total price per individual integral parts is presented.

Table 3.2.16. *Features of typical electricity buyers in the Republic of Croatia*

Type of customer	Code	Annual consumption [MWh]	Peak load [MW]	Day/night	Category according to tariff systems
Very large industry	If	100.000	15	60/40	HV
Large industry	Ie	24.000	4	60/40	MV (35 kV)
Medium-sized industry	Id	2.000	0.5	65/35	MV (10 kV)
Medium-sized business	Ib	150	0.05	70/30	LV (red)
Medium households	Dc	3,5	-	70/30	Households (white)

Figure 3.2.16. *Structure of prices for customers from If class, the second half of 2008*

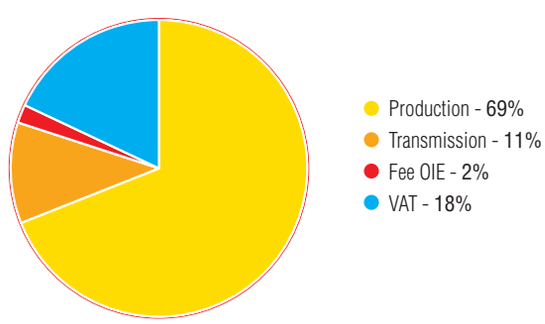


Figure 3.2.17. *Structure of prices for customers from Ie class, the second half of 2008*

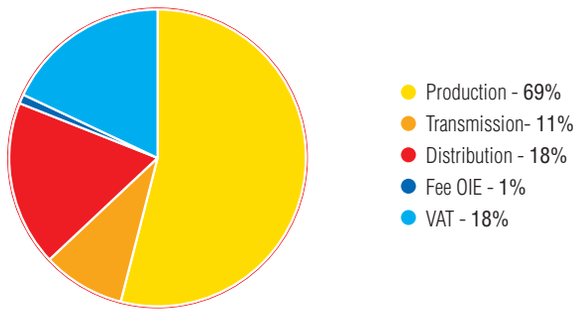


Figure 3.2.18. *Price structure for customers from Id class, the second half of 2008*

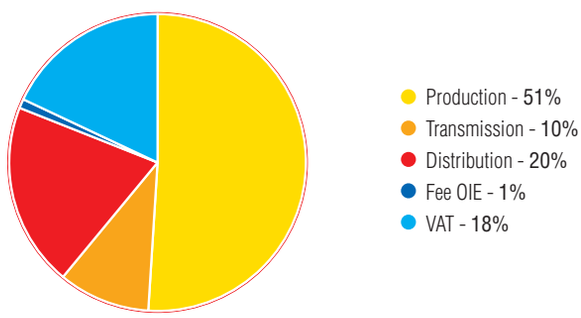


Figure 3.2.19. *Price structure for customers from Ib class, the second half of 2008*

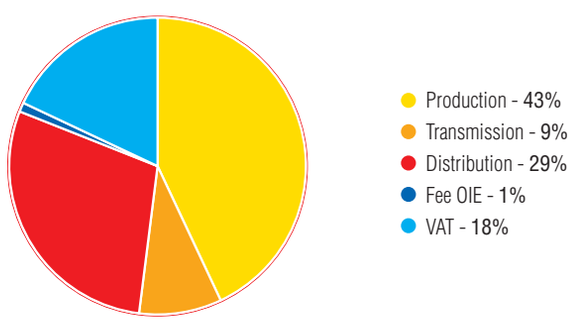
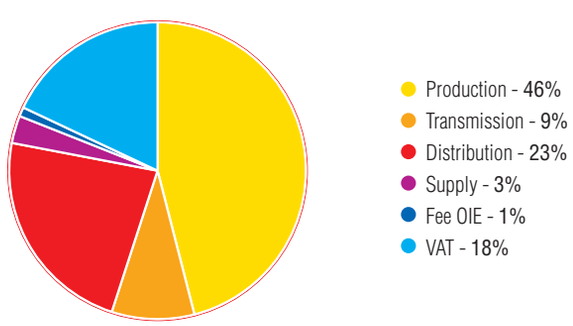


Figure 3.2.20. *Price structure for customers from Dc class (households),the second half of 2008*



3.2.3.3 Customer protection

In 2008, the Agency received a total of 132 cases, of which 125 or 95% were resolved in 2008. Cases from the electricity sector are presented in table 3.2.17.

Table 3.2.17. *Cases from the electricity domain in 2008*

Description	Number	Share [%]
Complaints and claims	84	63.6
Opinion, interpretation or instruction of the Agency required	25	18.9
Request for compliance/approval of the Agency	7	5.3
As notice to the Agency	7	5.3
Report, questionnaire, data delivery by the Agency required	3	2.3
Report or questionnaire/data delivered to the Agency	6	4.6
Total	132	100

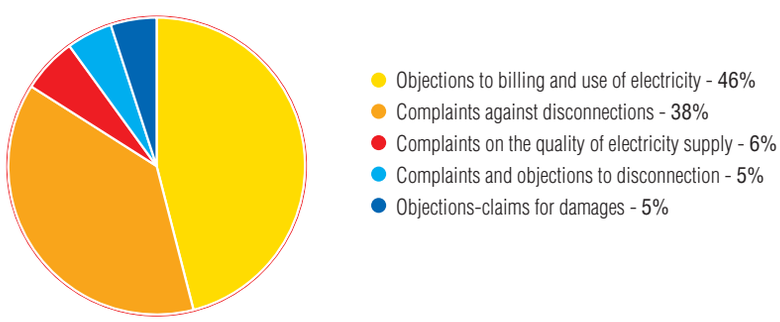
In 2008, the Agency received 84 complaints and objections, of which one relates to HEP-OPS' work and 83 relate to HEP ODS' work. The statistics of received complaints and objections are presented in table 3.2.18.

Table 3.2.18. *Groups of complaints and objections from the field of electricity in 2008*

Ord. no.	Description	Number	Share
1.	Complaints regarding billing and use of electricity		46%
1.1.	Complaints regarding registered unauthorized use of electricity - excess power	5	
1.2.	Complaints regarding registered unauthorized use of electricity - energy	9	
1.3.	Billing complaints	25	
2.	Complaints regarding the quality of electricity supply		6%
2.1.	Complaints about the continuity of delivery	5	
2.2.	Complaints about voltage quality	0	
2.3.	Complaints about the quality of services	0	
3.	Complaints related to connection		38%
3.1.	Complaints regarding rejected requests for issuing a prior connection approval during the procedure of issuing a site permit	2	
3.2.	Complaints regarding conditions from issued prior connection approval	12	
3.3.	Complaints regarding rejected requests for issuing a prior connection approval	5	
3.4.	Complaints regarding non-fulfilment of provisions of contract on network connection	3	
3.5.	Complaints regarding connection fee	5	
3.6.	Complaints regarding conditions from issued connection approval	4	
3.7.	Complaints regarding rejected requests for issuing a connection approval	1	
4.	Complaints and objections to disconnection		5%
4.1.	Complaints regarding disconnection from electricity network	3	
4.2.	Objections to suspensions of electricity supply	1	
5.	Objections - claims for damages	4	5%
	Total	84	100%

Figure 3.2.21. shows shares of complaints and objections per respective categories in the total objections stated within the electricity field received by the Agency in 2008.

Figure 3.2.21. *Shares of complaints and objections according to categories from the field of electricity in 2008*



Out of 83 complaints and objections to the work of HEP ODS, one is general, while others refer to particular distribution areas.

Out of received complaints and objections, the Agency was the competent authority in 35 cases, i.e. 42% Table 3.2.19. shows complaints and objections from the electricity field in 2008 which were not under the Agency's jurisdiction.

Table 3.2.19. *Complaints and objections from the electricity field in 2008 which were not under the Agency's jurisdiction.*

Type of objection/complaint	Number	Share [%]
Objections regarding the billing of electricity consumption	20	57
Objections to the quality of electricity supply - continuity of supply	2	6
Complaints regarding registered unauthorized use of electricity - energy	4	11
Complaints regarding registered unauthorized use of electricity - excess of power	5	14
Complaints regarding non-fulfilment of provisions of the contract on the connection	1	3
Objections - claims for damages	3	9
TOTAL	35	100

3.3 Generation of electricity from renewable energy sources and cogeneration

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

This system was introduced in 2007 and it is regulated by the following secondary legislation:
- Tariff system for Electricity Production 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 Producer (Official Gazette "Narodne novine", No. 67/07),
- Regulation on Fees For Encouraging Production of Electricity from Renewable Energy Sources and Cogeneration (Official Gazette "Narodne novine", No. 33/07, 133/07 and 155/08) and
- Regulation on Minimum Share of Electricity Produced from Renewable Energy Sources and Cogeneration, Production of Which Is Stimulated (Official Gazette "Narodne novine", No. 33/07).

HROTE buys off electricity from eligible producers, i.e. from plants for which the producer 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 their supplier the agreed electricity price as well as the fee for encouraging electricity production from renewable energy sources and cogeneration.

The Agency issues rulings to all legal and natural persons on granting the eligible electricity producer status. Table 3.3.1. shows the number of rulings issued in 2008.

Table 3.3.1. *Decision issued regarding the eligible electricity producer status in 2008*

Type of plant	No. of issued rulings		Plant power	
	Preliminary	Final	Prior	Final
Solar power plants	2	1	19 kW	7,14 kW
Hydro power plants	-	2	-	30 kW
Wind power plants	4	0	63,6 MW	-
Total	6	3	63,619 MW	37,14 kW

The Regulation on the Minimum Share of Electricity Produced from Renewable Energy Sources and Cogeneration whose production is stimulated prescribes the objectives of the Republic of Croatia regarding the production of electricity in power plants using renewable energy sources and cogeneration plants. Value of the minimum share of electricity produced 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

produced in cogeneration plants in the category of public heating plants producing electricity and thermal energy for the supply of customers and not for own purposes.

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

On July 1, 2007, the fee for promoting electricity production from renewable energy sources and cogeneration started to be charged to customers, pursuant to the Regulation on Incentive Fees for Promoting Electricity Production from Renewable Energy Sources and Cogeneration. Pursuant to the 2007 Regulation, the fee for stimulation 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 production is presented in table 3.3.2.

However, despite the extraordinary interest for incentives shown by investors, there is a relatively small number of plants in 2007 and 2008 which concluded buy-off with HROTE and/or started its operation Therefore the fees were kept at the same level as in 2007, pursuant to the Regulation on Amendments to Regulation on Incentive Fees for Promoting Electricity Production from Renewable Energy Sources and Cogeneration (Official Gazette “Narodne novine”, No. 133/07 and 155/08).

Table 3.3.2. *An overview of the prices and production from eligible plants*

Year	2007[2]	2008	2009	2010
The amount of the fee regulated by the Regulation from 2007 [HRK/kWh]	0.0089	0,0198	0,0271	0,035
Fee amount [HRK/kWh]	0.0089	0.0089	-	-
Power of plants that were granted eligible producer status and started operating during the year [MW]	5,95	11,23714	-	-
Cumulative plant power in incentive system (at year end) [MW]	5,95	17,18714	-	-
Estimated electricity sales to customers[3] [GWh]	7.683	15.827	16.302	16.791
Energy produced in eligible plants [MWh]	0,477	38,064	-	-

[2] *The incentive system was organized only in late June 2007, therefore only the period from July to December 2007 is considered.*
[3] *Assumed consumption increase is 3%.*

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 state. 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 (supply transmission line via Slovenia (Rogatec-Zabok)) transports gas up 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 network of main gas and regional gas pipelines is presented in Figure 4.1.1.

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

Plinacro d.o.o. governs with its infrastructure through four regions of gas transmission: Gas transmission region “East Croatia” (based in Donji Miholjac), Gas transmission region “Central Croatia” (based in Popovača), Gas transmission region “North Croatia” (based in Zabok) and Gas transmission region “West Croatia” (based in Rijeka).

The total length of the gas transmission system in the Republic of Croatia at the end of 2008 was 2,113 km, of which 454 km were gas pipelines under the working pressure of 75 bars, 1,599 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. There are 19 entry measuring stations, 154 measuring-reduction stations, 11 measuring stations and 257 measuring lines within the gas transmission system. Also the gas transmission system includes the National Dispatching Centre, i.e. communication system and centre of remote supervision and control of 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 2008, transmission system capacities were sufficient to meet the needs of all transmission system users. There was no capacity congestion. Balancing of the transmission system is preformed daily by using operating accumulation and underground natural gas storage Okoli (hereinafter: PSP Okoli).

Investment activities of Plinacro d.o.o. in 2008 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 activities included preparations for the construction of main gas pipelines Bosiljevo-Split and Vodnjan-Umag and the completion of the remaining facilities of the first development-investment phase, regional gas pipelines Nova Kapela-Požega, Bjelovar-Sveti Ivan Žabno, Dobrovac-Omanovac and Varaždin-Čakovec-Šenkovec. The construction of the first part of the gas pipeline system of Lika and Dalmatia (from OPČS Podrebar to BS-2 Josipdol, gas pipeline to MRS Ogulin and MRS Ogulin) and technical inspections was performed. Works on the construction of main gas pipeline Bosiljevo-Split commenced in November 2007, and this pipeline is considered as the backbone of the gas pipeline system of Lika and Dalmatia, besides Split-Ploče pipeline and the key facility of the second development-investment phase, in which EUR 443 mil. shall be invested, which means that the present annual capacity of approx 5 bil. m^3 should increase to over 10 bil. m^3 of natural gas.

Location permits have been obtained for the second and third phase of the gas pipeline system in 2008 and building permits for the second and third phase of the gas pipeline system are pending. Deviations from the planned investment in the group of regional gas pipelines were mainly due to problems in the preparation and approval of the Environmental Impact Study for the Vodnjan-Umag gas pipeline. As regards to the regional gas pipeline Kutina-Dobrovac and Kukuljanovo-Omišalj, there occurred deviations from the planned investment due to problems in the preparation and approval of the Environmental Impact Study and consequently in the obtaining of the location permit.

As to the interconnecting gas pipeline Croatia-Hungary, Plinacro d.o.o. and the Hungarian transmission system operator Földgázszállító Zrt. (hereinafter: FGSZ) signed a letter of intent on the construction of interconnection gas pipeline Slobodnica-Donji Miholjac-Dravaszerdahely-Varosföld on 3 July 2008. Within the framework of development projects,

intensive activities were carried out relating to potential realization of the Ionian-Adriatic Pipeline - IAP, which would enable connecting the Croatian gas pipeline system with the announced Trans Adriatic Pipeline - TAP project.

According to data from Plinacro d.o.o., total transported quantities of natural gas in the Republic of Croatia in 2008 amounted to 3,452,227,615 m^3, which is 2.7% more than the total transported quantity in 2007. Total losses of natural gas in the transmission system amounted to 0.05% in 2008. The greatest daily quantity of transported gas during the peak load months amounted to 13,537,198 m^3/day, 12,212,415 m^3/day during medium load months, and 6,616,509 m^3/day during basic load months. The greatest achieved gas flow per hour in the transmission system in 2008 amounted to 682,000 m^3/h. The total technical capacity of all entries into the transmission system on 31 December 2008 amounted to 740.000 m^3/h.

According to data delivered to Plinacro d.o.o., technical capacities are defined for three entries into the transmission system. Rogatec - 210,000 m^3/h, Terminal Pula - 290,000 m^3/h and PSP Okoli - 240,000 m^3/h. The greatest gas flow per hour at the level of individual entries into the transmission system in 2008 was realized at the entry PSP Okoli in the amount of 237,402 m^3/h. For all three exits from the transmission system, on 31 December 2008., the total technical capacity amounted to 1,603,000 m^3/h. According to data delivered by Plinacro d.o.o., technical capacities are established for three groups of exits from the transmission system: distribution systems - 825,000 m^3/h, final customers directly connected to the transmission system - 618,000 m^3/h and PSP Okoli - 160,000 m^3/h. The greatest gas

flow per hour at the level of individual exits from the transmission system in 2008 occurred at the exit into distribution systems, in the amount of 473,781 m^3/h.

The price of natural gas transmission is defined 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 defines three tariff items referring directly to natural gas transmission in the months of peak, medium and basic load. The amount of tariff items is prescribed by the Government of the Republic of Croatia and it is equal for all users of the transmission system. Table 4.1.1. presents the amounts of tariff items for natural gas transmission for 2008 and 2009.

Table 4.1.1. *Amounts of tariff items for natural gas transmission for 2008 and 2009.*

Transport period	Decision of the Government of the RC (NN 14/08) - as of 1 March 2008	Decision of the Government of the RC (NN 154/08) - as of 1 January 2009
Peak load months *(January, February, November, December)*	T_{peak}= 4,99 HRK per Sm^3 a day	T_{peak}= 5,16 HRK per Sm^3 a day
Medium load months *(March, April, May, June, September and October)*	T_{medium}= 4,16 HRK per Sm^3 a day	T_{medium}= 4,30 HRK per Sm^3 a day
Basic Load Months *(July and August)*	T_{basic}= 2,49 HRK per Sm^3 a day	T_{basic}= 2,58 HRK per Sm^3 a day

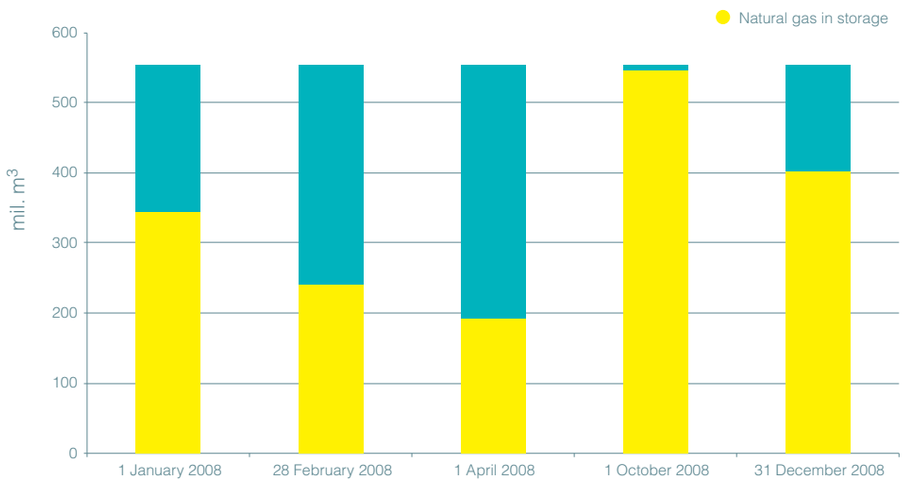
The price of natural gas transmission is defined according to previously rented and real use of capacity of the transmission system of an individual user in a year. The average price of natural gas transmission in 2008 for the gas suppliers of final customers connected to the distribution system amounted to 0.192 HRK/m^3, which is 26.3% more than the average transmission price for gas suppliers in 2007. The average price of natural gas transmission in 2008 for 27 final customers directly connected to the transmission system amounted to 0.150 HRK/m^3, which is 31.6% more than the average transmission price for final customers directly connected to the transmission system in 2007. Total average price of natural gas transmission in 2008 for all users of the transmission system amounted to 0.168 HRK/m^3, which is 30.2% more than the total average price of natural gas transmission in 2007.

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 2008 was the energy undertaking INA-INDUSTRIJA NAFTE d.d. (hereinafter: INA d.d.). PSP Okoli is used for storage of natural gas in the Republic of Croatia and its geographical position is presented in Figure 4.1.1.

According to the data from INA d.d., the working volume of PSP Okoli amounted to 553 mil. m^3 in 2008. Daily withdrawal capacity amounted to 5.76 mil. m^3/day, and daily injection capacity to 3.84 mil. m^3/day. In 2008, a total of 365 mil. m^3 were injected and 308 mil. m^3 of natural gas drawn in PSP Okoli. The status of natural gas stocks in PSP Okoli on certain days in 2008 is presented in Figure 4.1.2.

Figure 4.1.2. *Status of natural gas supplies in PSP Okoli on particular days in 2008*



The price of natural gas storage in the Republic of Croatia since the beginning of PSP Okoli operation until 2008 (including 2008) was a part of procurement price of natural gas at which INA d.d. sold the natural gas to gas distributors and final customers connected to the transmission system. The price of natural gas storage is defined based on the Tariff System for Storage of Natural Gas that 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.

Table 4.1.2. presents the amounts of tariff items based on said Decision.

