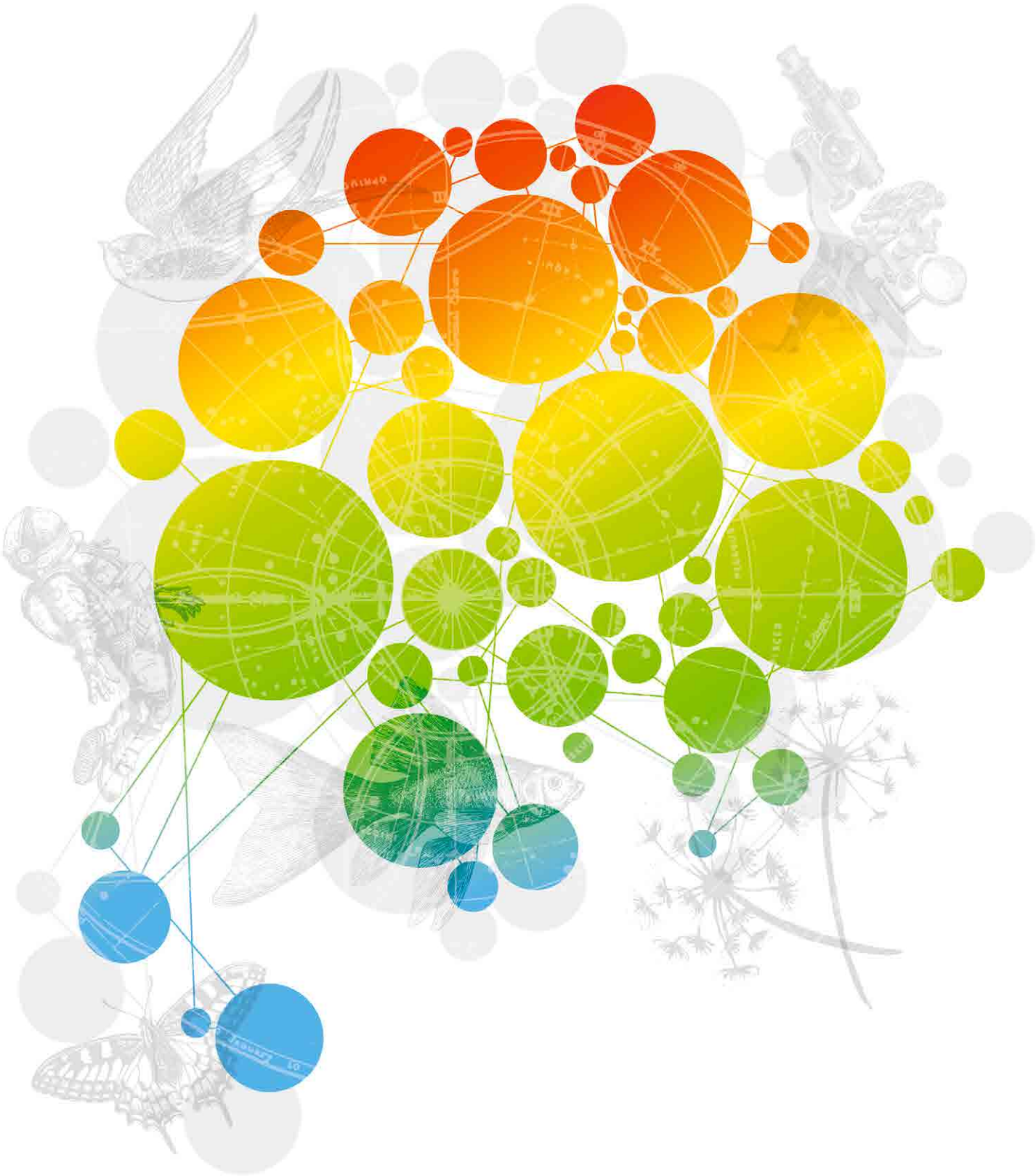
Agencija za energijo



Report on the energy sector in Slovenia for 2015

Foreword by the energy agency director

We are pleased to present you the fifteenth annual report on the state of the energy sector in Slovenia for 2015 prepared by the Energy Agency. The content and structure of the report follows the guidelines of the European Commission and the Energy Act. The aim of this report is an overall assessment of the national electricity and gas markets development. The report is an important starting point for the adoption of many developmental and business decisions.

This year's report provides the most comprehensive overview so far, as the Energy Agency has been, on the basis of the new legislation, given some new tasks and in certain existing working areas expanded jurisdictions that allowed a much better oversight of the market's functioning. We included an analysis of the effects of market coupling on the cross-border transmission capacity, liquidity of the market and wholesale prices in order to evaluate effects of the implementation of the internal energy market on the national level.

The report also presents the issues related to the operation of the wholesale and retail markets. The analysis of the area of renewable energy sources, cogeneration and energy efficiency has been recast. We also present the area of heat supply, where in 2015 the conditions were set up for the price regulation. The approach is completely new, making a unified platform for price formation by the heat producers and suppliers.

In 2015 most of the measures provided for by the new legislation came into force, as well as many key executive acts were adopted, which enable a comprehensive implementation of the Energy Act, and, thus, the EU Third Package of energy legislation.

In the light of the progress made this year was the turning point for both markets. In the electricity market the existing Slovenian and Italian bilateral market coupling for day-ahead was replaced by inclusion in interregional market coupling from Scandinavia to the Iberian Peninsula. In the gas market, two most important novelties were the introduction of virtual point and changed method of balancing. These two novelties and some other changes have already affected the gas market, and will significantly contribute to the successful and transparent operation of the Slovenian energy market.

The Energy Agency in 2015 set the regulatory framework for the network charge for the electricity networks for the period 2016–2018, which provides a predictable business environment for electricity system operators and also takes into account the European strategic directions. Under these guidelines the regulatory framework incentivise the development of smart grids and electro mobility. The implementation of the new Energy Act has not yet been completed and it will continue in 2016, likewise, all the envisaged network codes have not yet been implemented on the European level. However, we have already noticed a gradual adjustment of certain entities to the circumstances announced by the drafts of the mentioned documents. In accordance with the European regulatory framework to ensure the transparency and integrity of the wholesale energy markets in 2015 continued the intensive cooperation between the energy regulators, ACER and other supervisory authorities at the national level. With the market participants' registration, public disclosure of data in the central European registry and the beginning of the reporting on transactions in accordance with REMIT the expected improvement of transparency of the wholesale electricity and gas markets took place.

The Energy Agency effectively provided the conditions for the registration of the market participants at the national level and other obligations under REMIT.

In 2015, we also noticed a slowdown or almost a halt in the negative trend of average electricity price movement on power exchanges. Even if the wholesale prices remain at record low levels, the electricity retail prices were not significantly affected since they stayed almost the same for household consumers and slightly decreased for business consumers.

In the natural gas, in 2015 after a long time, the consumption increased again, and the retail prices due to changes at the national level fell in comparison with the previous year, and the potential savings by switching a supplier increased.

The number of suppliers' switching in 2015 increased again in both markets, and to this a campaign carried by the Slovenian Consumers' Association contributed a lot. A higher number of switchings and strengthen competition in the retail market are indicators of its good functioning. An important challenge for the Slovenian energy sector it is also the integration of dispersed generation from renewable sources, which is much more volatile than from conventional sources, and therefore requires the greater flexibility of the power system and the possibility of intraday market trading. The increase in this type of production is encouraged by the state with the support scheme, but in 2015 the call for new entrants to the support scheme was not carried out. The share of electricity production from renewable sources and cogeneration with high efficiency at annual level remains below one TWh, and for the support scheme, 147 million euros had to be provided through contributions paid by final consumers.

In 2015, we reinforced our activities in monitoring regularity of the operation of energy services providers – the number of procedures had increased more than threefold. In terms of protection of consumers' rights, the number of disputes and complaints did not increase; with a single point of contact on our website household and small business consumers we guaranteed the access to all necessary information on energy market functioning and their consumers' rights.

The report on the state of the energy sector in Slovenia in 2015 was prepared on the basis of the data sent to the Energy Agency by more than 300 entities and data aggregator. We acknowledge their contribution and participation in the process of gathering information.