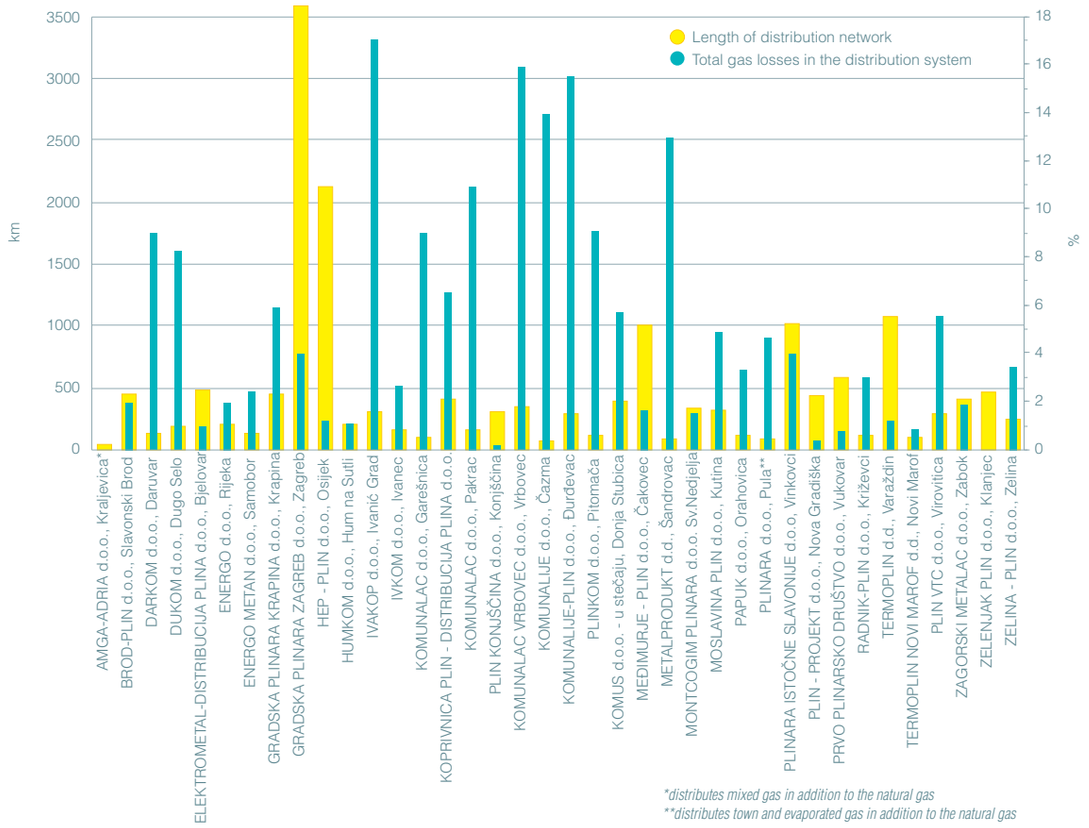
Table 4.1.2. *Amounts of tariff items for natural gas storage*

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. Gas distribution in the Republic of Croatia is performed by 38 energy undertakings[4]. Total distributed quantities of natural gas in 2008 amounted to 1,320 m. m^3, of which natural gas was distributed in the amount of 1,309 m. m^3, which is 7.4% more than the distributed amount of natural gas in 2007. Out of the total amount of gas distributed 713 mil. m^3 (54%) was distributed to the users in the household tariff group and 607 m. m^3 (46%) to the users in the commercial tariff group. The total number of distribution system users in 2008 amounted to 598,536, of which 557,904 belonged to the household tariff group and 40,632 users came from commercial tariff group. Out of the total number of commercial tariff group users in 2008, 40,512 users used 1 mil. m^3 or less of natural gas a year and 120 users used more than 1 mil. m^3.

Figure 4.1.3. *Comparison of the length of the distribution network and gas losses per distribution system operators in the Republic of Croatia in 2008*



**distributes mixed gas in addition to the natural gas*
***distributes town and evaporated gas in addition to the natural gas*

[4] *Including energy undertaking Amga-Adria d.o.o., Kraljevica, which besides the natural, also supplies mixed gas and energy operator Plinara d.o.o., Pula, that also distributes town and vaporized gas.*

The total length of the distribution network in the Republic of Croatia at the end of 2008 amounted to 17,577 km, which is 0.9% more compared to the total length of the distribution network in 2008. Average gas losses in the distribution network amounted to 3.4%[5].

Comparison of the length of the distribution network and gas losses per distribution system operators in the Republic of Croatia in 2008 are presented in Figure 4.1.3., and the geographical position of the distribution areas of distribution system operators in 2008 are presented in Figure 4.1.4.

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 2008.*

Basic information 2008

Total length of pipelines	17577 km
Average gas losses	3.41 %
Number of odorisation stations	113
Total number of users	598536
Household	557904
Commercial ≤1 mil.m^3	40512
Commercial >1 mil.m^3	120
Total gas distributed	1320 mil.m^3
Household	713 mil.m^3
Commercial ≤1 mil.m^3	370 mil.m^3
Commercial >1 mil.m^3	237 mil.m^3

1 AMGA ADRIA d.o.o., Kraljevica
2 BROD-PLIN d.o.o., Slavonski Brod
3 DARKOM d.o.o., Daruvar
4 DUKOM 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 HUMKOM d.o.o., Hum na Sutli
11 IVAKOP d.o.o., Ivanić Grad
12 IVKOM d.o.o., Ivanec
13 TERMOPLIN NOVI MAROF d.d., Novi Marof
14 KOMUNALAC d.o.o. Garešnica
15 KOPRIVNICA PLIN-DISTRIBUCIJA PLINA d.o.o. Koprivnica
16 KOMUNALAC d.o.o. Pakrac
17 PLIN KONJŠČINA d.o.o., Konjščina
18 KOMUNALAC VRBOVEC d.o.o., Vrbovec
19 KOMUNALIJE d.o.o., Čazma
20 KOMUNALIJE-PLIN d.o.o., Đurđevac
21 PLINKOM PITOMAČA 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 METALPRODUKT d.d., Šandrovac
26 MONTCOGIM PLINARA d.o.o., Sv. Nedjelja
27 MOSLAVINA PLIN d.o.o., Kutina
28 PAPUK 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., Zelina

[5] *The average value was weighted according to distributed gas quantities of certain distribution system operators.*

The price of gas distribution had not been defined separately for distribution system users (households and commercial) until 2007, but it was an integral part of the gas selling prices for the final customer and it was called "distribution fee". In that period, the selling price of gas for final customers was determined in the manner prescribed by the Utility Service Act (Official Gazette "Narodne novine", No. 26/03, 82/04 and 172/04). In March 2007, the Agency issued the Tariff System for Distribution of Natural Gas, without the Amounts of Tariff Items (Official Gazette "Narodne novine", No. 34/07 and 47/07). Consequently, the first Decision on the Amount of Tariff Items for Distribution of Natural Gas (Official Gazette "Narodne novine", No. 116/07) for energy undertaking Energo d.o.o. from Rijeka was adopted. Before the end of 2007 and in the first half of 2008, proposals on the amount of tariff items for gas distribution were received from most of distribution system operators. Consequently, the first Decision on the Amount of Tariff Items for Distribution of Natural Gas (Official Gazette "Narodne novine", No. 86/08 and 90/08) which defines the amount of tariff items for 30 distribution system operators was adopted by the Government of the Republic of Croatia in July 2008.. In December 2008, the Government of the Republic of Croatia issued a Decision on the Amount 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. The amounts of tariff items per distribution system operators according to the said Decision are presented in Table 4.1.3.

Table 4.1.3. *Amounts of tariff items for gas distribution per distribution system operators, for tariff models (without VAT)*

		Decision of the Government of RC (NN 86/08 and 90/08) -as of 1 Aug 2008			Decision of the Government of RC (NN 154/08) -as of 1 Jan 2008		
No.	Name of distribution system operator	Household	Commercial ≤1 mil.m^3	Commercial >1 mil.m^3	Household	Commercial ≤1 mil.m^3	Commercial >1 mil.m^3
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	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	0.36	0.36	0.36
6	ENERGO d.o.o., Rijeka	0.558	0.558	0.558	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	0.39	0.39	0.00
9	GRADSKA PLINARA ZAGREB d.o.o., Zagreb	0.305	0.35	0.35	0.305	0.35	0.35
10	HEP - Plin d.o.o., Osijek	0.27	0.27	0.27	0.30	0.30	0.30
11	HUMKOM d.o.o., Hum na Sutli	0.36	0.36	0.00	0.39	0.39	0.00
12	IVAKOP d.o.o., Ivanić Grad	0.36	0.56	0.00	0.36	0.56	0.00
13	IVKOM d.o.o., Ivanec	0.26	0.26	0.00	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	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	0.506	0.506	0.00
18	KOMUNALAC VRBOVEC d.o.o., Vrbovec	0.47	0.49	0.34	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	0.32	0.32	0.32
21	KOMUNALNO PITOMAČA d.o.o., Pitomača	0.35	0.35	0.00	0.35	0.35	0.00
22	KOMUS d.o.o. - u stečaju, Donja Stubica	0.395	0.395	0.00	0.395	0.395	0.00
23	MEĐIMURJE PLIN d.o.o., Čakovec	0.245	0.245	0.245	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	0.52	0.34	0.34
26	MOSLAVINA - PLIN d.o.o., Kutina	0.46	0.46	0.00	0.46	0.46	0.00
27	PAPUK d.o.o., Orahovica	0.23	0.21	0.21	0.30	0.30	0.30
28	PLINARA d.o.o., Pula**	0.56	0.56	0.56	0.56	0.56	0.56
29	PLINARA ISTOČNE SLAVONIJE d.o.o., Vinkovci	0.36	0.34	0.34	0.36	0.34	0.34
30	PLIN-PROJEKT d.o.o., Nova Gradiška	0.47	0.55	0.55	0.47	0.55	0.55
31	PRVO PLINARSKO DRUŠTVO d.o.o., Vukovar	0.34	0.34	0.34	0.34	0.34	0.34
32	RADNIK d.o.o., Križevci	0.43	0.41	0.00	0.43	0.41	0.00
33	TERMOPLIN d.d., Varaždin	0.26	0.26	0.26	0.30	0.30	0.30
34	TERMOPLIN NOVI MAROF d.d., Novi Marof	0.345	0.345	0.345	0.345	0.345	0.345
35	VIRKOM d.o.o., Virovitica	0.35	0.35	0.00	0.35	0.35	0.00
35	ZAGORSKI METALAC d.o.o., Zabok	0.44	0.30	0.30	0.44	0.30	0.30
38	ZELENJAK d.o.o., Klanjec	0.34	0.34	0.00	0.34	0.34	0.00
38	ZELINSKE KOMUNALIJE d.o.o., Zelina	0.34	0.34	0.34	0.34	0.34	0.34

** distributes mixed gas in addition to the natural gas*

*** distributes town and vaporized gas in addition to the natural gas*

4.1.4 Unbundling of activities

The Gas Market Act prescribes the obligations of unbundling of energy activities connected to the gas system management from other energy and non-energy activities. The Gas Market Act has been completely aligned with the provisions of the European Union's Directive 2003/55/EU concerning common rules for the internal market in natural gas. The basic principle related to the unbundling of activities in the gas sector 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.

In the part concerning the unbundling of accounts, the energy undertakings have to, in accordance with the rules of internal accounting, keep separate accounts in their books for each of their gas transmission, gas distribution, gas storage and LNG facility operation activities. Furthermore, the energy undertakings are also obligated to draw up, publish and submit to audit their annual accounts, in accordance with the Accounting Act and the Audit Act. Those energy undertakings which are not legally obligated to publish their annual accounts have to keep a copy of these at the disposal of the public at their head office. The audit of the annual accounts 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.

Gas transmission

In 2008 the energy activity of gas transmission in the Republic of Croatia was carried out by Plinacro d.o.o. established in 2002 by separation from INA d.d. 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 gas transmission.

Storage of natural gas

In 2008, the storage of natural gas was performed by INA d.d. In 2008, the procedure for the legal unbundling of natural gas storage activities was initiated. The company Podzemno skladište plina d.o.o. was incorporated as the gas storage system operator, and it obtained the licence for performing the energy activity of natural gas storage. In the first half of 2009, Plinacro d.o.o. bought Podzemno skladište plina d.o.o.

Gas distribution and gas supply

In accordance with the recommendations contained in the Directive 2003/55/EU, the obligation of unbundling of activities is not applied to the distribution system operator which is a part of a vertically integrated energy undertaking serving less than 100,000 customers connected to the distribution system. A vertically integrated energy undertaking is a gas undertaking or several mutually related gas undertakings performing at least one of the activities related to gas system management (gas transmission, gas distribution, gas storage and LNG facility operation) along with the energy-related activities of gas production, gas procurement or gas supply.

Considering the historical development of carrying out the activities of gas distribution and gas supply, which, in the Republic of Croatia was in most cases related to carrying out utility and other activities outside the gas-related sector, the Gas Market Act, in the section which sets out the manner of unbundling the activities, prescribes the obligation of organising the energy activity of gas distribution as an independent legal entity detached from the horizontally integrated energy undertaking and independently from other activities outside the gas-related sector. With regard to this obligation there are no derogations in relation to the number of system users.

Out of the total number of 38 distribution system operators, 16 of them do not have the obligation to unbundle the activities because they operate as vertically integrated energy undertaking serving less than 100,000 customers. The remaining 22 distribution system operators are obligated to unbundled the activities.

Among the energy undertakings obligated to unbundled the activities, only Gradska plinara Zagreb d.o.o. serves more than 100,000 customers and operates as a vertically integrated energy undertaking. In 2008, the activity of gas supply and other accompanying activities were detached from this energy undertaking and the company Gradska plinara Zagreb-Opskrba d.o.o. was incorporated. In this way, the energy activity of gas distribution became the only activity of Gradska plinara Zagreb d.o.o., which owns a part of the distribution system, and uses the other part pursuant to the agreements concluded with towns and municipalities. Both energy undertakings, Gradska plinara Zagreb d.o.o., which carries out the energy activity of gas distribution, and Gradska plinara Zagreb-Opskrba d.o.o., which carries out the energy activity of gas supply and other activities, are represented separately, have their own visual identity and they are taking measures in order that the users and customers may clearly identify them. There is a link on the website of Gradska plinara Zagreb d.o.o. to a special section with the visual identity and contents relating only to the business operation of Gradska plinara Zagreb-Opskrba d.o.o.

The remaining 21 energy undertakings, although serving less than 100,000 customers, are obligated to unbundle the activities on the grounds of business operation within horizontally integrated energy undertakings. In 2008, most of the energy undertakings initiated the procedure of unbundling of the activities, and upon the completion of this procedure 12 energy undertakings will have the activity of gas distribution organised as an independent legal entity independently from other activities within the gas-related sector and from the non-energy activities. The remaining nine energy undertakings will organise gas distribution in a vertically integrated legal entity which will, alongside gas distribution, also carry out the energy-related activity of gas supply. In the 12 energy undertakings which will have the activity of gas distribution organised as an independent legal entity, the distribution system is predominantly owned by towns, municipalities or private companies.

The procedure of unbundling the activities of all energy undertakings which were performing the energy activity of gas distribution at the moment the Gas Market Act entered into force is presented in Table 4.1.4. The table evidently shows that, upon the completion of the unbundling procedure, 25 energy undertakings will be organised as vertically integrated legal entities serving less than 100,000 customers and carrying out the energy activity of gas supply alongside the activity of gas distribution. The remaining 13 energy undertakings will only carry out the energy activity of gas distribution and they will be organised as an independent legal entities.

Table 4.1.4. *Procedure of unbundling the activities*

Ord. No.	Name of the energy undertaking	Organisation at the moment when the Gas Market Act entered into force	Method of carrying out the unbundling of activities	Name of the new legal entity	Organisation after unbundling
1	AMGA ADRIA d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
2	BROD-PLIN d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
3	DARKOM d.o.o.	horizontally integrated energy undertaking	division of the corporation and transfer of licence	DARKOM DISTRIBUCIJA PLINA d.o.o.	distribution system operator -legally unbundled
4	DUKOM d.o.o.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	DUKOM PLIN d.o.o.	distribution system operator -legally unbundled
5	ELEKTROMETAL d.d.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	ELEKTROMETAL-DISTRIBUCIJA PLINA d.d.	distribution system operator -legally unbundled
6	ENERGO d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
7	ENERGOMETAN d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
8	GRADSKA PLINARA KRAPINA d.o.o.	horizontally integrated energy undertaking	division of the corporation and transfer of licence	GRADSKA PLINARA KRAPINA d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers
9	GRADSKA PLINARA ZAGREB d.o.o.	vertically integrated energy undertaking serving MORE than 100,000 customers		GRADSKA PLINARA ZAGREB-OPSKRBA d.o.o.	distribution system operator -legally unbundled
10	HEP - Plin d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
11	HUMKOM d.o.o.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	HUMPLIN d.o.o.	distribution system operator -legally unbundled
12	IVAKOP d.o.o.	horizontally integrated energy undertaking		IVAPLIN d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers
13	IVKOM d.o.o.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	IVKOM-PLIN d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers

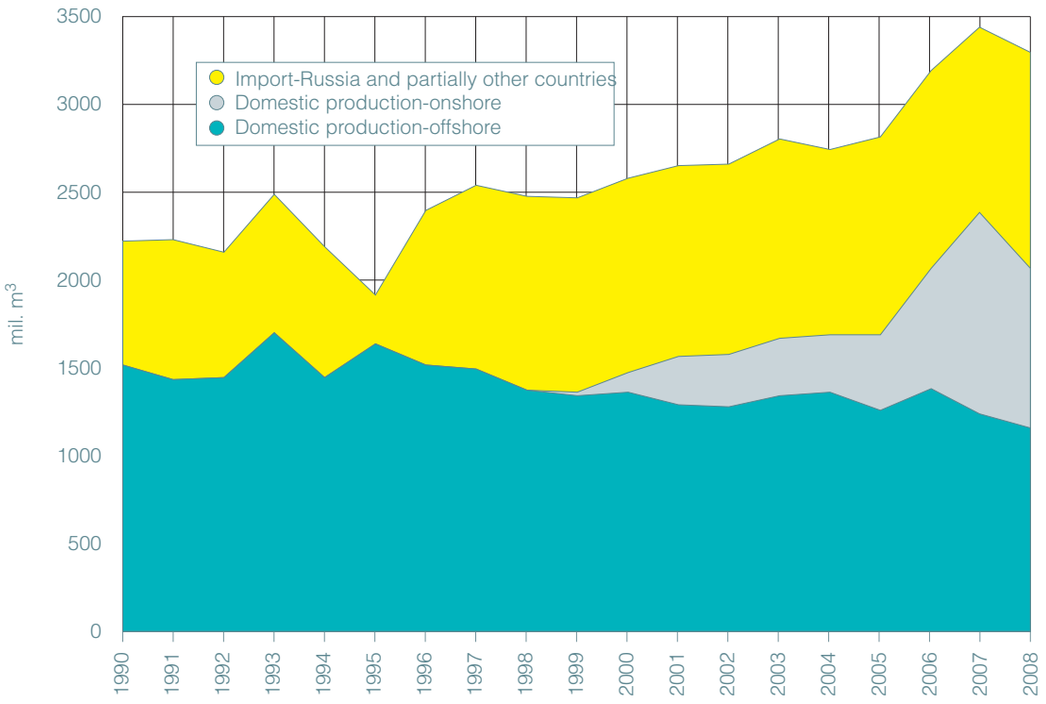
14	KOMUNALAC d.o.o., Garešnica	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	PLIN d.o.o. Garešnica	distribution system operator -legally unbundled
15	KOMUNALAC d.o.o., Koprivnica	horizontally integrated energy undertaking	division of the corporation and transfer of licence	KOPRIVNICA PLIN-DISTRIBUCIJA PLINA d.o.o.	distribution system operator -legally unbundled
16	KOMUNALAC d.o.o., Pakrac	horizontally integrated energy undertaking		PAKRAC-PLIN d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers
17	KOMUNALAC KONJŠČINA d.o.o.	horizontally integrated energy undertaking	division of the corporation and transfer of licence	PLIN KONJŠČINA d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers
18	KOMUNALAC VRBOVEC d.o.o.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	PLIN VRBOVEC d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers
19	KOMUNALIJE d.o.o., Čazma	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	ČAPLIN d.o.o.	distribution system operator -legally unbundled
20	KOMUNALIJE d.o.o., Đurđevac	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	KOMUNALIJE-PLIN d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers
21	KOMUNALNO PITOMAČA d.o.o.	horizontally integrated energy undertaking	division of the corporation and transfer of licence	PLINKOM d.o.o.	distribution system operator -legally unbundled
22	KOMUS d.o.o. - u stečaju	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
23	MEĐIMURJE PLIN d.o.o.	vertikalno integrirani subjekt serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
24	METALPRODUKT d.d.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	KROPLIN d.o.o.	distribution system operator -legally unbundled
25	MONTCOGIM - PLINARA d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
26	MOSLAVINA - PLIN d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
27	PAPUK d.o.o.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	PAPUKPLIN d.o.o.	distribution system operator -legally unbundled
28	PLINARA d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
29	PLINARA ISTOČNE SLAVONIJE d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
30	PLIN-PROJEKT d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
31	PRVO PLINARSKO DRUŠTVO d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
32	RADNIK d.o.o.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	RADNIK-PLIN d.o.o	distribution system operator -legally unbundled
33	TERMOPLIN d.d.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
34	TERMOPLIN NOVI MAROF d.d.	vertically integrated energy undertaking serving LESS than 100,000 customers			vertically integrated energy undertaking serving LESS than 100,000 customers
35	VIRKOM d.o.o.	horizontally integrated energy undertaking	division of the corporation and transfer of licence	Plin VTC	vertically integrated energy undertaking serving LESS than 100,000 customers
35	ZAGORSKI METALAC d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers		ZAGORSKI METALAC d.o.o za distribuciju plina i opskrbu plinom	vertically integrated energy undertaking serving LESS than 100,000 customers
38	ZELENJAK d.o.o.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	ZELENJAKPLIN d.o.o.	vertically integrated energy undertaking serving LESS than 100,000 customers
38	ZELINSKE KOMUNALIJE d.o.o.	horizontally integrated energy undertaking	incorporation of a new legal entity and obtaining the licence for performing the energy activity	ZELINA-PLIN d.o.o.	distribution system operator -legally unbundled

4.2 Development of the natural gas market

4.2.1 Natural gas balance

The total amount[6] of natural gas supplied to the Republic of Croatia in 2008 amounted to 3,261 million m^3. The natural gas for the domestic market is supplied by INA d.d.[7], mainly from the domestic production at the Pannonian and North Adriatic fields (62.4% in 2008), partially from the import from the Russian Federation (33.2% in 2008), and to a smaller extent from the import from other countries (in 2008, from The Republic of Italy and the Republic of Slovenia, with the total share of 4.4%). The structure of natural gas supply in the period between 1990 and 2008 is presented in Figure 4.2.1.

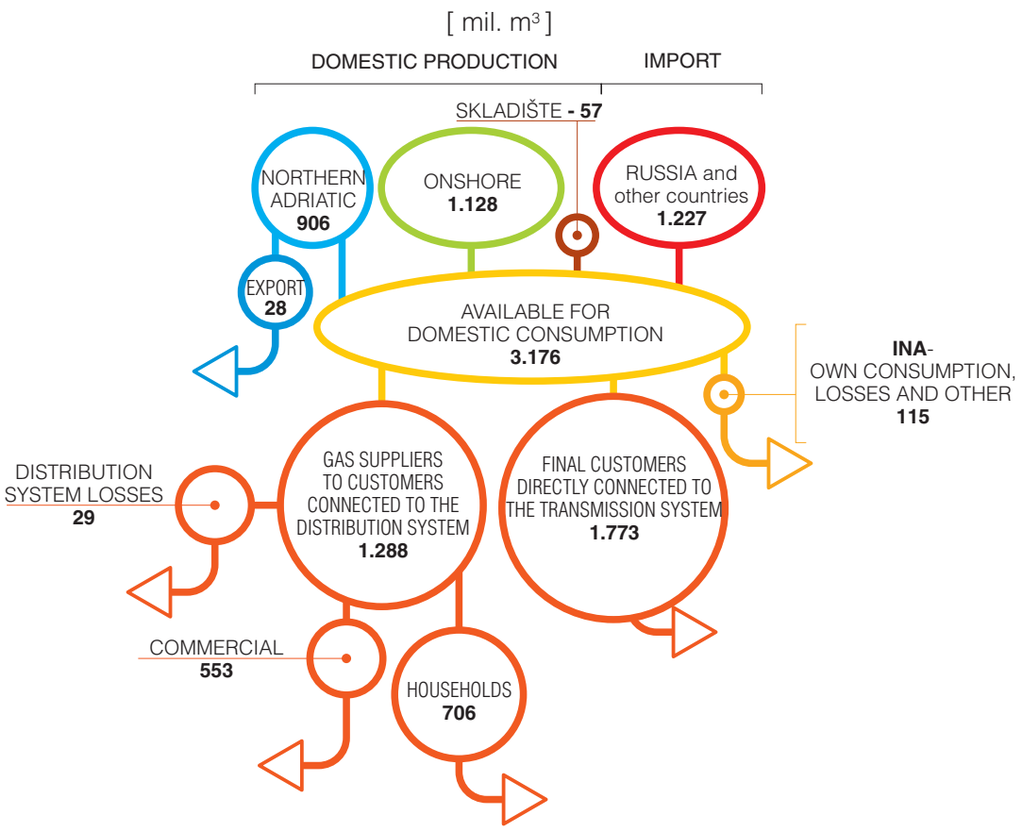
Figure 4.2.1. *Structure of natural gas supply in the Republic of Croatia between 1990 and 2008*



The total domestic production of natural gas in 2008 amounted to 2,035 million m^3. 906 million m^3 had been produced at the North Adriatic gas fields, and 1,128 million m^3 at the gas fields in the Pannonian plain. In 2008, 365 million m^3 had been injected in the underground natural gas storage Okoli (hereinafter referred to as: PSP Okoli) and 308 million m^3 had been withdrawn. 193 million m^3 of natural gas was stored in PSP Okoli on 1 April 2008, and on 1 October 2008 547 million m^3. The import of natural gas was realised from the Russian Federation - 1,083 million m^3, the Republic of Italy - 109 million m^3 and the Republic of Slovenia - 35 million m^3, while at the same time 28 million m^3 of natural gas was exported to the Republic of Italy. The 2008 natural gas balance of the Republic of Croatia is presented in Figure 4.2.2.

[6] *The total amount represents the sum of the total domestic production and the total import of natural gas in the Republic of Croatia.*
[7] *INA d.d. was the only company in the Republic of Croatia in 2008 that performed the activity of natural gas production, and it was the only one among 39 gas suppliers importing natural gas in the Republic of Croatia, as well as supplying natural gas to the final customers directly connected to the transmission system.*

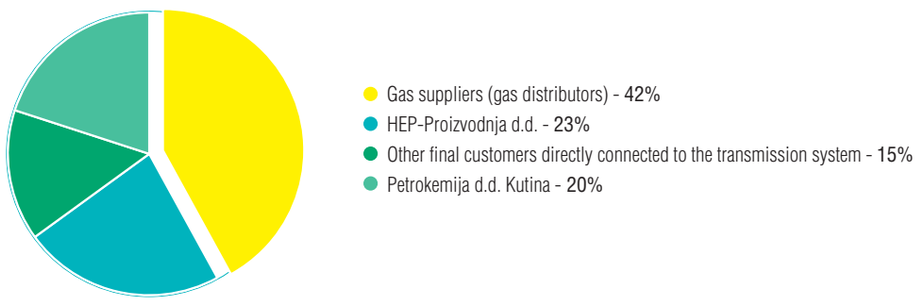
Figure 4.2.2. *Natural gas balance in the Republic of Croatia in 2008*



4.2.2 Gas supply and final consumption of gas

In 2008, INA d.d. delivered natural gas to 38 gas suppliers and 27 final customers directly connected to the transmission system. The structure of natural gas supply in 2008 was the following: 1,288 million m^3 were delivered to gas suppliers and 1,773 million m^3 were delivered to the final customers directly connected to the transmission system, out of which HEP-Proizvodnja d.d. 694 million m^3, and Petrokemija d.d. from Kutina 627 million m^3. The share of delivery to gas suppliers compared with the total supply of natural gas, that is, INA d.d. wholesale share, amounted to 42%. The structure of natural gas consumption in 2008 is presented in Figure 4.2.3.

Figure 4.2.3. *Structure of natural gas consumption in the Republic of Croatia in 2008*

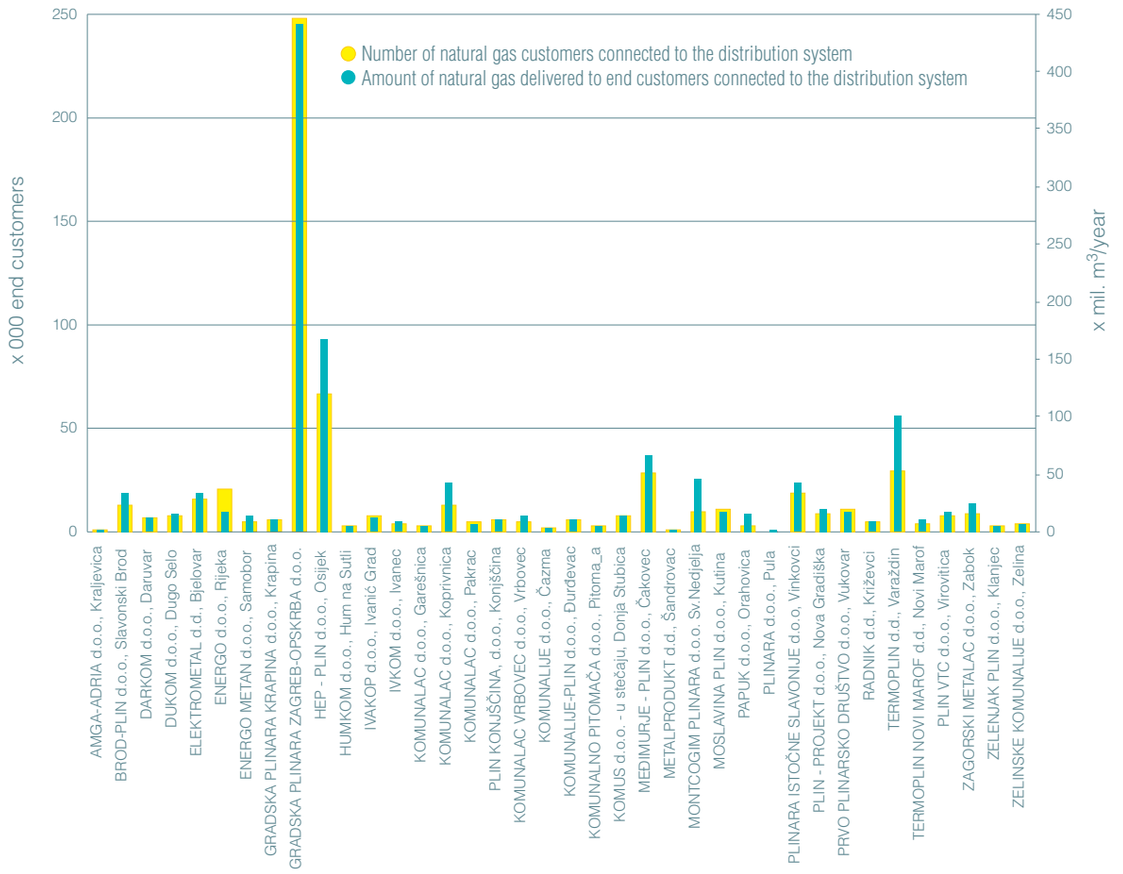


In 2008, 39 energy undertakings carried out gas supply in the Republic of Croatia. The total amounts of natural gas that gas suppliers provided to final customers connected to the distribution system amounted to 1,259 million m3. 706 million m^3 of natural gas were provided to final customers belonging to the household tariff group, which is 12.2% more when compared to the amounts provided to final customers belonging to the household tariff group in 2007. 553 million m^3 of natural gas were provided to final customers belonging to the commercial tariff group, which is 7.7 % more when compared to the amounts provided to final customers belonging to the commercial tariff group in 2007. Out of the total amount of natural gas provided to final customers belonging to the commercial tariff group in 2008, 368 million m^3 were delivered to customers with the annual natural gas consumption of 1 million m^3 or less, and 185 million m^3 were delivered to customers with the annual natural gas consumption of over 1 million m^3.

The total number of final customers connected to the distribution system in 2008 amounted to 586,867. 546,753 customers belonged to the household tariff group, which is 4.6 % more than the number of final customers belonging to the household tariff group in 2007, and 40,114 customers belonged to the commercial tariff group, which is 4.9% more than the number of final customers belonging to the commercial tariff group in 2007. Out of the total number of customers belonging to the commercial tariff group in 2008, 39,997 customers were customers with the annual natural gas consumption of 1 million m^3 or less, and 117 customers were customers with the annual natural gas consumption of over 1 million m^3.

The comparison of final customers connected to the distribution system and the amounts of natural gas delivered to final customers according to the gas suppliers in the Republic of Croatia in 2008 is presented in Figure 4.2.4.

Figure 4.2.4. *Comparison of the number of natural gas customers connected to the distribution system and the amounts of natural gas delivered to end customers according to the gas suppliers in the Republic of Croatia in 2008*



4.2.3 Quality of gas supply

Pursuant to the Energy Act, one of the content-related areas that have to be regulated by the general conditions of energy supply is the quality of energy that the suppliers 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 prescribed 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 in the indicators of the number of delivery interruptions and their duration. Finally, the gas producer, gas supplier and gas traders are obligated to ensure a standard quality of gas delivered to the transmission or distribution system as prescribed in the General Conditions of Natural Gas Supply.

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 prescribes a transition period for establishing the system for gathering data on the quality of services.

During the compilation of the Annual Report for 2008, the Agency gathered data, which at this moment may be considered only informative since the system for data gathering, processing and storing has not yet been prescribed. These data include the quality of supply monitored over several aspects:

- number of requests for connection to the gas network,
- 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 the course of 2008 the transmission system operator received three requests for connection to the transmission network and the average duration of solving the request amounted to 49 days. The distribution system operators received on average[8] 816 requests for connection to the distribution network, which represents an increase of 14% in the number of requests when compared to 2007. The average time of request solving amounted to 14 days, which represents a 12.5% decrease when compared to 2007.

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 2008 had been collected from the transmission and distribution system operators.

In the course of 2008, there were 37 planned gas delivery interruptions in the gas transmission network, which represents a 14% decrease in the number of planned delivery interruptions when compared to 2007. As opposed to 2007, when there were no unplanned delivery interruptions, two unplanned delivery interruptions were recorded in 2008. The total duration of all delivery interruptions amounted to 283 hours, which represents a 54% decrease when compared to 2007.

In distribution network there were on average 331 of all delivery interruptions[9] which represents a 25% decrease in the number of all delivery interruptions when compared to 2007, with total average duration of all delivery interruptions of 2,718 hours, which represents a 29% decrease in the duration of all delivery interruptions when compared to 2007.

The aforementioned indicators and the comparison with the same indicators from 2007 lead us to the conclusion that the quality of service and the quality of natural gas supply improved in 2008.

4.2.4 Customer protection

In 2008, the Customer Complaint Committees within the distribution system operators processed a total of 127 complaints. 68 complaints got a positive decision, 43 complaints got a negative decision, while on 31 December 2008 16 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.

[8] *All average data presented in this chapter represent arithmetic averages.*
[9] *Planned and unforeseen supply interruptions.*

In 2008, the Agency received a total of three gas-related complaints, two of which the Agency was not authorised to act upon, while one complaint fell into its area of competence, and it referred to the 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. Along with the Energy Act, the first package of energy-related legislation was passed that regulated the carrying out of certain energy activities. This first package of energy-related legislation also included the Gas Market Act.

This Act established the basic legislative framework for restructuring and reorganisation of the energy sector.

In April 2007, the Croatian Parliament passed the new Gas Market Act, and in December 2008 the Act on the Amendments to the Gas Market Act (Official Gazette 152/08), which foresees the liberalization of the gas market in such way that the gas market should be opened gradually and prescribes that as of 1 August 2007 the status of an eligible customer will be granted to the customer that does not belong to the household category, and as of 1 August 2008, all households will be 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 order that the market could be completely opened, the full implementation of statutory regulations 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 supply route along with the already existing route going via Rogatec in the Republic of Slovenia. The share of natural gas consumption of customers that had obtained the status of an eligible customer until 31 December 2008 in the total consumption of natural gas 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 presented in Table 4.2.1.

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

Country	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	household		
Republic of Croatia	Since 08/2007.: all except households Since 08/2008.: all customers	100	0	0	ownership	In the process of accountancy and legal unbundling

4.2.6 Natural gas prices

Price of gas supply

The price of gas supply[10] in 2008 was determined pursuant to the Decision on the Price of Gas Procurement for the Gas Supplier of Suppliers of Tariff Customers (Official Gazette, 77/07) which the Government of the Republic of Croatia adopted in July 2007, and it was identical for all tariff customers and amounted to 1,07 HRK/m^3, for the calorific value of gas of 33,338.35 kJ[11]. In December 2008, 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, 142/08) which entered into force on 1 January 2009, and which determined the price of gas supply to 1,32 HRK/m^3, for the calorific value of gas of 33,338.35 kJ.

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, 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, 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, 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 of 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, 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

10 The Gas Market Act defines gas procurement as a supply to a supplier of tariff customers and a supplier who is a holder of the public service obligation of gas supply.

11 If the natural gas does not have the calorific value of 33,338.35 kJ, the sales price is corrected proportionally in accordance with the increase or decrease of the real lower calorific value of the delivered gas.

the Exception of Eligible Customers (Official Gazette, 154/08) which determined the amount of tariff items, that is, final price for customers belonging to the household tariff group pertaining to all 38 gas suppliers.

The average retail price of natural gas, VAT included, for tariff customers of individual gas suppliers[12] in 2008 ranged from 1.85 to 2.53 HRK/m^3, and the total average retail price for all final customers of all gas suppliers on the distribution system amounted to 2.056 HRK/m^3 which is 0.15% more when compared to 2007. The average retail price of natural gas[13] for the household tariff group in the Republic of Croatia in 2008 amounted to 2.054 HRK/m^3, for the commercial tariff group with the annual natural gas consumption of 1 million m^3 2.086 HRK/m^3, and for the commercial tariff group with the annual natural gas consumption of more than 1 million m^3 2.003 HRK/m^3. The average retail prices of natural gas for final customers according to the individual gas suppliers in the Republic of Croatia in 2008 are presented in Figure 4.2.5.

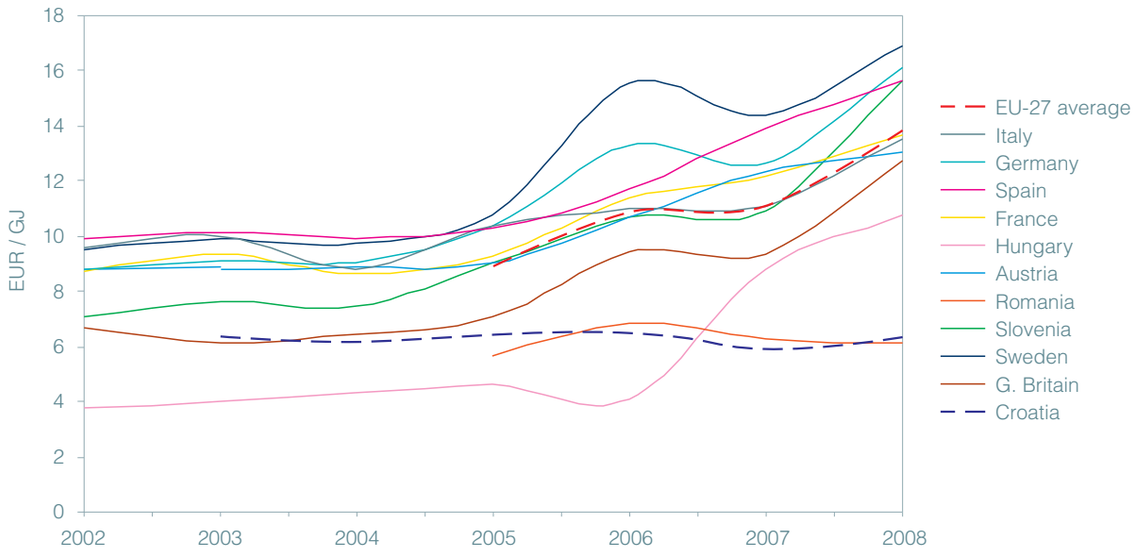
Figure 4.2.5. *Average retail prices of natural gas for end customers according to the individual gas suppliers in the Republic of Croatia in 2008*

12 *Weighted average according to the delivered amounts for all tariff models of each individual gas supplier.*
13 *Weighted average according to the delivered amounts for individual tariff models 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 most European countries were constantly rising between 2004 and 2007. The trend of price increase was stopped for a short while in the first half of 2007, and in some countries, such as Romania and the Republic of Croatia the price of natural gas for households was even reduced. The trend of retail prices of natural gas for household category D_2, with the annual natural gas consumption of between 20 do 200 GJ, which approximately amounts to the natural gas consumption of between 600 and 6.000 m^3/year, in respective European countries between 2003 and 2008[14] is presented in Figure 4.2.6. A significant increase of the price of natural gas for households was recorded in the Republic of Slovenia, in the Federal Republic of Germany, in the Kingdom of Sweden and in the United Kingdom of Great Britain and Northern Ireland. According to the data provided by Eurostat, the retail prices for final customers belonging to the household category in the Republic of Croatia had been in slight increase up to the beginning of 2007, when the price remained the same for a short while, and after that the price was again in slight increase.