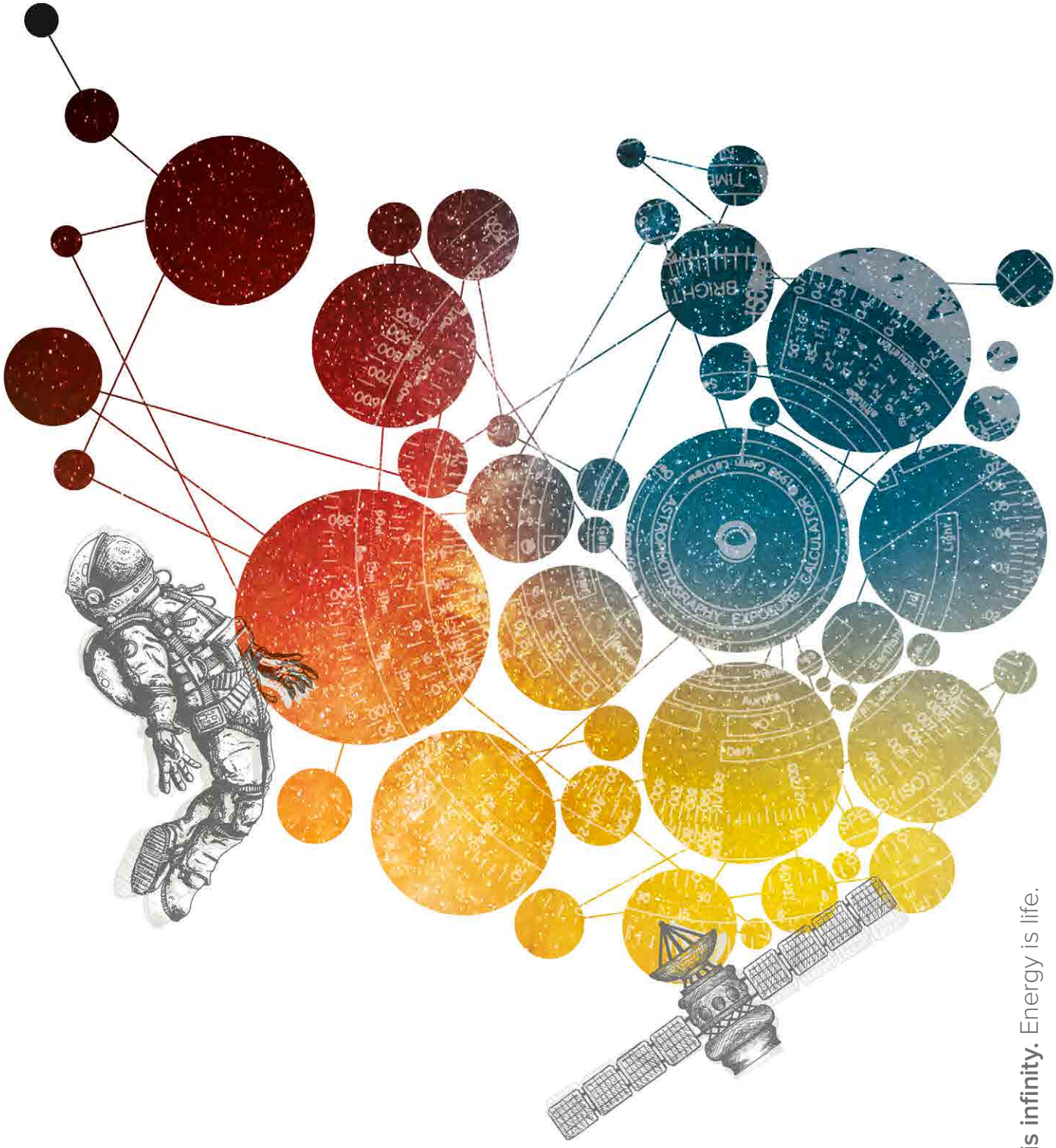
We can conclude that the Slovenian energy market in 2015 functioned well. Detailed overviews of individual areas are provided in next chapters. I am convinced that the report with its improved and new content will contribute to the even greater transparency of the situation and development in the market, and also may encourage market participants to further development, and innovative ideas for business.

Due to the environmental requirements and development of new technologies, the situation in the energy sector is changing faster than in the past; that is why the sector is facing many new challenges. Such situation requires appropriate adjustment of the operation of all market participants and also supervisory authorities to encourage the introduction of new technologies, which are environmentally and economically more justified solutions than the conventional ones.

We are determined to further pursue our mission and contribute actively to ensuring effective, transparent and integrated energy market, and to foster completion for providing the maximum benefits to consumers as well as new business opportunities for other market participants.

Duška Godina
Director

2. Development of the energy markets



Energy is infinity. Energy is life.

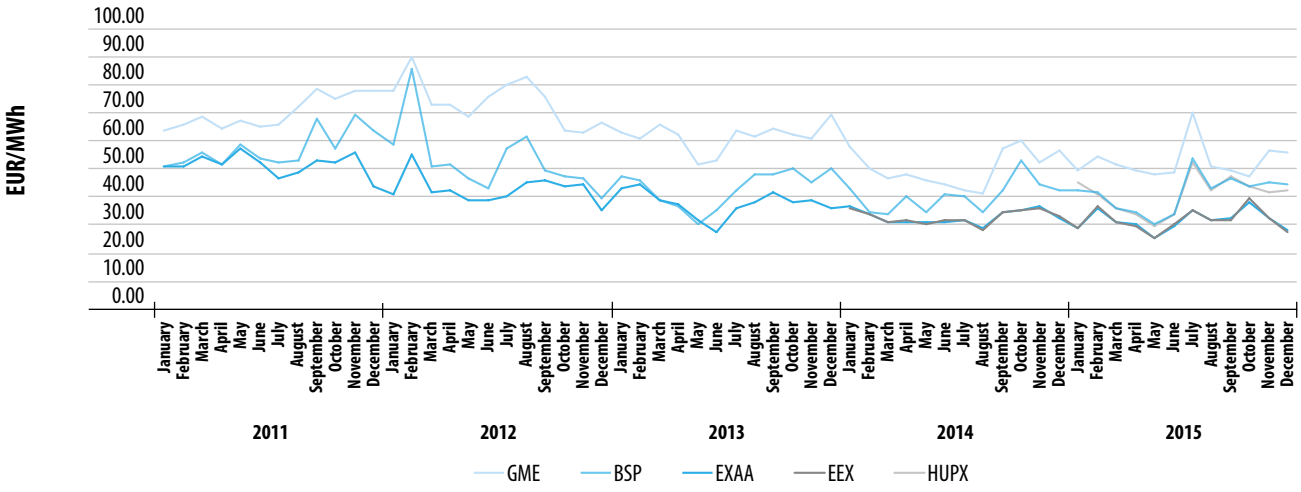
2.1 The development in the electricity market

For the last 15 years, the users of the electricity network can follow successful liberalization of the electricity market, which is becoming a part of reliable and competitive supply with energy within all European Union countries. With adopted targets that provide greater energy self-sufficiency and environmental acceptability, the Slovenian energy sector underwent major structural changes. The high degree of market openness had especially with the entry of new suppliers to the market served final consumers since retail electricity prices follow falling prices on well coupled wholesale markets. In 2015, the Slovenian wholesale electricity market came even closer to the pan-European market since traders with a successful coupling of North Italian border from 24 February 2015 got the opportunity of simultaneously trading and acquisition of rights in cross-border trading in almost entire EU area; the coupling was agreed between TSOs and power exchanges. Market coupling for a day ahead between Slovenia and Italy increased the liquidity on the power exchange and improved the quality of the electricity price index. Competition in the supply to final consumers contributed to the first merging of retail suppliers. On 1 October 2015 merged the companies Elektro Gorenjska Prodaja, a subsidiary of Elektro Gorenjska, and Elektro Celje Energija, a subsidiary of Elektro Celja. The new company, ECE, d.o.o, is the second largest supplier of electricity in terms of the number of consumers. The number of supplier switching increased again, mainly influenced by the campaign called Collective purchase of electricity carried out by the Slovenian Consumers' Association in the first half of 2015. Both cases show that the conditions for competitive supply are at such level that benefits consumers the most; consumers are one of the most important players in the energy market since its opening. An active and well informed energy consumer is the objective of Slovenia and EU since only in that way an effective power system can be created, and joint responsibility for preservation of environment can be provide.

In 2015, the regulatory period 2013–2015 ended, and during the year the new regulatory framework 2016–2018 was adopted. The Energy Agency adopted a new methodology for determining the regulatory framework and set the eligible costs of electricity system operators and with that established the conditions for determining the network charge tariffs for the new regulatory period. At the end of the year, the network charge, which maintains a stable business environment for the system operators was set; the network charge at the same time enables acceptable and predictable network tariffs for final consumers in the next three years.

For ensuring the reliability of electricity supply in Slovenia in the future, the start of trial operation of Unit 6 in TPP Šoštanj was an important event. Unit 6 with its more efficient use of coal will contribute to the reduction of CO_2 emissions; the unit has 600 MW of installed capacity, and it is the largest Slovenian energy facility, which will apart of electricity production also provide a part of ancillary services. Due to increased share of production from RES the ancillary services has an important role in the power system.

Figure 1: Electricity price movements on the neighbouring power exchanges



Sources: ELES, Energy Agency

Due to decreasing electricity prices on the power exchanges in the EU, which reached values below 45 EUR/MWh (in Germany below 30 EUR/MWh), and because of growing illiquidity of conventional electricity producers (especially in coal or natural gas power plants) in some Member States decided to intro-

duce Capacity Remuneration Mechanisms (CRM). In Slovenia, this measure has not yet been approved, whereas the European Commission started an investigation and discussion in the other Member States in order to identify possible impacts of these mechanisms on the functioning to the internal market; the countries were called to develop another mechanism that will ensure adequate capacity at increasing volatile electricity production.

For enhancing and supporting the production from RES in 2015 another call for new entrants to support scheme was not carried out since additional sources haven't been granted, and the European Commission has not yet approved the support scheme. The share of production from RES and CHP therefore stays at the annual level below 1 TWh, while for the support scheme € 150 million had to be provided through contributions paid by final consumers. At the end of the year, in addition to existing support scheme the Government of the Republic of Slovenia harmonised the new rules on self-sufficiency, which will on the basis of net-metering allow household and small business consumers who generate electricity some or all of their own electricity to use that electricity any time instead of when it is generated. Excess generation can be transferred to the network (the energy is used on a local level, in nearby buildings), and electricity can be used from the network, when a facility does not produce electricity, or the production is not sufficient. The measure that applies to the facilities for the production of electricity from solar, wind or hydro energy with nominal power up to 11 kVA, does not impose additional financial burden to the support scheme, however it allows an increase in share of RES in the final use of energy.

2.2 The development in the natural gas market

The adoption of new system operation instructions for natural gas transmission system, implementation on network codes on balancing, introduction of virtual trading point and trading platform, issuing approvals to the new regulatory frameworks for all gas system operators, decreasing prices of gas, and increasing consumption of this energy source are the main highlights of the development in natural gas market in 2015.

Changes caused by revised executive regulations and the European network codes had an impact to the participants of the natural gas markets. System operating instructions for the natural gas transmission system introduced a few new features; key ones are virtual trading point and modified balancing method. The virtual point enables allows the transfer of ownership of natural gas on the transmission system, and in the area of balancing the responsibility for balancing services is primarily delegated to the balancing group leaders and only later to the gas TSO. The balancing market has been established, the organizer of it is the gas TSO.

The direct effects of the implementation of the third energy package and other rules for the operation of the Slovenian natural gas market are reflected in the accelerated harmonization of cross-border trading and operation of gas TSOs and by that in better operation of the natural gas transmission system.

The allocation of capacity at borders' entry and exit points were carried out by auctions, and since November auctions of bundled capacities were performed.

The gas TSO and DSOs in 2015 submitted to the Energy Agency a new regulatory framework, which determines eligible costs and other revenues as well as network charge tariffs for the period 2016–2018.

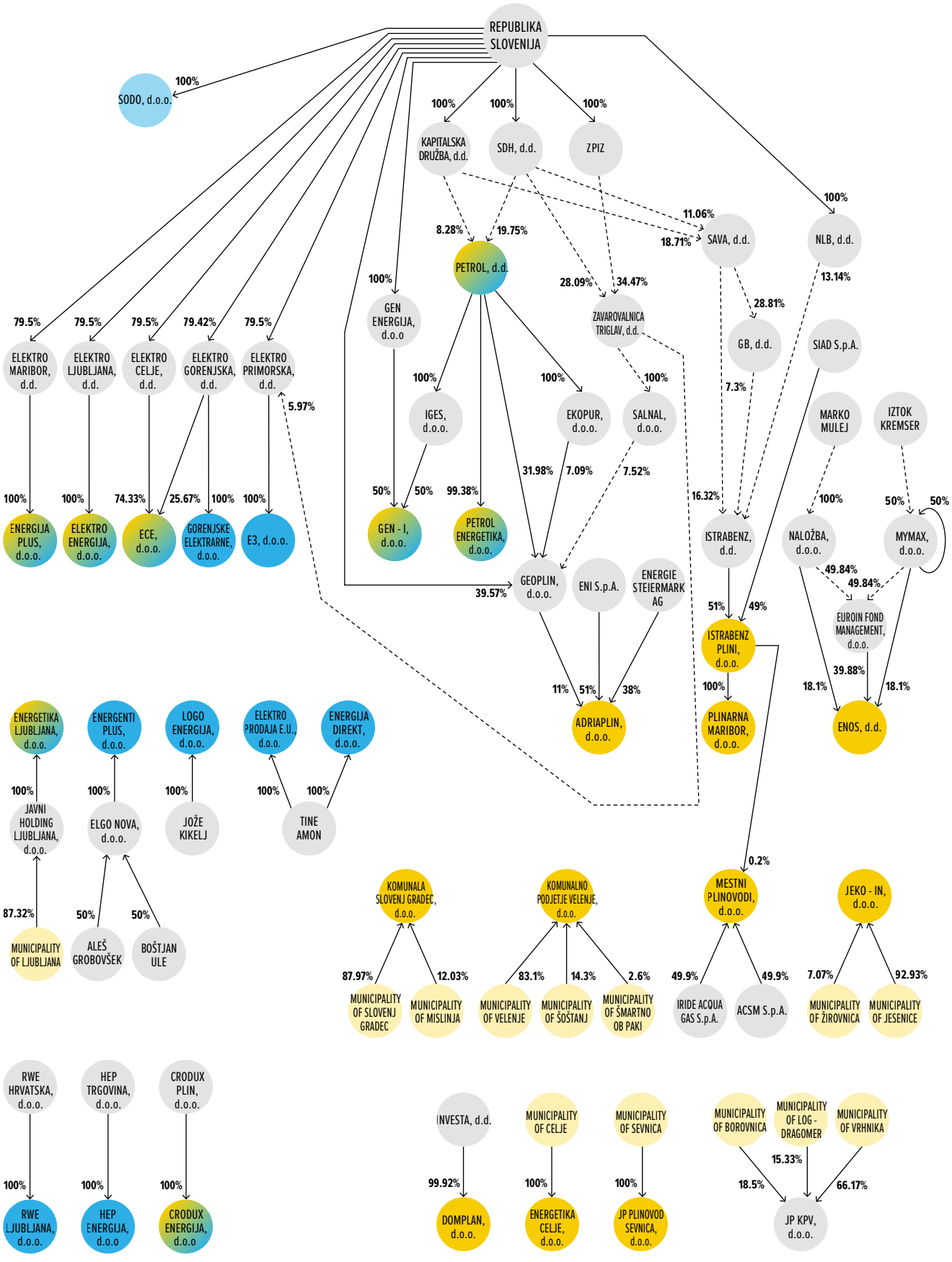
Consumption of natural gas in 2015 slightly increased, however there were few investments in new network systems as well as new connections to the networks.

Lower prices of natural gas and competitive supply offers had a positive impact on switching procedures since 8290 switches were recorded.