Figure 4.2.6. *Trend of retail prices of natural gas for household category D2 in respective European countries between 2003 and 2008 (taxes excluded) [EUR/GJ]*



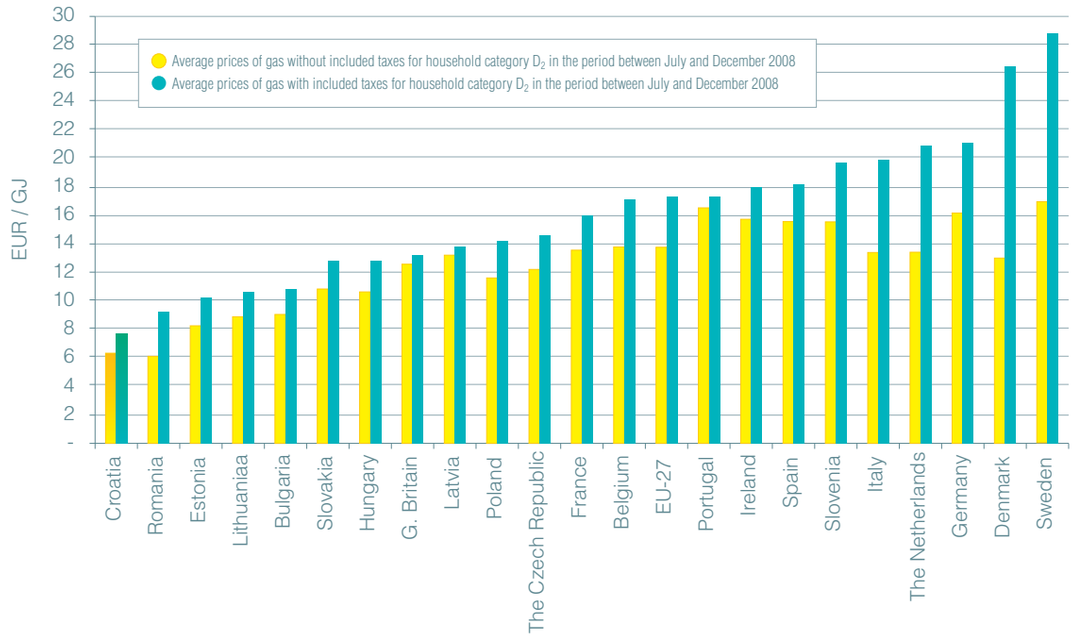
** 2002-2006 data were calculated according to the old Eurostat methodology, and 2007-2008 data according to the new one*

According to the data provided by Eurostat, the prices of natural gas in the European Union increased by 24.1% for household category D_2 in the period between 2007 and 2008.

Figure 4.2.7. presents the average prices of natural gas for household category D_2 in European countries in the period between July and December 2008. The total retail price of natural gas for household category D_2 is at the highest level in the Kingdom of Sweden (28.82 EUR/GJ) and in the Kingdom of Denmark (26.57 EUR/GJ), and at the lowest level in the Republic of Croatia (7.70 EUR/GJ), in Romania (9.33 EUR/GJ) and in the Republic of Estonia (10.34 EUR/GJ). It is evident that the share of taxes in the total price of natural gas for the aforementioned category of customers varies significantly and it is at the highest level in the Kingdom of Denmark (50.6%), in the Kingdom of Sweden (41.2%) and in the Kingdom of the Netherlands (36.2%), and at the lowest level in the United Kingdom of Great Britain and Ireland (4.2%), in the Republic of Portugal (4.7%) and in the Republic of Latvia (4,9%).

[14] *Prices are calculated as averages of retail prices in the July-December period of the respective years.*

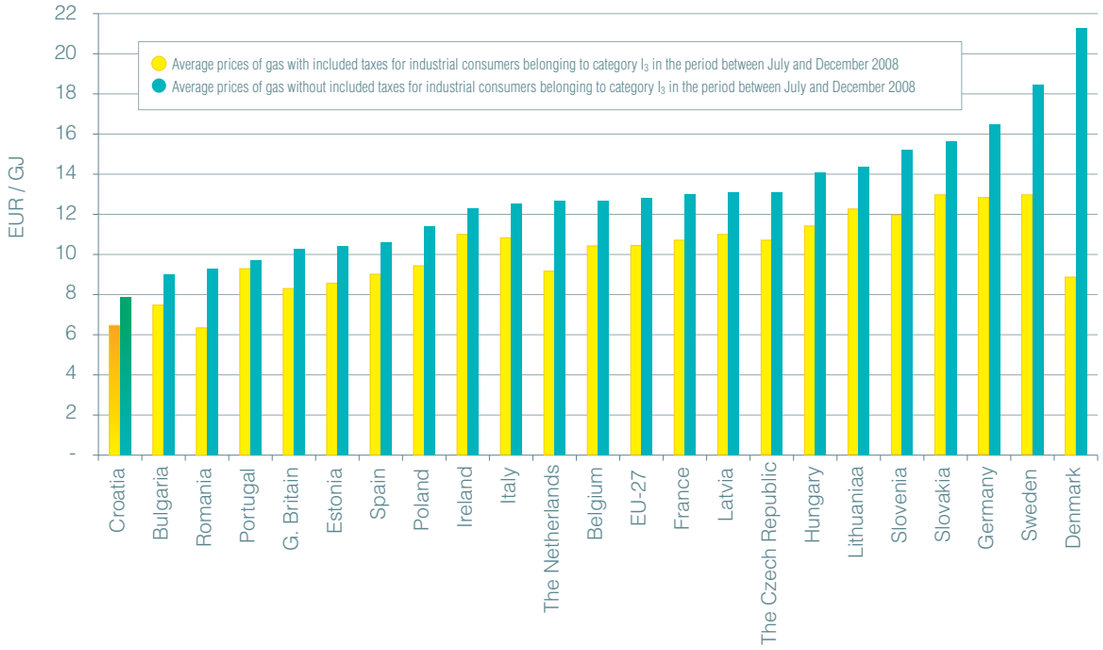
Figure 4.2.7. *Average prices of natural gas for household category D2 in the period between July and December 2008 (with and without included taxes)*



According to the data provided by Eurostat, in the period between 2007 and 2008 the prices of natural gas in the European Union increased by 29.5% for industrial consumers belonging to category I_3 with the annual natural gas consumption of between 10,000 and 100,000 GJ, which approximately amounts to the natural gas consumption of between 300,000 and 3,000,000 m^3/year.

Figure 4.2.8. presents the average prices of natural gas for industrial consumers belonging to category I_3 in European countries in the period between July and December 2008.

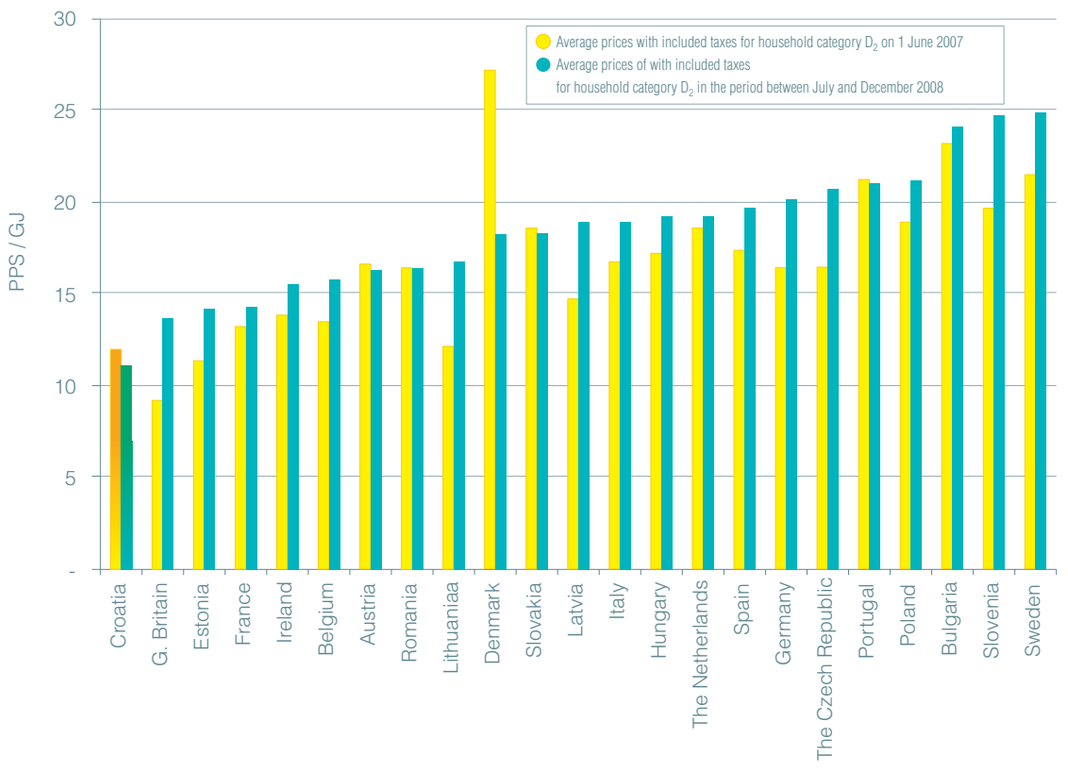
Figure 4.2.8. *Average prices of natural gas for industrial consumers belonging to category I3 in the period between July and December 2008 (with and without included taxes)*

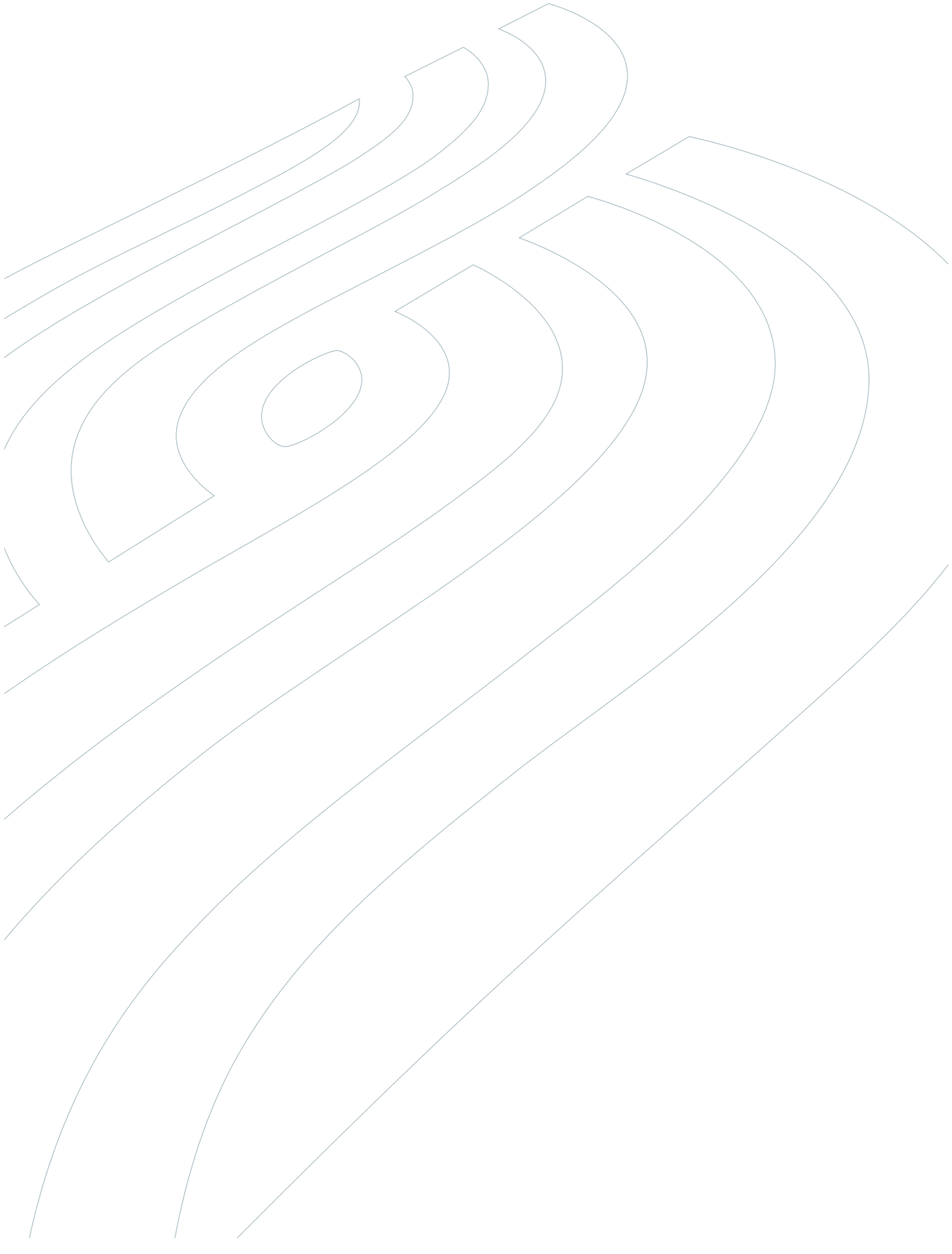


The total retail price of natural gas for industrial consumers belonging to category I_3 is at the highest level in the Kingdom of Denmark (21.13 EUR/GJ) and in the Kingdom of Sweden (18.37 EUR/GJ), and at the lowest level in Romania (9.24 EUR/GJ), in the Republic of Bulgaria (8.91 EUR/GJ) and in the Republic of Croatia (7.82 EUR/GJ). It is evident that the share of taxes in the total price of natural gas for the aforementioned category of customers varies significantly and it is at the highest level in the Kingdom of Denmark (58.3%), in Romania (31.2%) and in the Kingdom of Sweden (29.8%), and at the lowest level in the Republic of Portugal (4.8%), in Ireland (9.9%), and in the Republic of Italy (13.1%).

The Figure 4.2.9. presents the comparison of European retail prices with included taxes for household category D_2 in the period between July and December 2008. The international unit PPS/GJ has been used as the price unit, used to eliminate 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 D_2 in the second half of 2008 was at the highest level in the Kingdom of Sweden, in the Republic of Slovenia and in the Republic of Bulgaria and at the lowest level in the Republic of Croatia, in the United Kingdom of Great Britain and Northern Ireland, in the Republic of Estonia and in the French Republic, while on 1 June 2007 the price of natural gas was at the highest level in the Kingdom of Denmark, in the Republic of Bulgaria and in the Kingdom of Sweden, and at the lowest level in the United Kingdom of Great Britain and Northern Ireland, in the Republic of Estonia and in the Republic of Croatia.

Figure 4.2.9. *Comparison of the average prices of natural gas for households belonging to category D2 with regard to the price of goods/services in European countries (taxes included) on 1 June 2007 and in the period between July and December 2008*





5

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

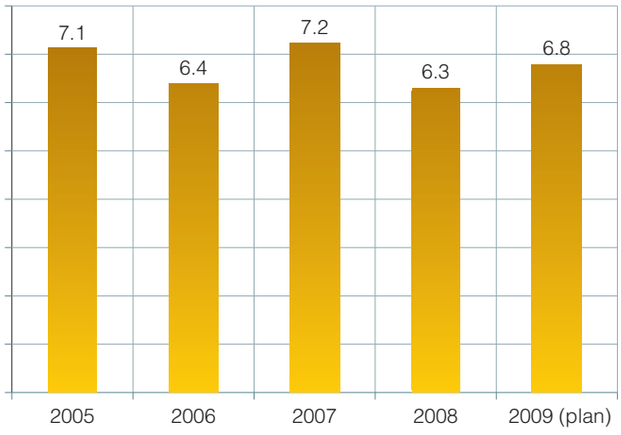
5.1.1 Transportation of oil through oil pipelines

The energy undertaking Jadranski naftovod d.d. (hereinafter JANAF d.d.) performs the activity of transportation of oil through oil pipelines in the Republic of Croatia. The oil transportation system of JANAF d.d., shown in figure 5.1.1., consists of terminals for receipt and discharge and a pipeline system, including pumping stations, measurement stations and outlet stations, and it is used for import of oil by tankers through the terminal in Omišalj, for transportation through pipelines to the oil refineries in Rijeka and Sisak and for the transit of crude oil for the needs of refineries in Bosnia and Herzegovina, Republic of Serbia and Republic of Hungary.Designed capacity of the system amounts to 34 MTA and the installed capacity amounts to 20 MTA (millions of tons annually p.a.).

Figure 5.1.1. *Transportation system of JANAF d.d.*

The allowed properties of the oil that may be transported, procedures of receipt and discharge of oil in Omišalj port, measurements of quantities and quality analyses, procedures at takeover of oil by the customers, as well as the obligations of the transporters, i.e. users are prescribed by the Technical Conditions of Access to Transportation Capacities of JANAF (Gazette "Glasilo VRED-a" No. 3-4/03). A total of 6.3 mil. t of crude oil has been transported through the oil pipeline system in 2008, which is 13% less then the year before. The transported quantities of oil for the period between 2005 and 2008, as well as planed quantities for the year 2009 are presented in Figure 5.1.2.

Figure 5.1.2. *JANAF's oil pipeline system - transported quantities*



Among other activities of JANAF d.d. in 2008, it needs to be mentioned that a stockholders' agreement was signed in Bucharest in 2008 as a continuance of the realization of the PEOP project, where JANAF d.d. was one of the stockholders. This agreement represents the founding document and the first step in the establishment of a new company, whose mission includes the promotion of the PEOP project.

As part of system development plans, JANAF d.d. and the Consortium, headed by the consortium leader Đuro Đaković Holding d.d., signed a contract on the reconstruction and upgrade of the storage facility of the Terminal Sisak.

Additionally, in 2008, JANAF d.d. signed a contract on oil transportation for the needs of the Oil Refinery in Bosanski Brod, Bosnia and Herzegovina.

Within its second main energy activity - oil and oil derivatives storage, JANAF d.d. started a cooperation with HANDA in the sense of storage services for obligatory stocks in 2008.

In December 2008, a successful recertification of the integrated management system was completed in accordance with the conditions of international standards ISO 9001:2008 - Quality management system, ISO 14001:2004 - Environmental management systems and OHSAS 18001:2007 - Occupational health and safety management systems.

The highest price level for transportation of oil trough oil pipelines is prescribed by the Tariff System for Oil Transportation by Oil Pipeline (Official Gazette “Narodne novine”, No. 39/07) adopted by the Agency and it prescribes:

- methods and criteria for establishment of tariffs for oil transportation;
- methodology characteristics of calculation of the highest tariff amounts for transportation of oil through oil pipelines;
- categories of users of oil transportation service through oil pipelines;
- data, documents and other materials used for determining costs of oil transportation through oil pipelines, total revenue of energy operator from oil transportation through oil pipelines and tariffs for oil transportation through oil pipelines.

The methodology for calculation of the highest tariff amounts for oil transportation through oil pipelines implies covering total operating costs of the oil transporter, investment provision for the development of oil pipelines transportation system, provision of return on assets, i.e. investment into the oil pipelines transportation system and maintenance of the transportation system’s reliability and environmental protection.

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

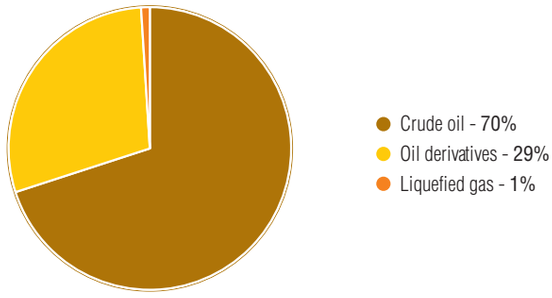
The tariff for users of category R1, which use oil pipelines for oil transportation in up to 20 km of length, and coastal terminals, amounts to HRK 19.96 per ton. The tariff for users of category R_2, which use oil pipelines for oil transportation longer than 20 km, coastal and inland terminals, amounts 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

The activity of storage of oil and oil derivatives is carried out by 25 energy undertakings. This activity includes the storage of oil and oil derivatives according to regulations, in separate rooms for private needs (producers, users and transporters) for the purpose of supply security and/or trading purposes. The price of oil and oil derivatives storage is not regulated, i.e. it is established based on market principles. According to the data the communicated by energy undertakings the total available storage capacity in 2008 amounted to 1.3 million m^3 (not including storage capacities within the oil refineries of INA d.d.). The structure of storage capacities according to the type of stored goods is presented in Figure 5.2.1.