2.3 Ownership relations between companies providing services to networks users

Fully opened energy market are facing changes both in numbers of suppliers and their services as well as in their integration or ownership relations. In recent years, the number of suppliers, which provide the supply with electricity and gas, has increased. The competitiveness and transparency of the energy market is also influenced by the ownership structure of these companies. Figure 2 shows the ownership structure of electricity and natural gas suppliers in Slovenia in April 2016. Included are the suppliers to final consumers. More about market transparency is described in the chapter on electricity (3.3.1.2 in 3.3.2.2) and gas (4.3.1.2 in 4.3.2.2) wholesale and retail market transparency.

Figure 2: Ownership structure of electricity and gas suppliers



Source: gvin.com

3. Electricity

Energy is waving. Energy is life.

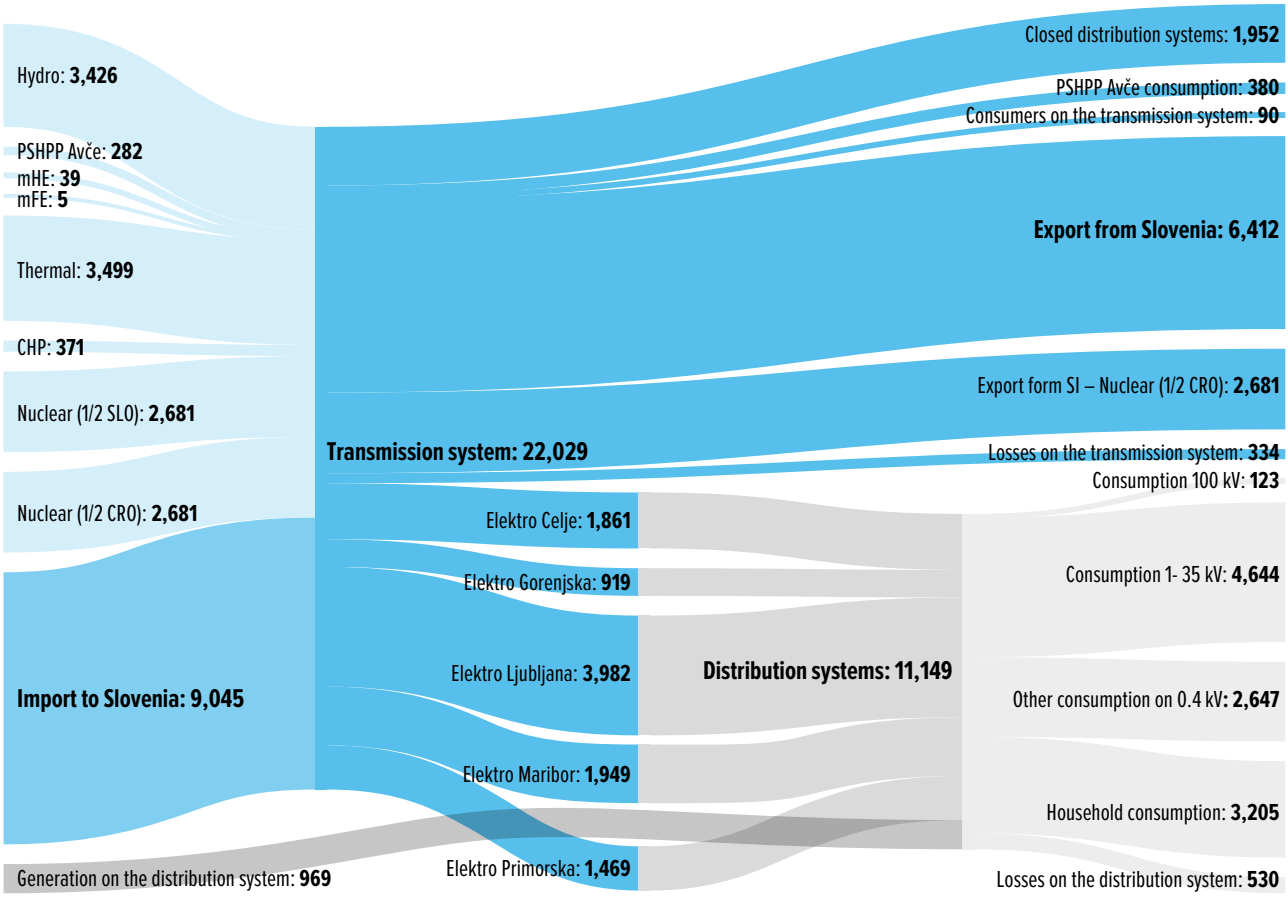
3.1 The balance of electricity supply and demand

In 2015, to the transmission and distribution system 13,954 GWh of electricity was delivered, which meant 2328 GWh less than in 2014. The delivery from generating plants using RES way 4595 GWh, which was 2217 GWh less than the previous year, generating plants using fossil fuels contributed 3997 GWh, or 587 GWh more than the year before. The nuclear power plant Krško delivered 5362 GWh to the transmission system, or 698 GWh less. These quantities are taken from the balance sheets of electricity producers on the basis of physical flows.

In 2015, to the distribution system 969 GWh of electricity was delivered. At the Px3 connection, in the internal consumers networks additional 282 GWh of electricity was consumed, or 23% of all electricity produced in the distribution system, which is 4 percent point more than in the previous year.

To the Slovenian power system for 26.6 MW of new generating capacity was connected. The largest share contributed the renovation of the generator in Ljubljana thermal power plant (Energetika Ljubljana), with 22 MW. The second largest share to the increase in production capacity contributed new solar power plants, whose total capacity amounted to 2.3 MW. In the same period, for around 117 MW of production capacity was disconnected. Almost the entire decrease is due to the suspension of the steam plant 4 in thermal power plant in Trbovlje.

Figure 3: Balance of electricity supply and demand on the transmission and distribution systems in 2015 in GWh



Sources: Electricity system operators, Energy Agency

Table 1: Electricity delivered to the transmission and distribution systems in 2015

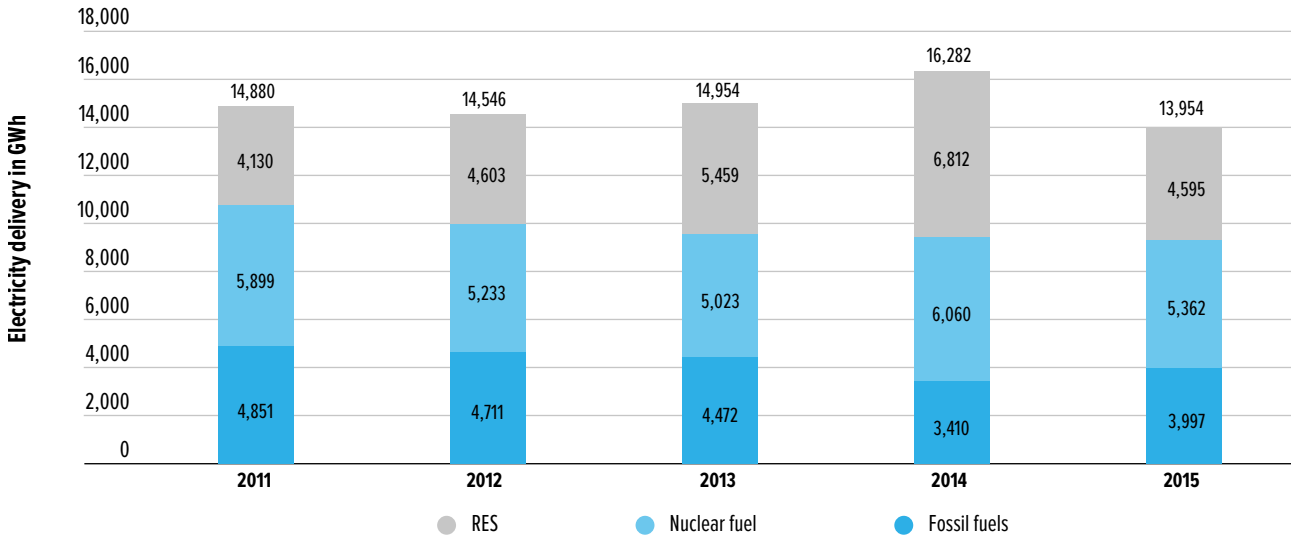
Electricity delivered to the transmission system	GWh
Dravske elektrarne Maribor	2,523
Savske elektrarne Ljubljana	269
Hidroelektrarne na spodnji Savi	313
Soške elektrarne Nova Gorica	604
out of which PSHPP Avče generation	282
Small HPP	39
Total Hydro	**3,747**
TPP Šoštanj	3,496
TPP Brestanica	6
TPP Trbovlje	-3
Javno podjetje Energetika Ljubljana	310
Other CHP	61
Total TPP and CHP	**4,242**
Total Nuclear	**5,362**
Total small solar PP	**5**
Electricity delivered to the transmission system	**12,985**

Electricity delivered to the distribution system	GWh
HPP up to 1 MW	174
HPP over 1 MW	135
Facilities using wood biomass	52
Wind-powered plants	6
Solar power plants	243
Facilities using biogas	104
Waste-to-energy plants	12
Facilities using other RES	116
Total RES	**842**
Total conventional sources	**127**
Electricity delivered to the distribution system	**969**

Total electricity delivery	**13,954**

Sources: Electricity system operators, Energy Agency

Figure 4: Electricity delivered to the transmission and distribution systems in the period 2011–2015



Sources: Electricity system operators, Energy Agency

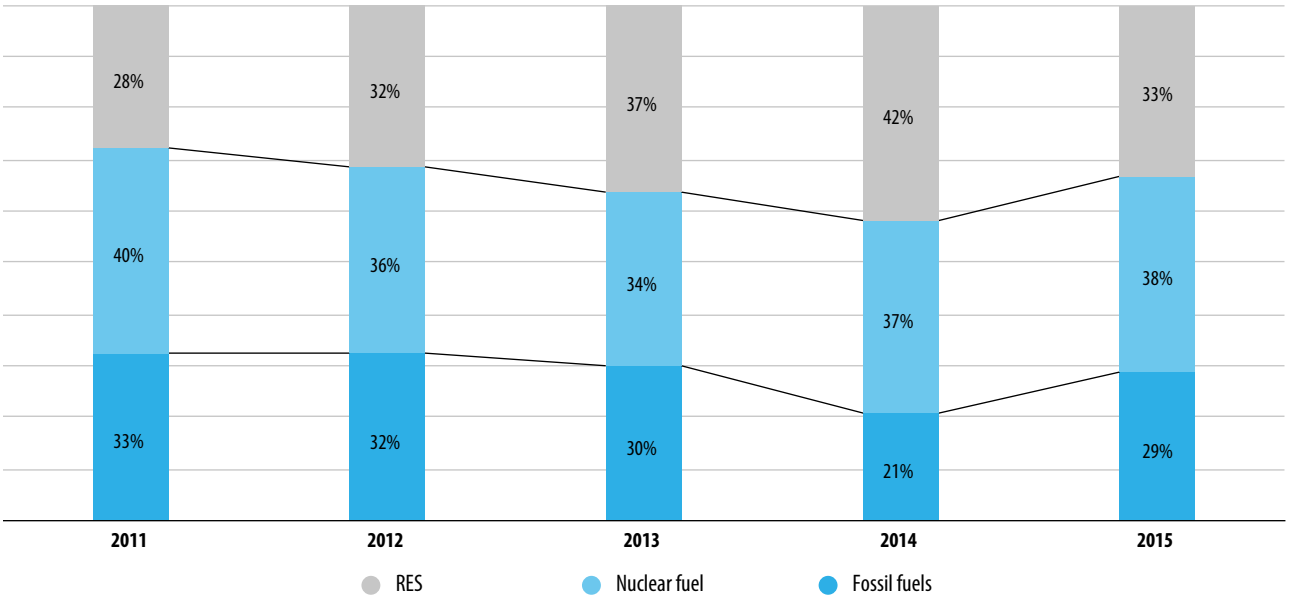
The share of electricity generated in hydro power plants and plants using other RES annually varies, depending on hydrological and other conditions, and the investments in new generating facilities using RES. In 2015, this share was around 33% of all generated electricity in Slovenia, which was 9 percentage point less than the previous year, when hydrological conditions were extremely favourable. Plants using fossil fuels contributed to the total production around 29 %, which was by 8 percentage point higher share, and the nuclear power plant 38% of all generated electricity.

Table 2: Primary energy sources for electricity generation in 2015

Primary energy sources for electricity generation	GWh	Share
Fossil fuels	3,997	29%
Nuclear fuel	5,362	38%
RES	4,595	33%
hydro	4,056	
wind	6	
solar	248	
biomass	285	
Total delivery of electricity	**13,954**	

Sources: Electricity system operators, Energy Agency

Figure 5: Shares of primary electricity sources from 2011–2015



Sources: Electricity system operators, Energy Agency

At the end of the year, a total of 940,789 electricity consumers were connected to the electricity network. In comparison to the previous year, the number of consumers increased by 3906 consumers, or 0.4%, while the electricity consumption by the type remained the unchanged. The number of household consumers with two-tariff metering consumption increased by 1.4%, and by 1.6% decreased the number of household consumers with single tariff metering.

The number of business consumers on the transmission system decreased by five. These five consumers were granting the status of the closed distribution systems and started to operate as the operators of closed distribution systems and ceased to exist as directed consumers on the transmission system. However, in 2015 not all conditions for the distribution of electricity supply were established, and because of that, the data related to the consumed or supplied electricity from the transmission system for closed distribution systems are in the report displayed as the electricity delivery from the transmission system.

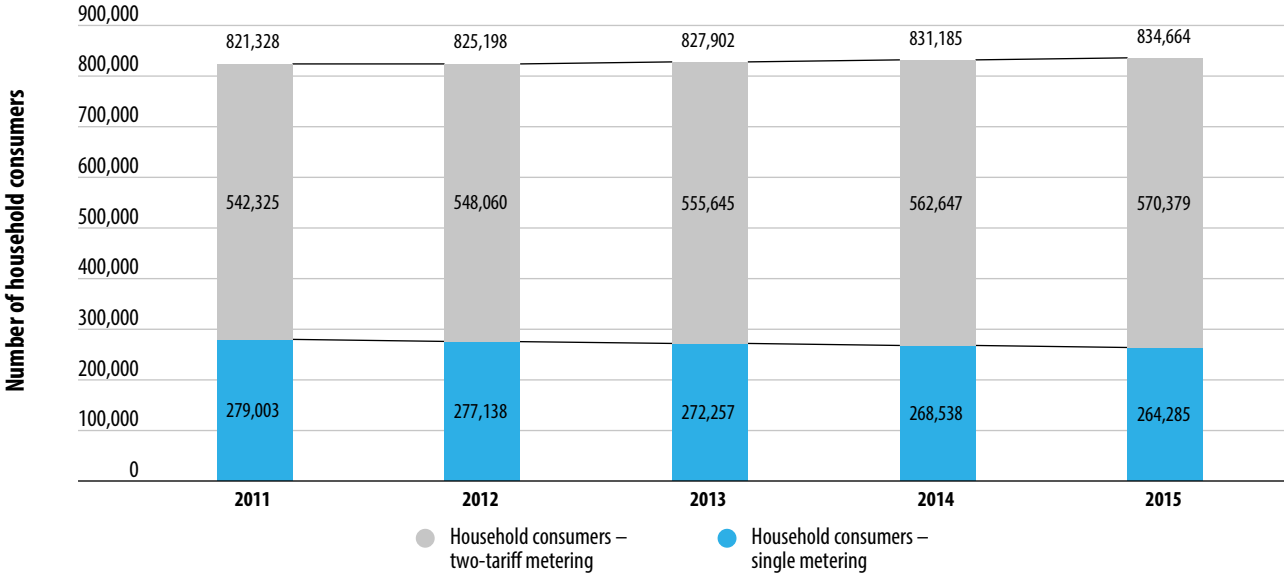
Table 3: Number of consumers by the type of consumption in 2014 and 2015

Number of consumers by the type of consumption	2014	2015	Index
Business consumers on the transmission network	8	3	37.5
Consumption of PSHPP Avče	1	1	100.0
All consumers on the transmission network	**9**	**4**	**44.4**
Business consumers on the distribution network	105,689	106,121	100.4
Household consumers	831,185	834,664	100.4
– single tariff metering	268,538	264,285	98.4
– two-tariff metering	562,647	570,379	101.4
All consumers on the distribution network	**936,874**	**940,785**	**100.4**
All consumers	**936,883**	**940,789**	**100.4**

Sources: Electricity system operators, Energy Agency

Figure 6 shows the numbers of household consumers in the period 2011–2015. The total number of household consumers has been growing throughout the period on average by 0.4%. The number of consumers with two-tariff metering is increasing permanently, on average by 1.3%, while the number of consumers with single tariff metering is permanently decreasing. Therefore, the data show the increasing share of consumers with two-tariff metering, who can adjust their consumption during low-tariff hours and with that reduce their costs for the electricity supply. In that way, especially by using modern measuring equipment, a consumer can adapt his consumption to the low-tariff hours between 10 p.m. and 6 a.m. during the working week as well as at weekends and national holidays (work-free days), which is for consumers an additional incentive for savings.