Figure 5.2.1. *The structure of storage capacities for oil and oil derivatives according to the stored type of goods for 2008*

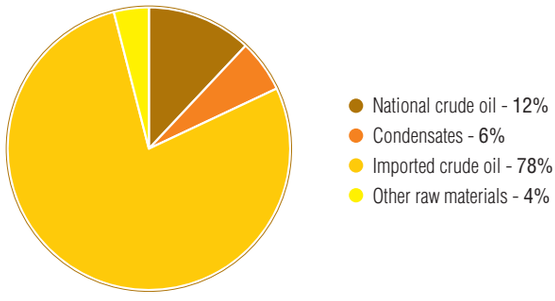


5.2.2 Production of oil derivatives and oil derivatives trade

Production of oil derivatives

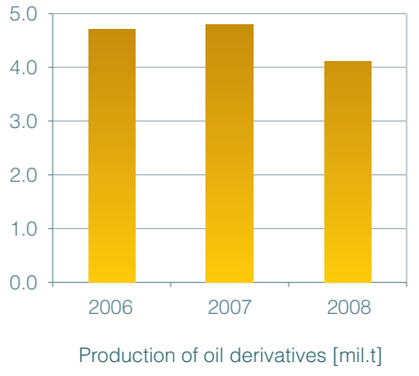
The activity of oil derivatives production in the Republic of Croatia can be analyzed through the work of the oil refinery INA d.d. in Rijeka and Sisak - with the total processing capacity around 5.7 mil. tons of oil per year. The production program of the oil refinery includes a broad spectrum of oil derivatives which include motor fuels as well as fuels for the industry and households. Additionally, the ethane plant ETAN in Ivanić Grad produces additional quantities of liquefied petroleum gas and other petrochemical raw materials. Imported crude oil and crude oil and condensates produced on national oil and gas fields are used as raw materials in the production of oil derivatives. The structure of raw materials for refinery processing in 2008 is presented in Figure 5.2.2.

Figure 5.2.2. *The structure of raw materials for refinery processing in 2008*



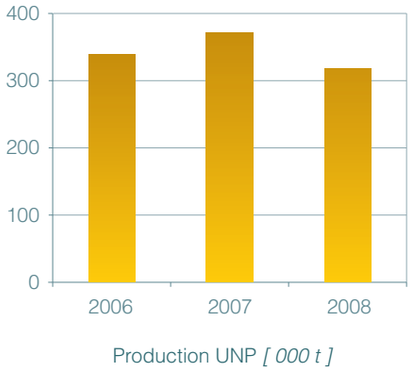
The total production of oil derivatives in 2008 amounted to 41 mil. tons of oil derivatives, which is 14% less than in 2007. The total quantity of produced oil derivatives in the period between 2006 and 2008 is presented in Figure 5.2.3.

Figure 5.2.3. *Produced quantity of oil derivatives in the period between 2006 and 2008*



In Figure 5.2.4., the quantities of liquefied petroleum gas produced in the period between 2006 and 2008 are presented separately.

Figure 5.2.4. *Produced quantity of liquefied petroleum gas in the period between 2006 and 2008*



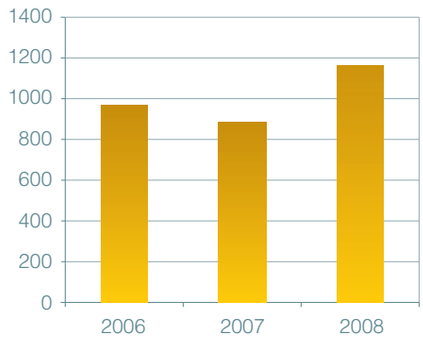
Trade in oil derivatives

The trade in oil derivatives includes the energy activities of wholesale of oil derivatives, retail of oil derivatives, wholesale of liquefied petroleum gas and retail of in liquefied petroleum gas. A license from the Agency is not required for activities of retail of oil derivatives and retail of liquefied petroleum gas.

In order to engage in activities of wholesale of oil derivatives, besides the license from the Agency, it is necessary to obtain a consent from the Ministry in the manner prescribed by the Regulation on Conditions for Retail and Foreign Trade of Particular Goods (Official Gazette “Narodne novine”, No. 58/09). The total of 31 energy undertakings are involved in trade in oil derivatives.

The prices of oil derivatives are not regulated, i.e. they are determined according to market principles. The highest price level for oil derivatives is determined by the Ordinance on Determination of Prices of Oil Derivatives (Official Gazette “Narodne novine”, No. 151/08), and the highest price level of liquefied petroleum gas (LPG) is determined by the Ordinance on Determination of Prices of Liquefied Petroleum Gas (Official Gazette “Narodne novine”, No. 52/09). Next to oil derivatives from domestic production, imported oil derivatives have a significant share in the Croatian market. According to the available data from energy operators in 2008, a total of 1.25 mil. tons of oil derivatives were imported and Figure 5.2.5. shows a comparison of the imported quantities of oil derivatives in the period between 2006 and 2008.

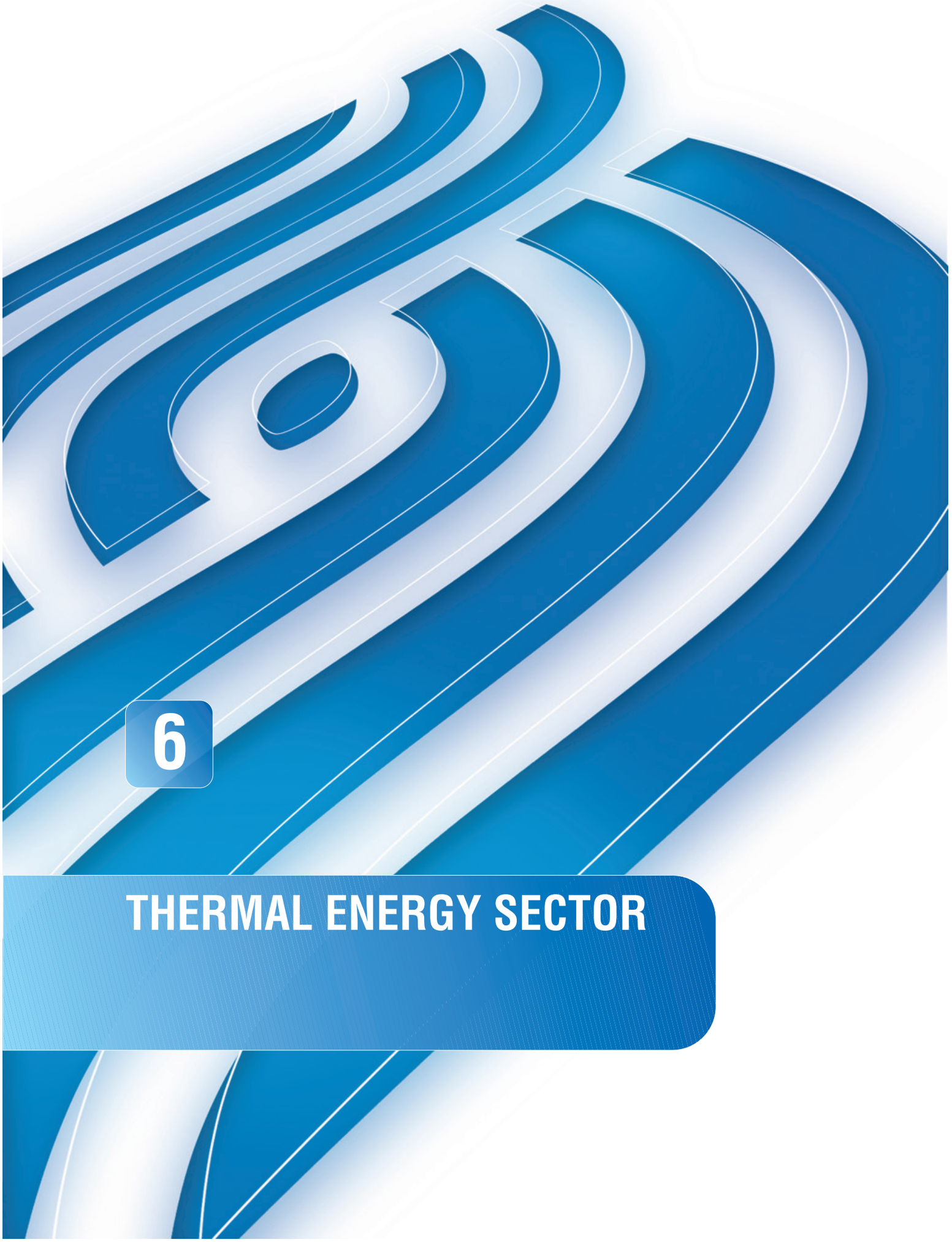
Figure 5.2.5. *Import of oil derivatives in the period between 2006 and 2008*



Import of oil derivatives *[000 t]*

Production, storage and trade in biofuels

The biofuel market in Republic of Croatia is still in the making. The Agency has to issue a license for carrying out energy activities of biofuels production, except in case of biofuels production for own needs or in quantities smaller then 1 TJ per year, which equals 27 tons of biodiesel per year. In the existing legal framework of 2008 a separate energy activity for retail and/or wholesale of biofuels was not foreseen, therefore it was necessary to obtain a license for trading, mediation and representation at the energy market for the abovementioned activities. Since The Act on Biofuels for Transportation (Official Gazette “Narodne novine”, No. 65/09) was adopted in May 2009, as of the date of enactment it is also required to obtain a license from the Agency for carrying out activities of wholesale of biofuels and biofuels storage. Besides the license from the Agency, for carrying out activities of wholesale of biofuels it is necessary to obtain an approval of the ministry in the manner prescribed by the Regulation on Conditions for Retail and Foreign Trade of Particular Goods (Official Gazette “Narodne novine”, No.58/09). For carrying out activities of retail of biofuels it is not necessary to obtain a license from the Agency.



6

THERMAL ENERGY SECTOR

6 Thermal Energy Sector

6.1 Thermal energy sector in general

Energy operators in the thermal energy sector in the Republic of Croatia provide services of heating and preparation of sanitary hot water for ca. 154,000 thermal energy users in the Republic of Croatia. Households represent more than 95% of the total number of thermal energy users from centralized thermal energy systems.

Thermal energy supply from the centralized thermal energy systems is present in major Croatian towns and thermal energy is produced either in cogeneration thermal plants for larger town parts or in heating plants for certain residential areas and it is distributed through hot water/warm water network to the facilities in which the energy is distributed to the customers.

Centralized energy systems with cogeneration thermal plants exist only in Zagreb, Osijek and Sisak. Besides thermal energy intended for heating purposes, this units also produce technological steam for the industrial purposes. 2 to 2,5 TWh of thermal energy is distributed every year to households through distribution network whose total length amounts to approx. 430 km.

More than 11% of total number of households in the Republic of Croatia is connected to district heating and approx. 15% of total energy used for heating of houses and preparation of sanitary hot water comes from centralized heating systems.

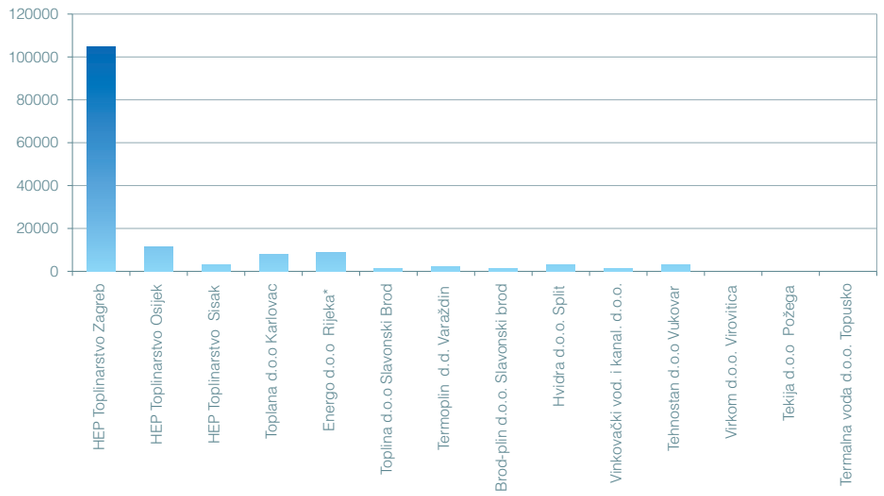
Basic technical data on district heating systems in major Croatian cities are given in Table 6.1.1., and the number of buyers/thermal energy users of centralized thermal energy systems is shown in Figure 6.1.1.

Table 6.1.1. *Data on energy operators in the thermal energy sector in the Republic of Croatia*

ENERGY OPERATOR	No. of users	Network length	Total power installed	Delivered annualy	Heating surface	Fuel***
1 HEP Toplinarstvo d.o.o.*	121576	380.7	2294	1755.6	9458910	PP, LUEL, LU
Zagreb	105907	305.7	1766	1508.5	8063477	PP, LUEL, LU
Osijek	11659	53.8	336	185.3	1132196	PP, LU
Sisak	4010	21.1	192	61.8	263237	PP, LU
2 Energo d.o.o., Rijeka**	9842	16.0	112	88.0	600000	PP, LU, LUEL
3 Toplana d.o.o., Karlovac	8104	21.0	118	77.7	534475	PP, LU, LUEL
4 Tehnostan d.o.o., Vukovar	3202	7.2	35	25.7	176666	PP, LUS-II, LUEL
5 Termoplin d.d., Varaždin	2907	2.1	41	27.0	164164	PP
6 Hvidra d.o.o., Split	3300	8.5	31	14.7	222165	LU
7 Brod-plin d.o.o., Slavonski Brod	1903	0.3	16	23.0	93000	PP
8 Vinkovački vod. i kanal. d.o.o., Vinkovci	1698	1.6	17	11.3	88958	PP, LU, LUEL
9 Virkom d.o.o., Virovitica	481	0.9	10	6.6	30191	PP
10 Inas-Invest d.o.o.	18			4.8	32000	-
11 Energoremont d.d., Karlovac	5	0.0	37	6.6	28822	0
12 Tekija d.o.o., Požega	484	0.8	7	3.6	23185	PP
13 Termalna voda d.o.o., Topusko	205	1.3	5	7.6	37631	geo
14 Dioki d.d.	4	0.0	49	7.5	0	0
15 Zračna luka Zagreb	2	2.0	12	1.9	0	PP, LU
TOTAL	153731	442	2785	2062	11490167	

** Besides heat energy, HEP Toplinarstvo also produced 663,618 t of technological steam (partially used for heating) in 2008*
*** Data for 2006*
**** PP natural gas, MP mixed gas, LU fuel oil, LUEL extra light fuel oil, geo -geothermal energy*

Figure 6.1.1. *Number of thermal energy buyers from the centralized thermal energy system*



Energy operators engaged in production, distribution and supply of thermal energy are owned by local self-government units, by the state or are privately owned. Besides activities related to thermal energy, these companies mainly carry out the activity of gas distribution and other utility services.

Energy operator HEP Toplinarstvo d.o.o., Zagreb, carries out only activities related to thermal energy and it supplies more than 80% of the total thermal energy buyers. Energy operators Toplana d.o.o., Karlovac, and Termalna voda d.o.o., Topusko, also carry out only activities related to thermal energy. Table 6.1.2. presents data on ownership and activities of the energy operators in the thermal energy sector.

Table 6.1.2. *Ownership and the activities of the energy operators in the thermal energy sector*

Energy operator/Headquarters	Ownership	Activity
Energo d.o.o. Rijeka	Private / Municipal	Production, distribution and supply of gas and thermal energy
Termoplin d.d. Varaždin	Private / Municipal	Production, distribution and supply of gas and thermal energy
Brod-plin d.o.o. Slavonski Brod	Municipal	Production, distribution and supply of gas and thermal energy
Virkom d.o.o. Virovitica	Municipal	Production, distribution and supply of gas and thermal energy
Tehnostan d.o.o. Vukovar	Municipal	Production, distribution and supply of thermal energy, chimney sweeping craft, building maintenance
Vinkovački vodovod i kanalizacija d.o.o. Vinkovci	Municipal	Collection, treatment and distribution of water, drainage, construction of water and sewage network, supply of thermal energy, graveyard vodovodne i kanalizacijske mreže, opskrba toplinskom energijom, groblje
HVIDRA d.o.o Split	Private	Production, distribution and supply of thermal energy, parking, towing away illegally parked cars, garages, car wash
TEKIJA d.o.o. Požega	Municipal	Collection, treatment and distribution of water, drainage, waste collection and disposal, thermal energy supply, graveyard, parking
HEP Toplinarstvo d.o.o. Zagreb	State	Production, distribution and supply of gas and thermal energy
Toplana d.o.o. Karlovac	Municipal	Production, distribution and supply of gas and thermal energy
Termalna voda d.o.o. Topusko	Municipal	Production, distribution and supply of gas and thermal energy

6.2 Legislative framework of the thermal energy sector

Legislative frameworks for energy activities of production, distribution and procurement of thermal energy consist of: The Energy Act, The Act on the Regulation of Energy Activities and The Act on Production, Distribution and Supply of Thermal Energy. The performance of energy activities of production, distribution and supply of thermal energy is also regulated by the following subordinate regulations: The General Conditions for Thermal Energy Supply (Official Gazette "Narodne novine" No. 129/06), The Tariff System for Services of Production, Distribution and Supply of Thermal Energy, without the Amount of Tariff Items (Official Gazette "Narodne novine" No. 65/07 and 154/08), The Decision on the Amount of Tariff Items in the Tariff System for Energy Activities of Production, Distribution and Supply of Thermal Energy (Official Gazette "Narodne novine" No. 115/07,127/07 and 154/08), and Ordinance on Allocation and Calculation of Costs for Supplied Thermal Energy (Official Gazette "Narodne novine" No. 139/08 and 18/09). The Act on Production, Distribution and Supply of Thermal Energy prescribes conditions and ways of carrying out the energy activities of production, distribution and supply of thermal energy, the rights and obligations of the operators who perform the abovementioned activities, the rights and obligations of thermal energy buyers, the provision of means for carrying out these activities, financing the construction of objects and plants for production and distribution of thermal energy, control over the implementation of the Act and penalties for perpetrators of offences defined by the Act.

The Act stipulates that the production of thermal energy for eligible customers and thermal energy supply to eligible customers are to be carried out in accordance with the rules governing market relations. Energy activities of thermal energy production for tariff customers and thermal energy supply to tariff customers is carried out in accordance with the regulations.

The distribution of thermal energy is carried out as a public service. The local self-government unit that has energy operators for thermal energy distribution on its distribution territory is obliged to provide permanent energy activity of thermal energy distribution. The local self-government unit and energy operator for thermal energy distribution are obliged to provide quality performance of thermal energy distribution activity in accordance with the principles of sustainable development, to provide maintenance of energy facilities in working order and to provide transparency. Energy activity of thermal energy distribution is carried based on a concession or a contract for carrying out activities. The right to carry out energy activities for thermal energy distribution and the right to construct power stations for thermal energy distribution can be obtain trough concession. General Conditions for Thermal Energy Supply define energy and technical conditions, as well as economic relationships, between the distributor, the supplier, the producer and the buyer of thermal energy. General Conditions for Thermal Energy Supply define: the procedure of issuing prior thermal energy approval and providing conditions for connection to the distribution network, procedure of issuing thermal energy approval, conditions for connection, delivery and supply of thermal energy and distribution network usage, follow-up on the reliability of supply and quality, mutual contractual relationships between the thermal energy distributors, network users, obligations and responsibilities of thermal energy distributors and network users, conditions of measurements, calculation and charging of the delivered thermal energy, conditions for the implementation of procedures regarding limiting or stopping thermal energy supply and procedures for determining or calculating unauthorized thermal energy consumption.

The Tariff System for Services of Energy Activities of Thermal Energy Production, Distribution and Supply, without the Amounts of Tariff items for the energy activities of thermal energy production, distribution and supply determines the methodology for the calculation of tariff items for thermal energy production, with the exception of eligible customers, for thermal energy distribution and thermal energy supply , with the exception of eligible customers, determines the matrix of the tariff models and elements for determining a regulated maximum income, and prescribes the tables for cost follow-up, the formula for calculating the total income with the help of tariff items, the process of submitting proposals for determining the amounts of tariff items and the data authenticity statement form. The 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. 115/07 and 127/07) stipulated the amounts of tariff items in the Tariff System for Energy Activities of Thermal Energy Production, Distribution and Supply for the corporate entities: 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 in the cities of Zagreb, Osijek, Sisak, Velika Gorica, Zaprešić, Samobor, Karlovac, Slavonski Brod, Split, Varaždin, Rijeka, Virovitica, Vinkovci and Vukovar, which was valid until December 31, 2008.

The Decision on the Amounts of Tariff Items in the Tariff System for Energy Activities of Thermal Energy Production, Distribution and Supply Official Gazette “Narodne novine”, No. 154/08) stipulated the amounts of tariff items in the Tariff System for Energy Activities of Thermal Energy Production, Distribution and Supply in the cities of Zagreb, Osijek, Sisak, Velika Gorica, Zaprešić, Samobor, Karlovac, Slavonski Brod, Split, Varaždin, Rijeka, Virovitica, Vinkovci, Vukovar and Požega, for the corporate entities: 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, which is valid until January 1, 2009.

The Ordinance on the Allocation and calculation of Costs for Supplied Thermal Energy, which entered into force in November, 2008, prescribes the installation of devices for local division of the supplied thermal energy, devices for thermal emission regulation and devices for thermal energy consumption measurement in objects constructed prior to the enforcement of The Act on Production, Distribution and Supply of Thermal Energy. This Ordinance also prescribes models for allocation and calculation of costs for supplied thermal energy on the shared thermal energy meter for thermal energy customers, which are owners of separate parts of buildings that represent an independent usage unit and who register thermal energy through devices for local distribution of supplied thermal energy or measure it with the help of a separate device for thermal energy consumption measurement.