Figure 6: Number of household consumers in the period 2011–2015



Sources: Electricity system operators, Energy Agency

3.1.1 Electricity generation

In 2015, in Slovenia the following nine companies were operating large facilities with a capacity of over 10 MW:

- Dravske elektrarne Maribor (DEM);
- Soške elektrarne Nova Gorica (SENG);
- Savske elektrarne Ljubljana (SEL);
- Hidroelektrarne na spodnji Savi (HESS);
- Termoelektrarna Šoštanj (TEŠ);
- Termoelektrarna Trbovlje (TET);
- Termoelektrarna Brestanica (TEB);
- Javno podjetje Energetika Ljubljana (JPEL);
- Nuklearna elektrarna Krško (NEK).

The companies DEM, SEL, HESS and SENG generate electricity in hydroelectric power plants (HPP), NEK in a nuclear power plant (NPP), TEŠ and TET in thermoelectric power plants (TPP) running on coal, TEB produces electricity from liquid and gaseous fuels, and the JPEL Ljubljana cogenerates heat and electricity in a cogeneration process using coal. It should be noted that at the end of 2014 the general assembly of the company TPP Trbovlje decided to initiate the procedure of liquidation of the company. The plant therefore did not in 2015 produce electricity.

Within the company Holding Slovenske elektrarne (the HSE) in 2104 the companies DEM, SENG, HESS, TEŠ and TET were operating. The HSE represented the first energy pillar in the Slovenian wholesale market. The second energy pillar of the wholesale market was formed by the group of GEN energija, in which companies SEL, TEB and NEK were included.

The data in Table 4 were provided by the producers, they also include data on installed capacity and electricity generation in 2015.

Table 4: Installed capacity in the production facilities and electricity generation in 2015

Producer	Installed capacity [MW] (50 % NPP)	Share – all producers in SI (%)	Generation (50 % NPP)	Share – generation of all producers in SI (%)
HSE	**2,078**	**58.7%**	**7,076**	**60.3%**
HPP	1,039		3,519	
TPP	1.039		3,557	
GEN energija	**764**	**21.6%**	**2,965**	**25.3%**
HPP	119		269	
TPP	297		11	
NPP*	348		2,685	
Javno podjetje Energetika Ljubljana (JEPL)	**118**	**3.3 %**	**347**	**3.0%**
Other small producers on the transmission network	**37.2**	**1.1%**	**113**	**1.0%**
Small HPP	18.0		46	
Solar power plants	2.8		2	
CHP	16.4		65	
Other small producers on the distribution network	**544.69**	**15.4%**	**1,241**	**10.6%**
Small HPP	102.68		336	
Solar power plants	265.41		266	
Wind-powered plants	6.09		3	
Facilities using biomass	12.45		59	
Geothermal power plants	0.00		0	
Facilities using landfill gas	7.10		17	
Facilities using gas from purification plants	1.09		4	
Facilities using biogas	28.51		105	
CHP facilities using wood biomass	14.18		72	
CHP using fossil fuels	106.97		379	
Other	0.22		0	
Total in SI	**3,542**	**100.0%**	**11,741**	**100.0%**
- on the transmission network	**2,998**	**–**	**10,500**	**–**

* the 50-% share of the installed capacity and generation of the NPP Krško

Sources: Companies' data

In addition to the production in large power plants connected to the transmission network, the Slovenian electricity system also includes dispersed production facilities connected to the distribution network. In Slovenia, with respect to dispersed sources are important the production in small hydroelectric power plants, solar power plants and the production in industrial facilities for the cogeneration of heat and electricity (CHP). Due to financial difficulties in implementing the support scheme the number of new solar power plants significantly decreased in comparison with the previous year.

According to the bilateral agreement between Slovenia and Croatia, half of the production from the Krško NPP belongs to Croatia, which reduces the share of the Krško NPP in the Slovenian production of electricity. Thus, in 2015 the Slovenian power plants produced a total of 14,426 GWh of electricity, but the actual Slovenian production was lower, amounting to 11.741 GWh. In 2015, the largest share of electricity production in Slovenia that actually belongs to Slovenia (including a half of the Krško NPP's production) was contributed by the thermoelectric power plants, in which was generated 33.3% of all electricity for the Slovenian market. This share is followed by the share of hydroelectric power plants (32.3%), and by 22.9% of the nuclear power plant. The data on electricity generation by source is shown in Table 4

The Slovenian power plants in 2015 generated 11,741 GWh of electricity. Out of these, 981 GWh were included in the support scheme, which is aimed to promote the production of electricity from RES and CHP. In 2015, the production of electricity included in the support scheme in comparison to al production increased by 8.4% despite lower production in hydro power plants, which are included in the support scheme. The share increase due to increased generation of solar power plants, facilities using biomass, and CHP using fossil fuels. The share of electricity included in the support scheme between 2012 and 2015 is together with electricity production shown in Table 5.

In 2015, the installed capacity of the power plants included in the support scheme increased. The shares of installed capacity included in the support scheme from 2012 to 2015 are together with the installed capacity presented in Table 5. The installed capacity, which is included in the support scheme, increased by 5% in comparison to the previous year. The share of electricity production from the plants included in the support scheme increased the same the share of the installed capacity of these plants in 2015. Again, an increase in the share was contributed by the fact that in 2015 the total installed capacity in Slovenia decreased.

Table 5: Share of the installed capacity and generated electricity included in the support scheme

Year	Installed capacity included in the support scheme (MW)	Total installed capacity in SI (MW)	The share of installed capacity included in the support scheme	Generated electricity included in the support scheme (GWh)	Total generated electricity in SI (GWh)	The share of generated electricity included in the support scheme
2012	307,990	3,260,367	9.4%	654.0	12,250.1	5.3%
2013	393,230	3,273,570	12.0%	802.9	12,913.2	6.2%
2014	411,967	3,834,470	10.7%	905.9	13,597.5	6.7%
2015	432,752	3,542,229	12.2%	980.8	11,740.9	8.4%

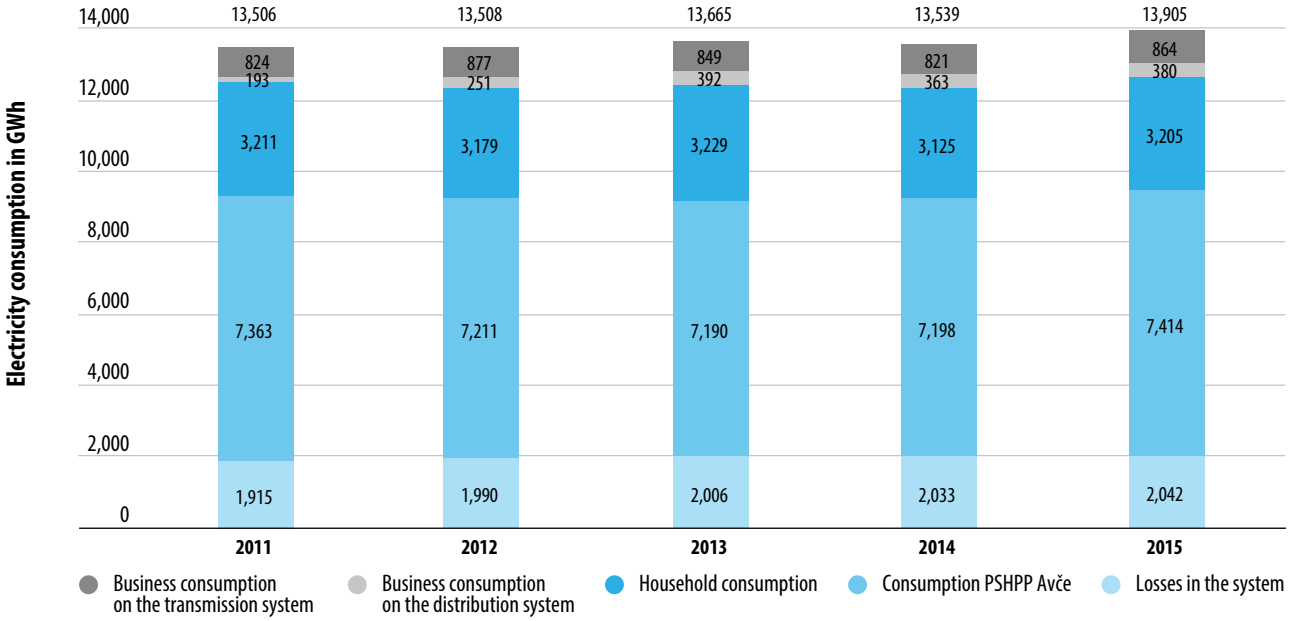
Sources: Borzen, Energy Agency

3.1.2 Electricity consumption

Total electricity consumption in Slovenia amounted to 13,905 GWh or 13,041 GWh without taking into account the losses on the transmission and distribution systems. In comparison to 2014, the total consumption was higher by 366 GWh or 2.7%. Consumers, connected directly to the transmission system, and consumers inside closed distribution systems together consumed 2042 GWh of electricity, or 0.4% more than the year before. Consumption of customers, connected to the distribution system, was higher by 2.9%, and it amounted to 10,619 GWh. Pumped storage hydro power plant AVČE used 380 GWh for pumping water for energy storage, which was slightly more than in 2014. Losses in the transmission and distribution systems amounted to 864 GWh of electricity, including losses due to transit, import and export of electricity.

Peak load of the transmission system amounted to 2052 MW, which was 64 MW more than in 2014.

Figure 7: Electricity consumption in the period 2011–2015



Sources: Electricity system operators, Energy Agency

Table 6: Electricity consumption in 2014 and 2015

Electricity consumption [GWh]	2014	2015	Index
Business consumption on the transmission system	2,033	2,042	100.4
– Closed distribution systems	1,953	1,952	99.9
– Consumers, connected directly to the transmission system	80	90	112.5
Business consumption on the distribution system	7,198	7,414	103.0
Total business consumption	**9,230**	**9,456**	**102.4**
Household consumption	**3,125**	**3,205**	**102.5**
– Single tariff consumption	892	898	100.7
– Two-tariff consumption	2,233	2,307	103.3
Consumption of PSHPP Avče	363	380	104.7
Total consumption of end consumers	**12,719**	**13,041**	**102.5**
Losses in the transmission and distribution systems	821	864	105.3
Total electricity consumption	**13,539**	**13,905**	**102.7**
Export	9,997	9,094	91.0
Total	**23,536**	**22,999**	**97.7**

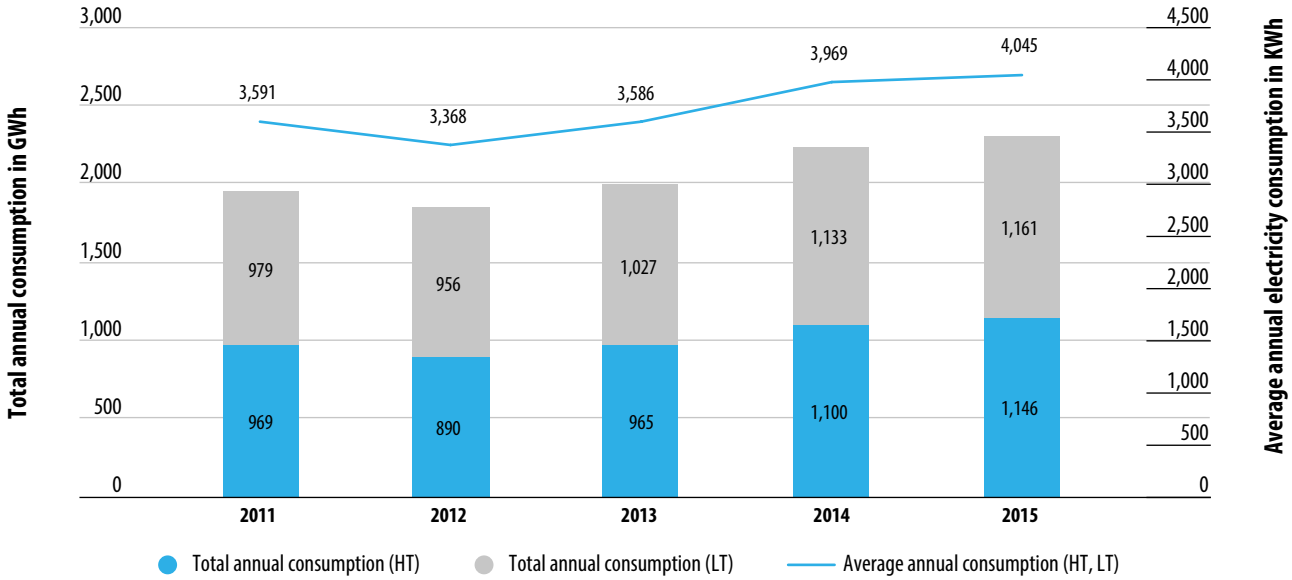
Sources: Electricity system operators, Energy Agency

The consumption, including losses in the network, and taking into account the 50-percent share of installed capacity of the Krško Nuclear Power Plant, which belongs to Slovenia, was not completely covered by the production sources in Slovenia. The Slovenian consumption was covered by the domestic sources in total of 81%. Through the transmission and the distribution networks 9094 GWh of electricity was exported, and imported 9045 GWh of electricity.

Figure 8 and 9 show the total and average electricity consumption of household consumers with single tariff and two-tariff consumption. Figure 8 shows that after a decrease in electricity con-

sumption in 2011 and 2012 in the last three years the consumption of households using two-tariff metering has been increasing. In the same period, the annual electricity consumption of these customers has been increasing, and in 2015 exceeded annual consumption of 4000 kWh.

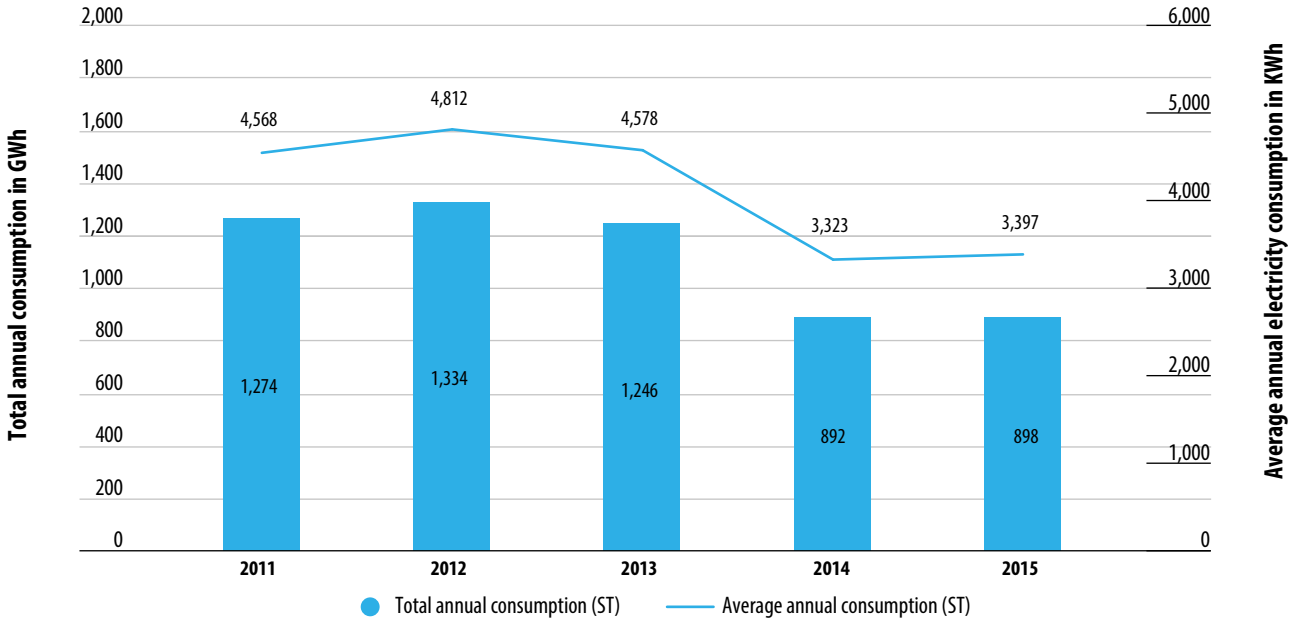
Figure 8: Total and average annual consumption of household consumers with two-tariff metering in the period 2011–2015