6.3 Thermal energy prices

Prices, i.e. tariffs for thermal energy supply which were in force during 2007 and for a significant part during 2008 had been set up in line with the procedure and in the manner prescribed by the Utility Services Act. Pursuant to the provisions of this Act, the price of the utility service of thermal energy supply and the method of payment had been regulated by the service provider and for each change in price or tariff of its services the supplier had to obtain a prior approval from the local self-government unit of the area covered by this service. This resulted in various prices and methods of calculation and collection for delivered thermal energy in towns in the Republic of Croatia.

Since the quantity of supplied thermal energy had not been measured by the most energy operators, the customers usually paid a certain monthly fixed amount per square meter of residential area (HRK/m^2). This method of calculating costs for delivered thermal energy had to remain in force until the new amount of respective tariff items, determined pursuant to the common Tariff System prescribed by the Agency in May 2006, got enacted by the Government of the Republic of Croatia pursuant to the Proposal of the competent Ministry. During the second half of 2007, the most energy operators submitted their proposals for modification of the amount of tariff items to the Ministry. The Ministry obtained the opinion of the Agency regarding the submitted proposals and forwarded the proposed tariff item amounts to the Government of the Republic of Croatia.

With the 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. 115/07 and 127/07) (hereinafter: Decision on the Amount of Tariff Items from November, 2007) the Government of the Republic of Croatia prescribed the amounts of tariff items for energy activities of thermal energy production, distribution and supply as defined in Tables 6.3.1. and 6.3.2. The energy operators were obliged to apply this amount of tariff items until December 31, 2008.

Table 6.3.1. *The amounts of tariff items of energy operators according to the Decision on the Amount of Tariff Items from November 2007, which are based on the measuring of supplied quantities of thermal energy (VAT excluded) shown according to the tariff elements of the delivered/received and rented power*

Energy operator	Heating			
	Energy		Power	
	Household	Business	Household	Business
	Based on consumption		Monthly	
HEP Toplinarstvo				
Zagreb	113.03 HRK/MWh	197.41 HRK/MWh	8242.42 HRK/MW	12019.16 HRK/MW
Osijek	108.80 HRK/MWh	197.00 HRK/MWh	7910.00 HRK/MW	12016.00 HRK/MW
Sisak	127.16 HRK/MWh	222.08 HRK/MWh	9272.72 HRK/MW	13521.56 HRK/MW
Posebne toplane (Zagreb, Samobor, Zaprešić)	176.33 HRK/MWh	197.41 HRK/MWh	12858.16 HRK/MW	12019.16 HRK/MW
Brod-plin d.o.o., Slavonski Brod	230.00 HRK/MWh	370.00 HRK/MWh	21958.33 HRK/MW	34800.82 HRK/MW
Energo d.o.o., Rijeka	319.29 HRK/MWh	406.98 HRK/MWh	1.13 HRK/m^2	1.9 HRK/m^2
Tehnostan d.o.o., Vukovar		320.00 HRK/MWh		33010.00 HRK/MW
Toplana d.o.o., Karlovac		773.00 HRK/MWh		

Table 6.3.2. *The amounts of tariff items of energy operators according to the Decision on the Amount of Tariff Items from November 2007, based on the square meter of residential or business area (HRK/m^2), cubic meter of the room, members of the household, etc. (VAT excluded)*

Energy operator	Heating		Used hot water
	Household	Business	All users
	Monthly		Monthly / consumption
Energo d.o.o., Rijeka	4.53 HRK/m^2	5.86 HRK/m^2	19.74 HRK/m^3
Toplina d.o.o., Slavonski Brod	2.04 HRK/m^3	3.23 HRK/m^3	17.46 HRK/m^3
Termoplin d.o.o., Varaždin	4.75 HRK/m^2	9.5 HRK/m^2	21.72 HRK/household mem.
Tehnostan d.o.o., Vukovar	5.20 HRK/m^2		20.85 HRK/m^3
Vinkovački vod. i kan. d.o.o., Vinkovci	5.09 HRK/m^2	6.76 HRK/m^3	service N/A
Hvidra d.o.o., Split	2.37 HRK/m^2	3.08 HRK/m^2	service N/A
Virkom d.o.o., Virovitica	0.9+2.51 HRK/m^2	2.2+5.02 HRK/m^2	service N/A
Toplana d.o.o., Karlovac	4.55 HRK/m^2	16.45 HRK/m^2	service N/A

The Act on Production, Distribution and Supply of Thermal Energy prescribed in 2005 that energy operators 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 every energy operator in the Republic of Croatia responsible for thermal energy distribution was obliged to install devices for thermal energy flow regulation and devices for measurement of thermal energy consumption at all thermal stations expired.

In accordance with the provision of the Tariff system for Services of Energy Activities for Thermal Energy Production, Distribution and Supply, without the Amounts of Tariff Items, energy operators were obliged to submit their proposals for determining the amount of tariff items after they gathered data on the delivered thermal energy at billing metering points for 12 months starting from the day of the legal obligation for the installation of devices for measurement of thermal energy consumption at all thermal stations. The prescribed period for gathering respective data expired on April 9, 2008. Thereafter followed another six-month period, in which the energy operator which carries out the energy activities of thermal energy production, distribution and supply had to submit appropriate proposals for determining the amount of tariff items to the respective Ministry. The prescribed period expired on October 9, 2008.

Pursuant to the provisions of the Energy Act, energy operators submitted proposals for determining, i.e. modification of amounts 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, i.e. of the energy operator, regarding the submitted proposals and forwarded proposed tariff item amounts to the Government of the Republic of Croatia.

In the Decision on the Amounts of Tariff Items from December 2008 the Government of the Republic of Croatia prescribed the amounts of tariff items for energy activities of thermal energy production, distribution and supply as presented in tables 6.3.3., 6.3.4 and 6.3.5. The energy operators are obliged to apply the amount of tariff items according to the Decision on the Amount of Tariff Items from December 2008 as of January 1, 2009.

Table 6.3.3. *The amount of tariff items of energy operators according to the Decision on the Amounts of Tariff Items from December 2008 (VAT excluded)*

Energy operator / Town	Energy		Power	
	Households	Economy	Households	Economy
	[HRK/kWh]		*[HRK/kW]*	
HEP-Toplinarstvo d.o.o.				
Zagreb	0.12	0.23	11.13	14.42
Osijek	0.12	0.23	11.13	14.42
Sisak	0.12	0.23	11.13	14.42
Local heating plants (separate boiler room)				
Zagreb, Samobor, Zaprešić, Velika Gorica	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 kan. 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 6.3.4. *The amount of tariff items for technological steam at the energy operator HEP-Toplinarstvo d.o.o. in accordance with the Decision on the Amounts of Tariff Items from December 2008 (VAT excluded)*

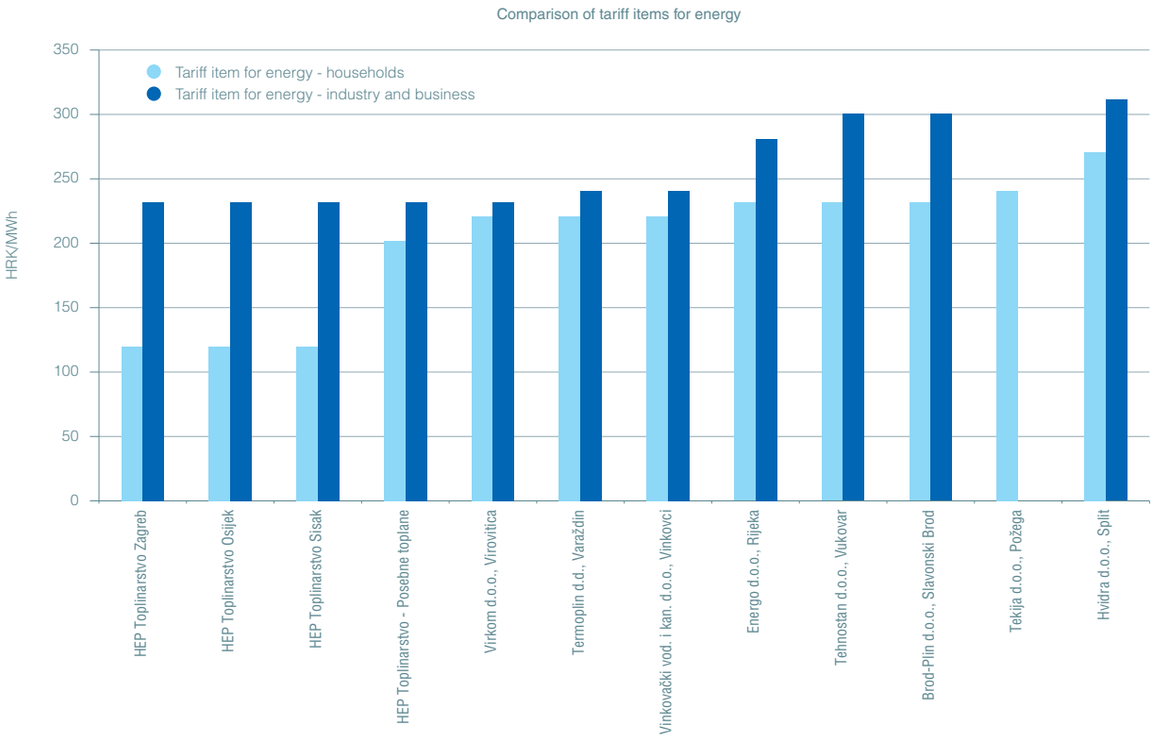
Energy operator / Town	Energy	Power
HEP-Toplinarstvo d.o.o.	*[HRK/t]*	*[HRK/t/h]*
Zagreb	125,70	7.973,60
Osijek	125,70	7.973,60

Table 6.3.5. *The amount of tariff items for boiling/hot water at the energy operator Toplana d.o.o., Karlovac, in accordance with the Decision on the Amounts of Tariff Items from December 2008 (VAT excluded)*

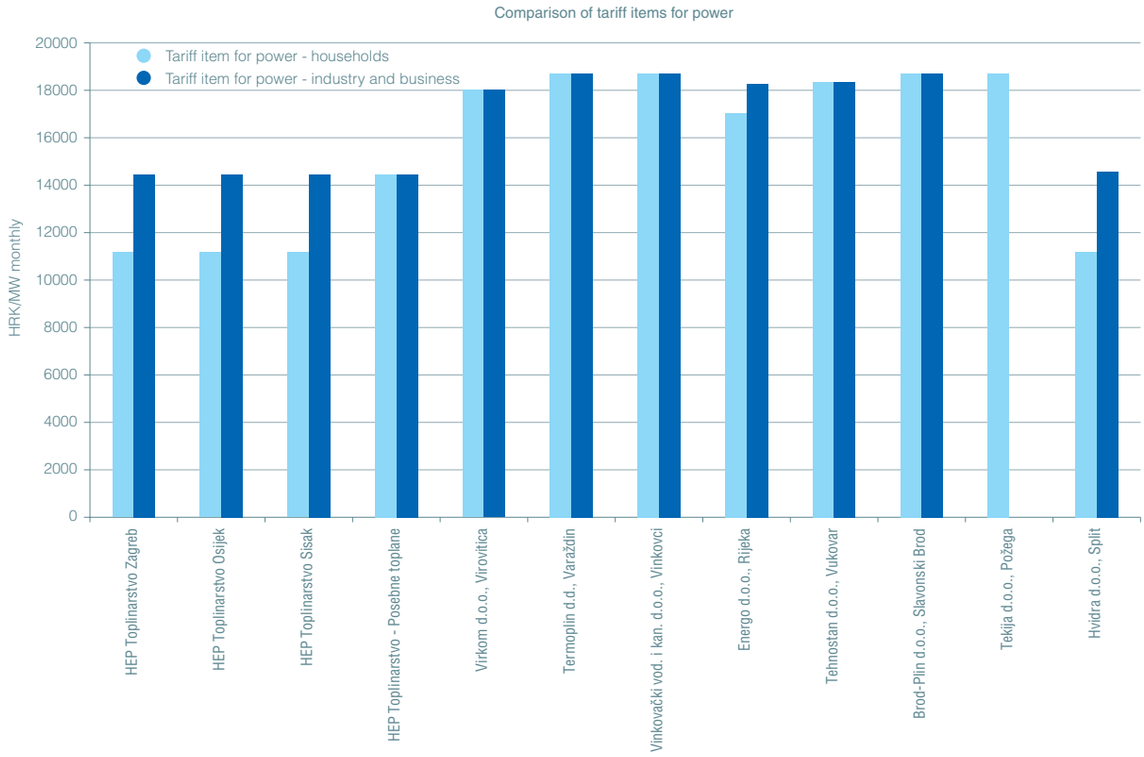
Energy operator	Consumption category	Measurement unit	Amount of tariff items
Toplana d.o.o., Karlovac	Natural persons	(HRK/m^2)	5.51
	business premises	(HRK/m^2) during heating season	19.92
	business premises on the meter	(HRK/MWh)	773

Figures 6.3.1. and 6.3.2. show the results of compared tariff items amounts of energy operators in the Republic of Croatia, providing thermal energy production, distribution and supply services for tariff elements of supplied/received thermal energy and rented power, in accordance with the Decision on the Amount of Tariff Items from December 2008.

Figure 6.3.1. *Comparison of amounts of tariff items for the tariff element of delivered energy, for thermal energy customer categories; households, industry and business consumers (VAT excluded)*



Item 6.3.2. *Comparison of tariff item amounts of energy operators for the tariff element-rented power, for the following customer categories: households, industry and business consumers (VAT excluded)*



The total average selling price of one MWh of delivered thermal energy (VAT excluded) of energy operators in the Republic of Croatia is shown in Figures 6.3.3. and 6.3.4. The comparison was made for tariff costumers category: households, with the assumption of providing the same service level to customer, but at the same time taking into consideration the climatic areas in which the towns in the Republic of Croatia are found.

Figure 6.3.3. *Comparison of the total average price for thermal energy of energy operators in the tariff customers category: households(VAT excluded) shown in HRK/MWh*

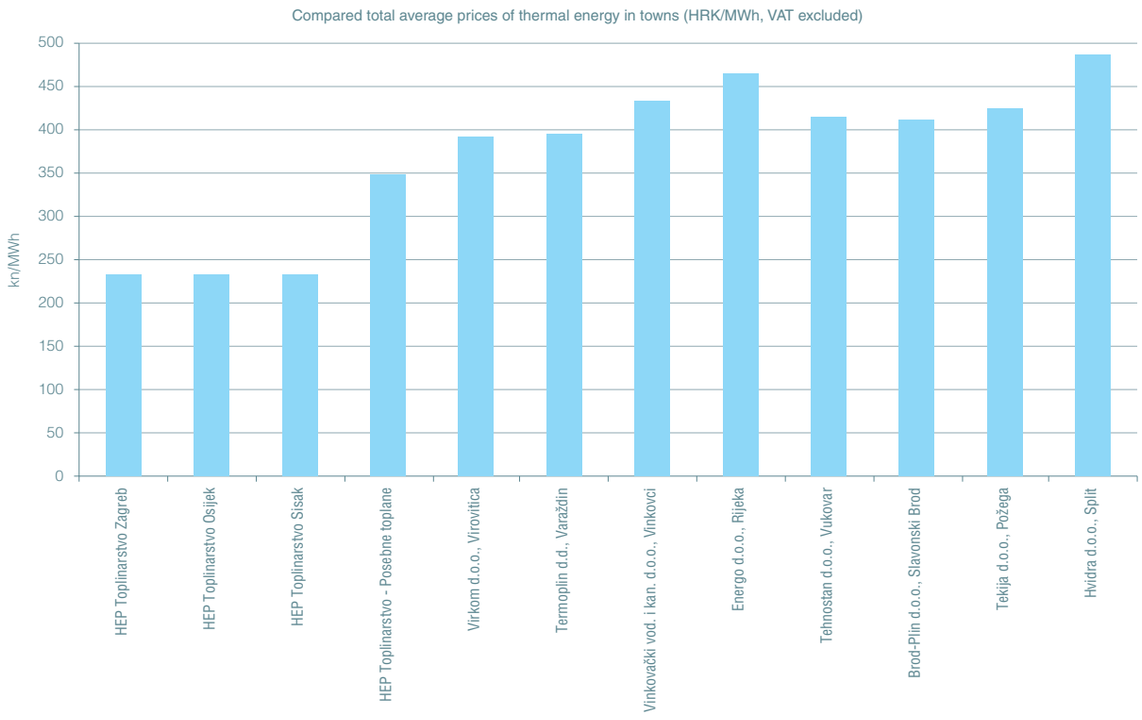


Figure 6.3.4. *Comparison of the total average prices of thermal energy of energy operators in the tariff customers category: households (VAT excluded) shown in EUR/MWh*

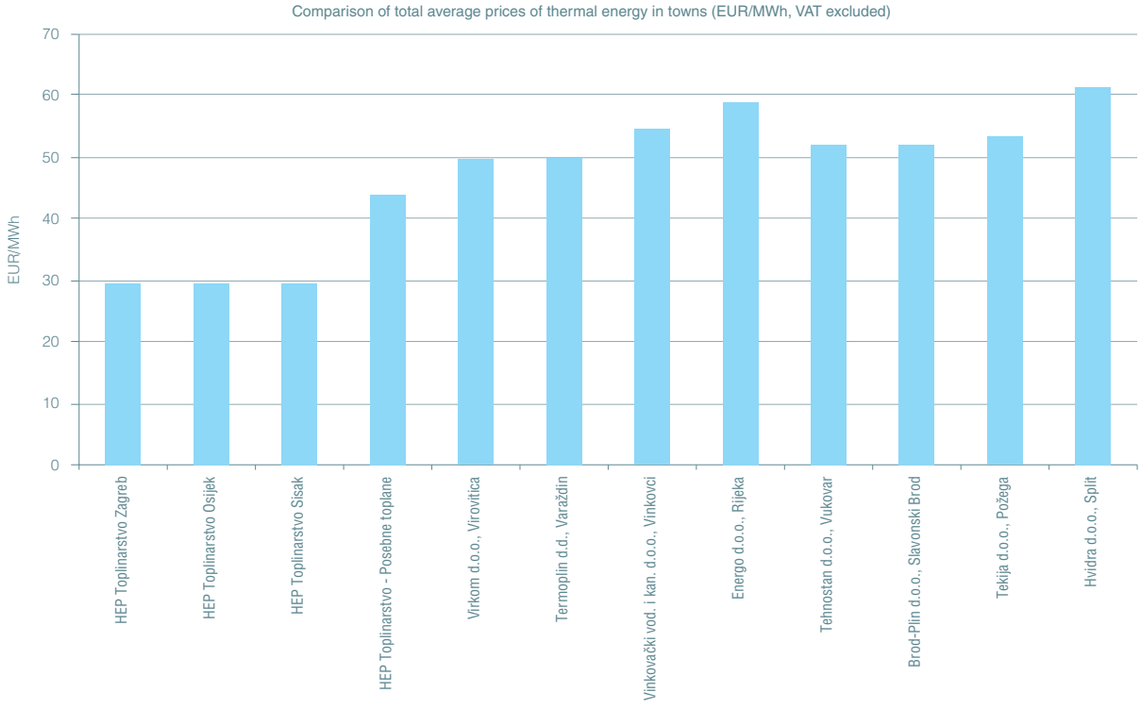


Table 6.3.6. below shows the range of selling prices for thermal energy in Europe (VAT excluded) and the VAT sums for thermal energy.

Table 6.3.6. *Prices of thermal energy in Europe (VAT excluded)*

	VAT excluded		CTS share on the thermal energy market	VAT fot thermal energy
	~EUR/MWh	kn/MWh		
Austria	51	379	16%	20%
The Czech Republic	40	296	45%	5% for thermal energy
	53	392		22% for all other types of energy
Denmark	80	592	48%	25%
Estonia	23	170	30%	5% for thermal energy 22% for all other types of energy
Finland	30	219	49%	22%
	49	364		
Hungary	35	259	16%	20%
	55	407		
Germany	60	442	12%	16%
Iceland	21	153		14% for thermal energy 24% for all other types of energy
Latvia	28	207	70%	5% for households
	33	244		18% for others
Lithuania	33	242	45%	5% for households (state subsidy) 18% for all other energy sectors
Netherlands	53	396	3%	19%
Norway	51	377		
	75	555		
Poland	39	289		22%
Romania	21	155	31%	19%
Slovakia	48	355	40%	19%
Sweden	39	286	38%	25%
	44	323		
Croatia	23*	170	15%	22%
	60	440		

Source: E&P 2007

** The table specifies minimum and maximum average prices of thermal energy (VAT excluded) in the Republic of Croatia in 2007. In accordance with the Decision on the Amounts of Tariff Items from December 2008 the minimum and maximum average prices of thermal energy (VAT excluded) in the Republic of Croatia amount to 29, i.e. 62 EUR/MWh.*

6.4 Activities in the thermal energy sector

Table 6.4.1. specifies the Agency's cases from the thermal energy sector in 2008 according to types, complaints, objections and requests from customers towards the Agency, requests of the Ministry for opinion on proposals regarding amounts of tariff items and proposals regarding amounts of tariff items, as well as requests of energy operators and competent public authorities regarding the opinions and statements of the Agency.

Table 6.4.1. *Customers complaints and requests for opinions and statements from the Agency*

Case type	Number	[%]
Customer complaints and statements	19	49%
Other		
Requests of the Ministry for the Agency's opinion on proposals regarding the amounts of tariff items, proposals regarding the amounts of tariff items	11	28%
Requests of energy operators and competent public authorities for opinions and statements of the Agency	9	23%
Total	39	100%

Energy operators engaged in energy activities of thermal energy production, distribution and supply have the legal obligation to obtain a license from the Agency for carrying out every one of the abovementioned energy activities. The license is not required for carrying out the energy activity of thermal energy production for own needs or if the thermal energy is produced in production plants with a power up to 0.5 MW.

In 2008, the Agency issued and/or extended a total of 13 licenses for carrying out energy activities of thermal energy production, distribution and supply, namely:

- for thermal energy production - three licenses issued and one extended;
- for thermal energy distribution - three licenses issued and one extended;
- for thermal energy supply - four licenses issued and one extended.

The status of licenses issued and extended as per December 31, 2008: 20 thermal energy production licenses, 15 thermal energy distribution licenses and 21 thermal energy supply licenses.

In 2008, the Agency issued 10 opinions regarding proposals of energy operators on determining the amounts of tariff items for energy activities of thermal energy production, distribution and supply and issued a proposal on determining the amount of tariff items for energy activities of thermal energy production, distribution and supply to the Ministry for one energy operator.

In 2008, most of the cases submitted in the thermal energy field referred to client requests (energy operators, customers, Ministries, State Inspectorate and others) for the Agency's opinion, followed by customer complaints.

6.5 Customer protection

In 2008, customer complaints and statements in the thermal energy field related to the following:
- requests for disconnection from the thermal energy system,
- tariff system application and thermal energy consumption calculation,
- request for installing a thermal energy meter,
- thermal energy quality (sanitary hot water temperature, the temperature of the customer's premises),
- request for the Agency's opinion and interpretation of regulations.

Customers complaints and statements sorted by categories are presented in Table 6.5.1. and Figure 6.5.1. In 2008, the Agency resolved 11 out of 19 received customer complaints and statements.

Table 6.5.1. *Customers complaints and statements sorted by type*

Case type	Number	[%]
Requests for disconnection from the thermal energy system	7	37%
Tariff system application and thermal energy consumption calculation	6	32%
Request for installing a thermal energy meter	1	5%
Thermal energy quality (sanitary hot water temperature, temperature of customer's premises)	1	5%
Request for the Agency's opinion and interpretation of regulations	4	21%
Total	19	100%

Figure 6.5.1. *Customers complaints and statements sorted by type*

7

RELIABILITY OF SUPPLY

7 Reliability of Supply

7.1 Reliability 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 reliability 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 (P_{max} and P_{min}) of the Croatian electric power system, the times of their occurrence and the related electricity import and export are presented in Table 7.1.1. The maximal load of the electric power system in 2008 occurred on December 31, 2008 at 18:00 and amounted to 3.009 MW.

Table 7.1.1. *Maximum and minimum load of the electric power system in 2006, 2007 and 2008*

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

The installed power of power plants on the territory of the Republic of Croatia amounts to 3,978 MW. The Republic of Croatia is a part-owner of the nuclear power plant Krško in the Republic of Slovenia and disposes of 50% of the plant's power, i.e. 338 MW.

In 2008, HEP Proizvodnja d.o.o., in cooperation with HEP d.d., carried out the following activities in order to increase the installed capacities:
- Hydro power plant Lešće with the power of 42 MW is currently undergoing water-gate and engine room reconfiguration, also works on the switchyards and distribution of the power plant are in progress;
- In the additional cogeneration combined gas plant at the site 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"), the installation of equipment for all parts of the gas turbine, steam turbine and boiler-room is being continued with the objective of finishing the construction in 2009;
- For the new cogeneration gas-steam plant Thermal power plant "Sisak C" with the electric power of 230 MW and thermal power of 50 MW, which is planed to be constructed alongside the existing plants Thermal power plant "Sisak A" and Thermal power plant "Sisak B", project documentation was drafted and preparations for contracting equipment were maid in 2008;
- The investment project, Hydro power plant Dubrovnik, which was built in 1965, also included plans for the second phase of the hydro power plant. Therefore, a preliminary design for upgrading the existing 216 MW with additional 304 MW was prepared in 2007. Project activities were temporarily discontinued in 2008;
- For the hydro power plant Senj II, with the power of 342 MW, all project activities were temporarily stopped;
- The combined cogeneration gas-steam plant Thermal power plant "Slavonija", with the electrical power of 400 MW and thermal power of 140 M, whose construction will ensure the reliability 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 insure additional 130 MW of production capacity continued.

Among other significant investments into production capacities the flowing activities in 2008 need to be mentioned:
- The wind power plant Vrataruša with the power of 42 MW is in the construction phase with expected commissioning in 2009;
- The construction of the wind power plant Orlice with the power of 9.6 MW begun with the expected commissioning in 2009,
- For three wind power plants with the total power of 54 MW in the hinterland of Zadar (Wind power plants ZD2, ZD3 and ZD6) documents for construction permit were obtained.

In 2008, there was no increase in production capacities, bet there was also no decommissioning of power plants.

The Electricity Market Act prescribes in Article 9 the manner in which the construction of production plants

is approved. Electricity production plant may be built by legal or natural persons under the condition that the production plant to be built complies with the criteria determined in the procedure for issuing energy approval for construction of production plants. The Government of the Republic of Croatia prescribes the principles and criteria, at the Proposal of the competent Ministry, with prior opinion obtained from the Agency. The necessary power plant construction has to comply with the regulations of the construction and physical planning sector, in the jurisdiction of the Ministry of Environmental Protection, Physical Planning and Construction, whereas the energy approval for construction represents merely a precondition in the process of acquiring a building permit.

After the construction of the plant and obtaining of the certificate of occupancy, the legal or natural person, who is the owner (ore has the right of use) of the power plant submits a request to the Agency for the issuing of a license for carrying out the energy activity of electricity production. Such a license enables the sale of electricity to traders or suppliers or export.

If the construction of production plants combined with the measures of electricity consumption management and measures for increase of energy efficiency is not sufficient, a decision on construction of plants for electricity production through public tenders in the interest of supply reliability, environmental protection or promotion of energy effectiveness can be made. In this case the decision on public tender and the selection of the most favourable bidder for the construction of production 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 above is made by the Government of the Republic of Croatia at to the Proposal of the Agency. The Agency is responsible for the organization and enforcement of the tender procedure for the construction of power plants.

The incentive system for electricity generation from renewable sources and cogeneration, i.e. Tariff Systems for Electricity Production from Renewable Energy Sources and Cogeneration represents an important incentive framework for investments into electricity production plants, which is evident from the number of projects, which obtained energy approvals for construction and the number of plants, which obtained prior decisions for acquiring the status of eligible producers and the decisions for acquiring the status of eligible producers. Plants for which prior decisions had been issued have to be constructed within three years.

Within the incentive system, the Ministry manages a Registry of projects and plants for the use of renewable energy sources and cogeneration and of eligible producers in accordance with the Ordinance on Use of Renewable Energy Sources and Cogeneration. The same Ordinance also prescribes the issuing of energy approvals for construction of plants which use renewable energy sources and cogeneration plants. This way the construction of the abovementioned plants is approved by the Ministry prior to obtaining a building permit. It also defines a prior energy permit, which enables the analysis of the potential of the renewable energy source at he future plant site. In 2008, the Ministry issued 100 prior energy approvals for various types of production plants with total planed installed power of up to 2,089 MW. In 2008, 10 energy approvals were also issued for the construction of a total of 77.5 MW of new production capacities with various technologies. It must be pointed out that more than 95% of the planed capacities of the issued prior energy approvals and energy approvals were issued for wind power plants. Prior approval is issued for the period of 48 months for the plants, which have the obligation to obtain a site permit, i.e. 18 months if there is no obligation for obtaining a site permit prescribed.

In 2008, the Agency approved three-year plans for development and construction of a transmission network operator and distribution network operator for the period between 2008 and 2010, whereby proper attention was paid to network maintenance, plant security and development in the sense of reinforcement of the national network and cross-border capacities.

The most important investments form the aspect of plant security and cross-border trade in accordance with the tree-year plan for development and construction of HEP-OPS, include the following:
- Construction of the 400 kV power-transmission line Ernestinovo - Pecs until 2010 with the objective to increase the cross-border capacities on the Croatia- Hungary border with regional significance in order to connect the markets of Central and Southeast Europe,
- Construction of the 220 kV cross-border line Mraclin - Prijedor on the Croatia - Bosnia and Herzegovina border in order to increase the supply reliability, which is especially conditioned by the construction of the thermal power plant TE “Sisak C”, Continuation of the construction of the 220 kV network in Istra with associated transformer substations,
- Construction and reinforcement of the 220 kV network for energy reception form the planed power plants in the transmission area of Split (in order to revitalize and expand the hydro power plant Zakučac and hydro power plant Dubrovnik) and
- Construction and reinforcement of the 110 kV network in accordance with revitalization priorities and the necessity of meeting the consumption.

Among other additional capital investments of HEP-OPS, the following needs to be mentioned: ICT equipment revitalization project for the period between 2008 and 2010 with the objective of increasing the quality of administration and management. The project will also ensure market functions which will enable a higher quality appearance of Croatian energy operators on the regional electricity market.

7.2 Security of natural gas supply

Participants in the gas market are responsible for the security of gas supply within their activity. The Ministry is responsible for:
- follow-up on the relationship between supply and demand on the gas market,
- preparation of an estimate of the future consumption and available supply,
- 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 available supply,
- 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 the security of natural gas supply it is necessary to fully apply legal acts and subordinate regulations from the gas sector in connection with gas market restructuring.

In September 2008, the Regulation on Security of Natural Gas Supply was issued and for the first time applied during the "gas crisis" in January 2009, with the goal to define measures for security of natural gas supply. Namely, due to a total discontinuation of natural gas supply from the Russian Federation and the incurred disruption in the supply of end 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 of production from inland deposits, intervention import from the EU countries and by decreasing natural gas consumption, alongside conducting measures of the 4th, 5th and 6th degree of supply decrease and discontinuation of delivery, the sustainability of the gas system and the uninterrupted gas supply to all protected customers in the Republic of Croatia was maintained.

Apart from the legal regulations, an important precondition for security of gas supply is the development of new infrastructure. The development of new infrastructure is systematically facilitated, 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 for yearly updates. The development plans are approved by the Ministry, which previously obtained an opinion of the Agency.

In order to further improve the security of supply 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 planed 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 after the harmonization of technical details on interconnection they also signed a Letter of Intent on July 3, 2008. On these grounds, the Joint Development Agreement of two-way interconnection gas pipelines, defining the obligations and rights of the partners (Plinacro d.o.o. and FGSZ) regarding the construction of the Hungarian route Varosföld-Bata-Dravaszerdahely, 210 km long, and the Croatian route Donji Miholjac-Beničanci-Slobodnica, 88 km long, all with the unique diameter DN 800, with maximum operating pressure of 75 bars, and the total capacity of 6.5 billion m3 per year was signed. The Agreement plans the construction of the whole interconnection gas pipeline to be completed by the end of 2010, and its commissioning at the beginning of 2011. Activities regarding the development of the project Ionian-Adriatic Pipeline - IAP Ploče-Fieri, enabling the connection of the Croatian gas pipeline system with the planned Trans Adriatic Pipeline - TAP project also took place in 2008. With the objective of the IAP Project realization, a Ministry Declaration was signed by the representatives of the relevant ministries of the Republic of Albania, Montenegro and the Republic of Croatia, expressing full support to the realization of the abovementioned gas pipeline, in Zagreb on September 25, 2007. In December 2008, Bosnia and Herzegovina signed the Ministry Declaration. Preliminary and research work, preceding the full Feasibility Study is in progress, as well as the forming of a Interstate Committee, as a coordination and supervision authority of the IAP project, consisting of representatives of the relevant ministries of the Republic of Albania, Montenegro, Bosnia and Herzegovina and the Republic of Croatia.

The LNG terminal, whose investor should be the international consortium Adria LNG, constituted out of the German companies E.ON Ruhrgas and RWE Transgas, the Austrian OMV, the French Total and the Slovenian Geoplin, should also have great importance in ensuring the energy independence of the Republic of Croatia and the diversification of supply routs for natural gas. The entry of the Croatian company LNG Hrvatska, whose founders should be the companies INA d.d., HEP d.d. and Plinacro d.o.o., into the consortium is planned for 2009. In September 2009, the Government of the Republic of Croatia adopted the Decision by which the site Dina nearby Omišalj on the island of Krk was deemed

as the most favourable for the construction of the LNG terminal. In the course of 2009 the preparation of an environmental study is expected. The procedure of issuing a site permit for the LNG terminal is also in progress. The construction of the terminal for the liquefied natural gas would secure additional quantities of gas from north Africa, the Middle East and other areas, while diversifying the supply routes for natural gas. Potential markets for new gas quantities, besides the Croatian market, are West European and central European countries. The dynamics of the project development and realization is foreseen in two phases: in the first phase, ensuring the capacity for gasification of the natural gas between 5 and 6 billion m^3, and in the second phase up to 14 billion m^3. This way new quantities of natural gas would be ensured for the Croatian market, up to 2 billion m^3 per year, and more if necessary. Besides increasing supply security and diversifying supply routes in accordance with the growing demand for natural gas, the realization of this project would 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.

Besides the construction of the transmission system and LNG terminals, investments into additional storage capacities represent an important precondition for increasing supply reliability, considering the expected increase in natural gas consumption and great seasonal fluctuations in the natural gas consumption.

7.3 Security of oil and oil derivatives supply

In accordance with the Act on Oil and Oil Derivatives Market, secure, regular and high-quality supply of oil derivatives is supervised by the Ministry.

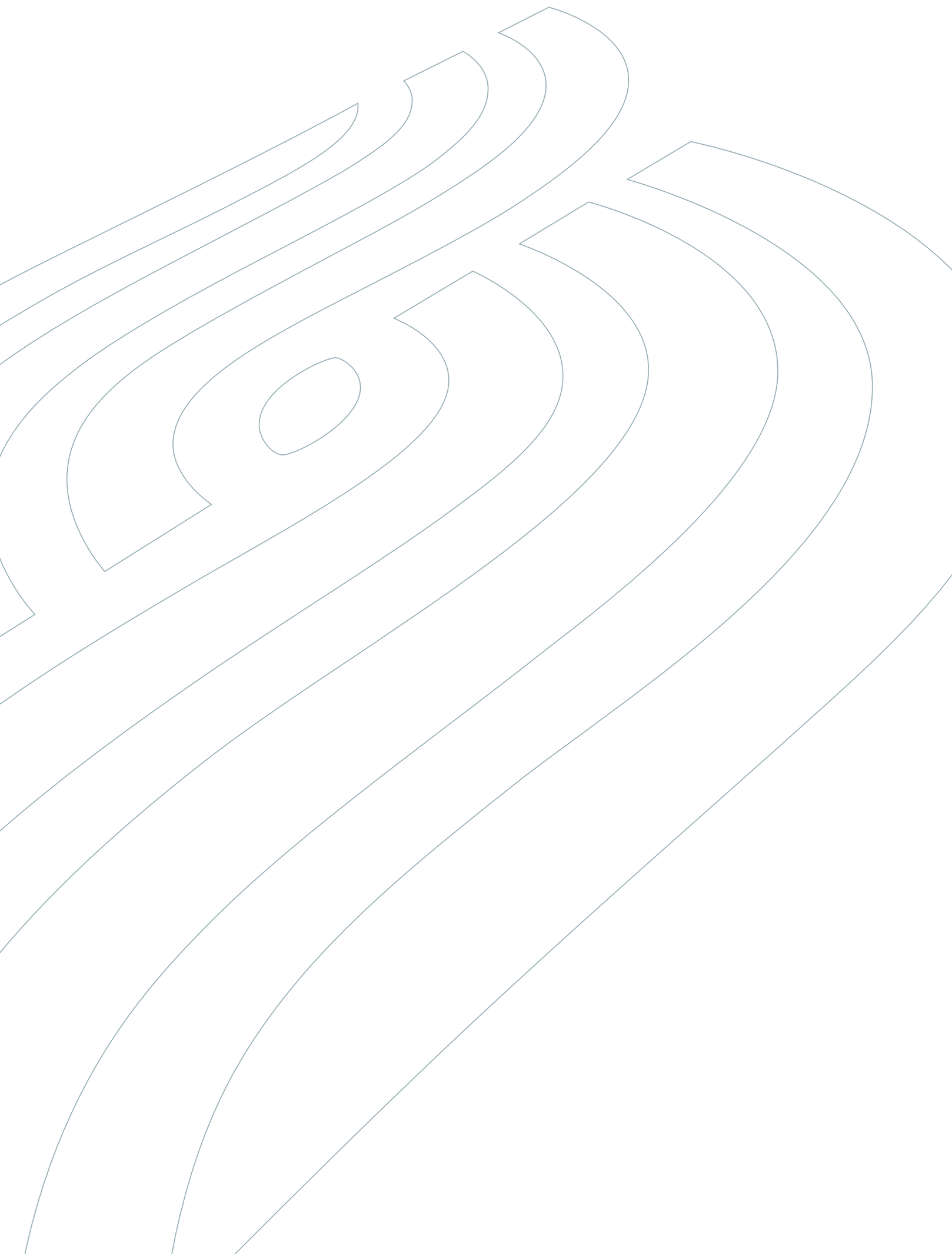
The intervention plan in case of extraordinary disruptions in the supply of the market with oil and oil derivatives defines procedures and criteria for determining the extraordinary disruptions in the supply of the market with oil and oil derivatives and the procedures for their normalization.

The implementation of the Intervention Plan in case of extraordinary disruptions in the supply of the market with oil and oil derivatives is ensured by the Expert Committee, stipulated by the Decision on Founding the Expert Committee for follow-up on the regular supply of the market with oil and oil derivatives. The chairman, deputy chairman and members of the Expert Committee for follow-up on the regular supply of the market with oil and oil derivatives were appointed by the Decision of the Government of the Republic of Croatia. One of the members is also a representative of the Agency.

Additionally, the Act on Oil and Oil Derivatives Market also compiling obligatory stocks of oil and oil derivatives in order to ensure oil and oil derivatives supply in case of a threat to the energy security of the state and in case of extraordinary disruptions in the supply. HANDA is obliged to compile compulsory stocks in the amount of 90-day average consumption before July 31, 2012. The quantity and structure of compulsory stocks is determined by the Government of the Republic of Croatia. Therefore the Government of the Republic of Croatia has adopted the Decision on Quantity and Structure of Compulsory Stocks of Oil and Oil Derivatives (Official Gazette “Narodne novine”, No. 46/08) for 2008, based on realized consumption of oil derivatives in 2007. In May 2009, the Decision on Quantity and Structure of Compulsory Stocks of Oil and Oil Derivatives for the Year 2009 (Official Gazette “Narodne novine”, No. 48/09) was adopted.

Biofuels as addition to or substitute for diesel fuels or gasoline for transport needsThe Act on Oil and Oil Derivatives Market recognizes the usage of biofuels as addition to oil derivatives if they comply with the regulation on biofuels quality. The Regulation on Biofuels Quality (Official Gazette “Narodne novine”, No. 141/05) prescribes marginal values of the characteristics of the biofuels quality, which represent an addition to or substitute for diesel fuels or gasoline for transport needs. Decision on Percentage of Biofuels in Total Quantities of Fuel in 2008 and Quantities of Biofuel which Are to Be Placed on the Domestic Market in 2008 (Official Gazette “Narodne novine”, No. 52/08) prescribes that the percentage of biofuels in total quantities of energy fuel consumption shall amount to 1.21 %, which equals to 1,13 PJ of biodiesel (equivalent to 30,000 tons).

The Act on Biofuels for Transportation ensures the stimulation of biofuels production and consumption in the Republic of Croatia, especially in the sense of stimulating the consumption of biofuels and other renewable fuels for transportation and harmonizes the Croatian legislation with acquis communautaire (of the EU).



8

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 out regulated activities regarding electricity as public service. Transmission and distribution of electricity are regulated activities, whereas production and supply of electricity are market activities. However, customers from the household category (42% of the total consumption according to the data for 2008) have the right to electricity supply from tariff customers suppliers if they do not want to use their status as eligible customers and freely contract electricity supply. All customers who lose their suppler or whose supplier went out of business have the same right but only up to 30 days. Tariff customers supplier is an energy operator which has the license to carry out electricity supply activities and the public service obligation to supply tariff customers with electricity on regulated conditions and regulated prices. The Electricity Market Act defines that in the Republic of Croatia the distribution system operator is also obliged to carry out activities of tariff customer supplier.

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

It must be pointed out that until June 30, 2009 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 on providing balancing energy services in the electric power system.

In June, 2009, the Agency adopted amendments to the Methodology on providing balancing energy services in the electric power system, which defines that eligible customers, that 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 production for tariff customers, increased by 20%. These customers also pay the supply fee (costs of calculation of electricity consumption, costs of bill issuing and collecting) in accordance to the tariff item amounts from tariff system for electricity production for tariff customers.

8.2 Natural gas

Energy activities defined by The Energy Act are carried out in accordance with the rules regulating market relations or as public service. The public service obligation is defined as an obligation of the energy undertakings to carry out certain energy activities as public services. Public service is 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 into account the safety, regularity and quality of service, environmental protection, efficiency of energy utilization and climate protection, and it is provided based on the principles of transparency of operation and supervision by legally provided authorities.

Energy activities of gas procurement, natural gas storage, natural gas transmission, gas distribution, LNG facility operation, organization of the natural gas market and supply of gas to tariff customers are carried out as public services in the gas sector. While gas supply means gas trade, gas procurement means gas supply of tariff customer suppliers and suppliers under the obligation of the public service of gas supply.

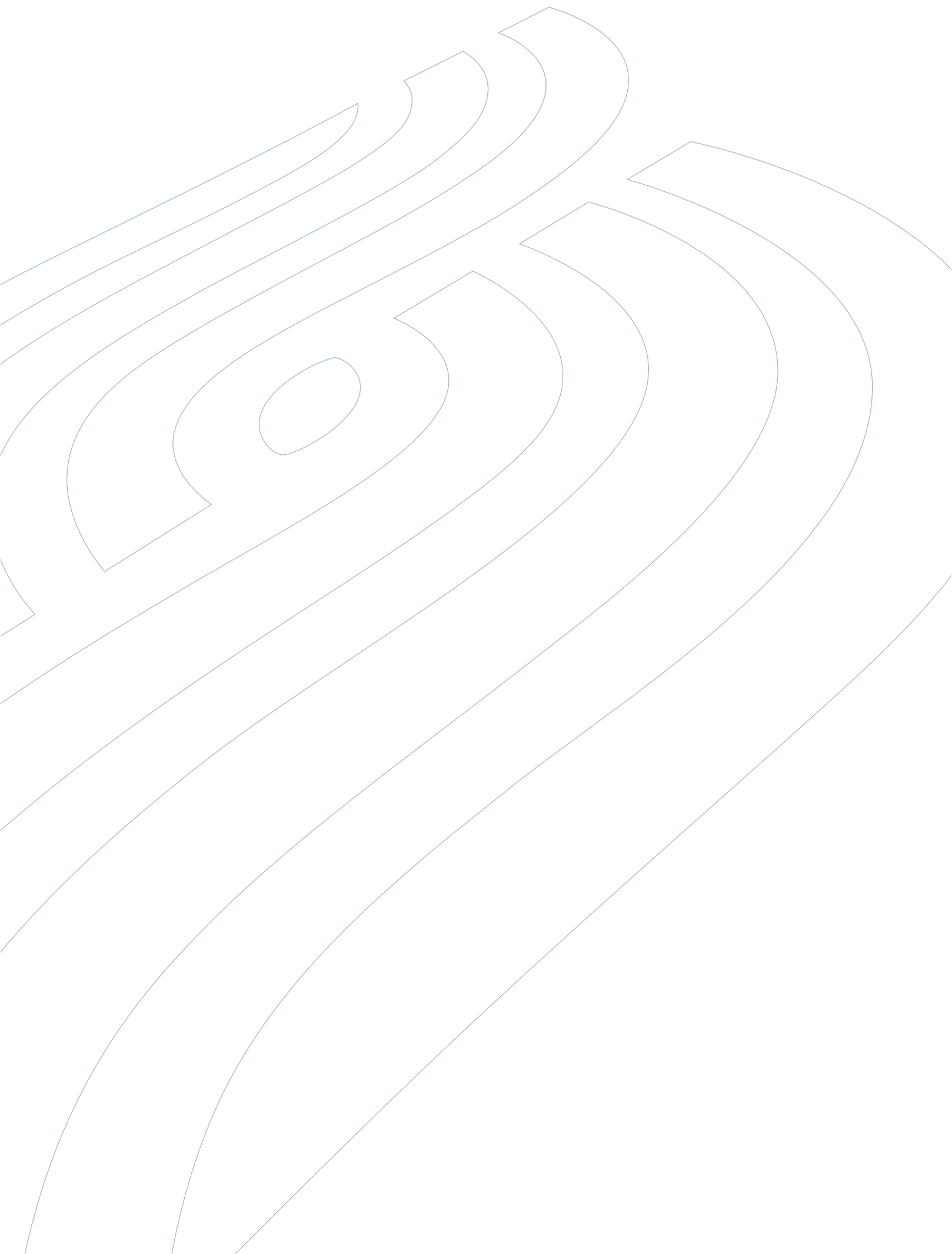
Eligible customer from household category who has not chosen their supplier within six months after the opening of the market, is entitled to gas supply by the supplier who is the holder of a public service

obligation 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 also entitled to the public service of gas supply.

The supplier which carried out the gas supply activity for tariff customers from household category on July 31, 2008 is established as a supplier who is the holder of a public service obligation of gas supply, for the period of five years. After the expiration of the five-year period, the holder of a public service obligation of gas supply for the customers from the household category for the next five year period is selected by public tender.

The Gas Market Act determines the holder of a public service obligation of gas procurement for the period until July 31, 2013. After the expiration of that period the holder of a public service obligation of gas procurement for the following five-year period is selected by public tender issued by the Agency.

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



9

LIST OF TABLES AND FIGURES

9 List of Tables and Figures

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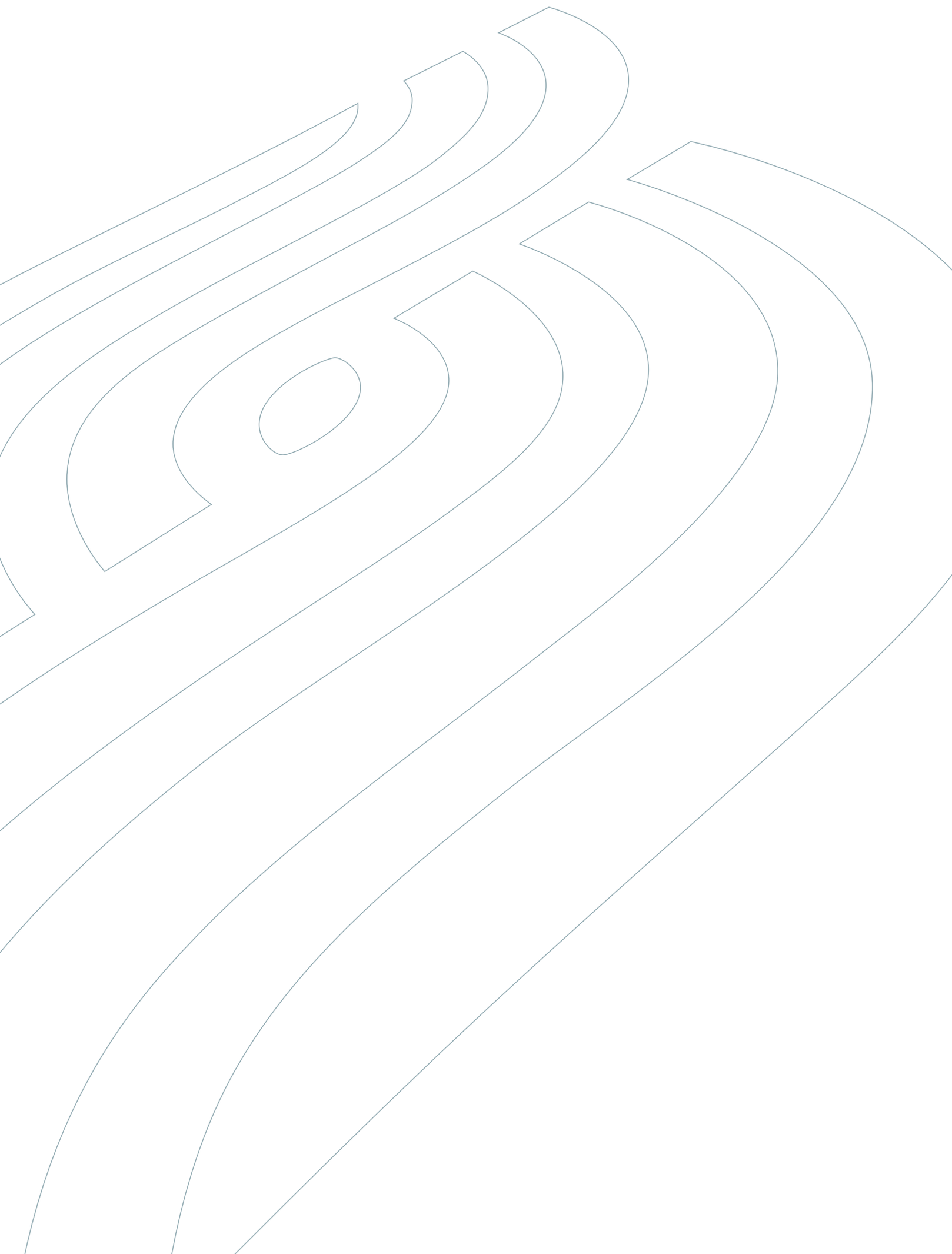

10

ANNEX- LICENSES FOR CARRYING OUT THE ENERGY ACTIVES

10 Annex - Licenses For Carrying Out The Energy Actives

List of energy operators to which the Agency issued, renewed or transferred licenses for carrying out the energy activities in 2008, sorted by energy activities as follows:

Issued licenses:

- Electricity production- one license (TUDIĆ ELEKTRO CENTAR d.o.o., Krapljanska 8 from Šibenik);
- Storage of natural gas - one license (Podzemno skladište plina d.o.o., Šubićeva 29 from Zagreb);
- Gas distribution - three licenses (KOMUNALIJE-PLIN d.o.o., Radnička cesta 61 from Đurđenovac, RADNIK-PLIN d.o.o., Ulica kralja Tomislava 45 from Križevci and ELEKTROMETAL-DISTRIBUCIJA PLINA d.o.o., Ferde Rusana 21 from Bjelovar);
- Gas supply- 15 licenses (Dukom d.o.o., Josipa Zorića 70 from Dugo Selo, Metalprodukt d.d., Bjelovarska 32 from Šandrovac, Termoplin-Novi Marof d.d., Varaždinska 48 from Novi Marof, Elektrometal d.d., Ferde Rusana 21 from Bjelovar, Komunalije d.o.o., Svetog Andrije 14 from Čazma, Virkom d.o.o., Ferde Rusana 2 from Virovitica, Komunalac d.o.o., Mate Lovraka bb from Garešnica, Ivakop d.o.o., Savska 50 from Ivanić-Grad, Komunalije d.o.o., Radnička c. 61 from Đurđevac, PRVO PLINARSKO DRUŠTVO d.o.o., A. Stepinca 27 from Vukovar, Komunalac d.o.o., Mosna ulica 15 from Koprivnica, ENERGO METAN d.o.o., Trg Matice Hrvatske 5 from Samobor, KOMUNALNO PITOMAČA d.o.o., Vinogradska 41 from Pitomača, KOMUNALAC KONJŠČINA d.o.o., Jertovec 150 from Konjščina and KOMUNALIJE-PLIN d.o.o., Radnička cesta 61 from Đurđenovac);
- Thermal energy production - three licenses (Tekija d.o.o., Vodovodna 1 from Požega, TERMALNA VODA d.o.o., Trg Josipa Bana Jelačića 16 from Topusko and TKT-TOPLOTA PETRINJA d.o.o., Sajmišna bb from Petrinja);
- Thermal energy distribution - three licenses (Tekija d.o.o., Vodovodna 1 from Požega, TERMALNA VODA d.o.o., Trg Josipa Bana Jelačića 16 from Topusko and TKT-TOPLOTA PETRINJA d.o.o., Sajmišna bb from Petrinja);
- Thermal energy supply - four licenses (Tekija d.o.o., Vodovodna 1 from Požega, TERMALNA VODA d.o.o., Trg Josipa Bana Jelačića 16 from Topusko, DIOKI Organska petrokemija d.d., Žitnjak bb from Zagreb and TKT-TOPLOTA PETRINJA d.o.o., Sajmišna bb from Petrinja);
- Oil derivatives production- one license (MODIBIT d.o.o., Karlovačka cesta 24 from Ozalj);
- Transportation of oil, oil derivatives and biofuel by road transportation - twenty-five licenses (**legal persons:** ANTUNOVIĆ TA d.o.o., Kobiljačka 102/I from Sesvetski Kraljevac, MUŽAR AUTOPRIJEVOZ d.o.o.,Gornji Dragičevac 19 from Čazma, ALDO COMMERCE d.o.o., Molindrio 11a from Poreč, ŽMINJ PETROL d.o.o., Matka Laginje bb from Žminj, GRIČ PETROL d.o.o., Mirka Kleščića 7 from Samobor, GARCOS d.o.o., Raška 10 from Osijek, OSOVINA d.o.o., Domovinskog rata 41 from Dugopolje, SIROVINA BENZ d.o.o. za trgovinu, Drniška cesta 3 from Knin, FILTOM d.o.o., Furićevo bb from Viškovo, CROBENZ d.d., Radnička cesta 228 from Zagreb, GRŽINČIĆ d.o.o., Podstrmac 6 from Klana, EURO-PETROL d.o.o., Martinkovac 143b from Rijeka, VUGIP d.o.o., Kameniti stol 23c from Zagreb, GLATKI d.o.o., Gradec 62 from Gradec, GRCIĆ SERVICE STATION d.o.o., Sv. Mare bb from Šibenik, LOIDDA d.o.o., Vlaška 40/1 from Zagreb, PROMAG d.o.o., Čavle 35 from Čavle, H.M.-5 d.o.o., Gradečki Pavlovec 17 from Gradec and MODIBIT d.o.o., Karlovačka cesta 124 from Ozalj; **Natural persons:** Autoprijevoznik Vlado Pucović, D. Budišina 83 from Petrinja, VE-GO obrtnička, proizvodno i uslužna zadruga, Zagrebačka 6 from Velika Gorica, ANTUNOVIĆ TA d.o.o., Kobiljačka 102/I from Sesvetski Kraljevec, MUŽAR AUTOPRIJEVOZ d.o.o.,Gornji Dragičevac 19 from Čazma, ALDO COMMERCE d.o.o., Molindrio 11a from Poreč, Autoprijevozнički obrt i trgovina KUKEC, Donji Markovac 9 from Farkaševac);
- Storage of oil and oil derivatives - five licenses (TERMINAL SLAVONSKI BROD d.o.o., Dr. Mile Budaka 1 from Slavonski Brod, DIOKI Organska petrokemija d.d., Žitnjak bb from Zagreb, KEPOL TERMINAL d.o.o., Gaženička bb from Zadar, PROPLIN d.o.o., Savska cesta 41/II from Zagreb and BUTAN PLIN d.o.o., Sv. Vidal 34 from Novigrad);
- Wholesale trade in liquefied petroleum gas (LPG) - one license (BUTAN PLIN d.o.o., Sveti Vidal 34 from Novigrad);
- Trading, mediation and representation at the energy market - three licenses (MODIBIT d.o.o., Karlovačka cesta 124 from Ozalj, Interenergo d.o.o., Kralja Držislava 3 from Zagreb and RUDNAP energija d.o.o., Ivana Lučića 2a from Zagreb);

Renewed licenses:

- Electricity supply - two licenses (HEP Opskrba d.o.o., Ulica grada Vukovara 37 from Zagreb, Korlea d.o.o., Josipa Marohnića 1 from Zagreb);
- Gas distribution - two licenses (ENERGOMETAN d.o.o., Trg Matice Hrvatske 5 from Samobor and ZAGORSKI METALAC d.o.o., Celine 2 from Zabok);
- Thermal energy distribution - one license (TEHNOSTAN d.o.o., Dr.Franje Tuđmana 23 from Vukovar);
- Thermal energy production - one licence (TEHNOSTAN d.o.o., Dr.Franje Tuđmana 23 from Vukovar);
- Thermal energy supply - two licenses (TEHNOSTAN d.o.o., Dr.Franje Tuđmana 23 from Vukovar and INAS-IVEST d.o.o.za usluge i trgovinu from Zagreb);
- Wholesale trade in oil derivatives - seven licenses (PETROL TRGOVINA d.o.o., Oreškovićeva 3d, Otok from Zagreb, OMV Hrvatska d.o.o., Josipa Marohnića 1 from Zagreb, ANTUNOVIĆ TA d.o.o., Zagrebačka avenija 100A from Zagreb, OG ADRIATIC d.o.o., Pantovčak 42/1 from Zagreb, MODIBIT d.o.o., Karlovačka cesta 124 from Ozalj, GRIČ PETROL d.o.o., Mirka Kleščića 7 from Samobor and EURO-PETROL d.o.o., Martinkovac 143b from Rijeka);
- Storage of oil and oil derivatives - four licenses (NAFTNI TERMINALI FEDERACIJE d.o.o., Neretljanskih gusara bb from Ploče, GRIČ PETROL d.o.o., Mirka Kleščića 7 from Samobor, EURO-PETROL d.o.o., Martinkovac 143 b from Rijeka and ANTUNOVIĆ TA d.o.o., Zagrebačka avenija 100A from Zagreb);
- Trading, mediation and representation at the energy market - six licenses (CROPLIN d.o.o., Šubićeva 29 from Zagreb, ENERGOREMONT d.d., Mala Švarča 155 from Karlovac, INAS-INVEST d.o.o., Žitnjak bb from Zagreb, MONTMONTAŽA d.d., Rakitnica 2 from Zagreb, Atel Hrvatska d.o.o.,Vijenac 7 from Zagreb and KORLEA d.o.o., Josipa Marohnića 1 from Zagreb);

Transferred licenses

- Gas distribution - one license (KOMUNALAC d.o.o. from Koprivnica to the company KOPRIVNICA PLIN - distribucija plina, d.o.o. from Koprivnica);

Number of the licenses issued, renewed and transferred for carrying out energy activities during 2008 is presented by the type of energy activity in the following table:

Energy activity	**Licenses issued (number)**
Electricity production	1
Storage of natural gas	1
Gas distribution	3
Gas supply	15
Thermal energy production	3
Thermal energy distribution	3
Thermal energy supply	4
Oil derivatives production	1
Transportation of oil, oil derivatives and biofuel by roads	25
Storage of oil and oil derivatives	5
Wholesale trade in liquefied petroleum gas (LPG)	1
Trading, mediation and representation at the energy market	3
TOTAL:	**65**
Energy activity	**Licenses renewed (number)**
Electricity supply	2
Gas distribution	2
Wholesale trade in oil derivatives	7
Storage of oil and oil derivatives	4
Thermal energy production	1
Thermal energy distribution	1
Thermal energy supply	2
Trading, mediation and representation at the energy market	6
TOTAL:	**25**
Energy activity	**Licenses transfered (number)**
Gas distribution	1
TOTAL:	**1**
TOTAL:	**91**

Overview of the licenses for carrying out energy activities on December 31, 2008

Energy activity	Licenses (status on December 31, 2008)
Electricity production	9
Transmission of electricity	1
Distribution of electricity	1
Electricity supply	4
Organization of the electricity market	1
Gas production	0
Natural gas procurement	1
Storage of natural gas	2
Gas transportation	1
Gas distribution	42
Natural gas supply	38
Production of oil derivatives	2
Production of biofuel	1
Oil transportation through oil pipelines and other unspecified means of transportation	2
Oil derivatives transportation through product pipelines and other unspecified means of transportation	4
Transportation of oil, oil derivatives and biofuels by road vehicles	136
Wholesale trade in oil derivatives	19
Storage of oil and oil derivatives	22
Thermal energy production	20
Thermal energy distribution	15
Thermal energy supply	21
Wholesale trade in liquefied natural gas (LNG)	1
Trading, mediation and representation at the energy market	34
Wholesale and retail trade in liquefied petroleum gas (LPG)	10
TOTAL:	387

On July 1, 2009, the Agency issued a total of 424 licenses for carrying out energy activities. Data on licenses for carrying out energy activities can be found in the Consolidated Registry of Licenses kept by the Agency on its website, *http://www.theAgency.hr/hrvatski/html/dozvole.html.*

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