Sources: Electricity system operators, Energy Agency

Figure 9 shows the electricity consumption of household consumers with single tariff metering for the past five years. In 2015, the consumption of these consumers did not change significantly compared to the previous year while in total and average annual consumption a slight increase can be noticed.

Figure 9: Total and average annual electricity consumption of household consumers with single tariff metering for the period 2011–2015



Sources: Electricity system operators, Energy Agency

3.2 The regulation and regulated activities

3.2.1 The unbundling of services

Electricity companies engaged in transmission and distribution activities have to provide for the separate management of accounts for transmission and distribution activity as if these activities would be carried out by separate companies.

The service of general economic interest of the electricity system operator (the company ELES) is carried out in the legal entity, which in addition to the electricity transmission provides activities not related to the electricity power sector. In its annual report, ELES provides for the separate management of accounts for them, as well as the criteria for the allocation of assets and liabilities, costs, expenses, and incomes, which are used for the preparation of accounting records and separate accounts.

The activity of services of general economic interest – electricity distribution system operator (the company SODO d.o.o.) is carried out in separate legal entities, and electricity distribution is the only activity that it is performed. For the purpose of the regulation, SODO does not prepare separate accounts.

Following the consent of the Government of the Republic of Slovenia, SODO had transferred the activity of services of general economic interest of electricity DSO to the distribution companies. Electricity companies are in addition to electricity distribution engaged in other non-energy related activities. For this reason, gas DSOs in their annual reports provide separate accounts and prepared separate accounting records for electricity distribution and non-energy related activities. Electricity companies in their annual reports provided for the separate management of accounts for them, as well as the criteria for the allocation of assets and liabilities, costs, expenses, and incomes, which are used for the preparation of accounting records and separate accounts.

The Energy Agency in 2014 carried out the certification of the electricity TSO according to the Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC. The final decision was issued in the beginning of 2015. In accordance with the issued decision the Energy Agency proposed to the Government to appoint the electricity system operator. On 24 June 2015, the Government adopted a decision appointing the electricity TSO, which was published in the Official Gazette of the Republic of Slovenia No 46/15.

3.2.2 Technical functioning

3.2.2.1 The provision of ancillary services

Ancillary services are the services provided by a system operator to safeguard the normal operation of the network. The ancillary services relating to the entire Slovenian electricity system are provided by the electricity TSO – ELES. This section addresses only those ancillary services that were in 2015 financed from the network charge for the ancillary services. These services are the following:

- the control of frequency and power (secondary and tertiary control);
- the voltage control;
- the provision of a black start (system restart).

For 2015, ELES planned the next scope of the ancillary services:

- the reserve for secondary control of frequency and power: ±60 MW;
- the reserve for tertiary control of frequency and power: +348 MW, –180 MW.

For 2015, ELES planned the reserve for secondary control in the amount of ±60 MW, the same as in 2014, but 20 MW less than in previous years. These values are based on facts that there are no suitable production units in the system to provide larger amount of reserve; at the same time the requirements for this reserve slightly decrease after the establishment of the agreement on cross-system exchange between the Slovenian and Austrian TSOs, signed in 2013. This agreement enables an exchange of energy of current imbalances in cases when the control areas deviate in opposite directions and there is no available transmission capacity between them.

In the area of required reserve for tertiary control in 2015, there were no changes in comparison to previous years. Despite the operation of Unit 6 of the TPP Šoštanj the required positive reserve remained at the level that represents half of the capacity of the nuclear power plant Krško, and the required negative reserve at the level of the potential system outage of PSHPP Avče in the pumping regime. The reason that the required positive reserve for tertiary control in 2015 did not need to be increased to 546 MW, which is the power of Unit 6 of the TPP Šoštanj, was due to the fact that ELES concluded an appropriate agreement with TSOs of Croatia and Bosnia and Herzegovina, according to which all three TSOs that operate within the regulation block of these three countries participate with its own share in joint provision of the required reserve for the tertiary control.

Since ELES had already in 2014 signed agreements on the provision of most of the ancillary services for the period 2014–2018, for 2015 only agreements for the missing extent of the reserve for tertiary control, which was no covered by the contracts for the period 2014–2018. For that period the contracts covered 144 MW of the reserve, thereby additional 204 MW of the reserve for tertiary control had to be leased. The tenders for the provision of three products of the reserve for tertiary control were selected on auctions. Auctions were held on 10 December 2014. The products differ in terms of duration of supply and the implementation of the reserve. For product A the time of lease is valid for the period 2015–2018, and for product B only for 2015. Both of these products are conventional products, which are provided by the facilities for generating electricity. The third product DSM is a product provided by the suppliers with and demand side response. The results of the auctions for the providers of ancillary services of tertiary control are shown in Table 7.

Table 7: Products for the tertiary reserve in 2015

	Product 14–18	Product A	Product B	Product DSM
The lease period	2014–2018	2015–2018	2015	2015
Quantity (MW)	144	50	139	15
Source of the reserve	Slovenia	Slovenia	Slovenia	Slovenia
Activation time	≤5 min	≤15 min	≤15 min	≤15 min
Time to announce changes in activation	≤15 min	≤15 min	≤15 min	≤15 min
Number of activations	unlimited	unlimited	unlimited	Unlimited, but no more than 2 times per day
Time of unavailability after activation	0 min	≤30 min	≤30 min	≤10 h
Duration of one activation	≤6 h	≤6 h	≤4 h	≤2 h

Source: ELES

The outcome of public auctions for the lease of individual products for the tertiary reserve in 2015 are shown in Table 8. In addition, the results of the public auction, carried by ELES on 18 November 2013, for the reserve for tertiary control in years from 2014 to 2018 are also presented.

Table 8: Auctions results for the lease of reserve for tertiary control in 2015

Product	Leased capacity (MW)	Lease price (EUR/MW)	Energy price (EUR/MWh)
Product 14–18			
Bidder 1	10	55,000.00	200.00
Bidder 2	134	68,300.00	270.00
Product A			
Bidder 1	50	47,000.00	249.00
Product B			
Bidder 1	139	39,500.00	260.00
PRODUCT DSM			
Bidder 1	15	38,900.00	240.00

Source: ELES

For values shown in Table 8, it has to be noted that costs for the lease of reserve capacity are covered by the network charge for ancillary services, while energy costs in activating the reserve are covered by the imbalance settlement.

For 2015, ELES also foresaw the lease of reserve for providing negative tertiary control within the scope of –180 MW needed in case of outage of the largest consumption unit of the system, which is PSHPP Avče in the pumping regime. Under Article 126 of Act in force determining the methodology for charging for the network charge, the methodology for setting the network charge, and the criteria for establishing eligible costs for electricity networks the leader of the balance group, in which PSHPP Avče operates, provides this reserve free of charge.

The providers of ancillary services for secondary control of frequency and power, the voltage control and the provision of a black start for 2014–2018 were chosen by ELES on the basis of direct negotiations with potential providers of these services already at the end of 2013. Due to the nature of remaining ancillary services only providers with production resources located within Slovenia could be selected.

In the implementation of secondary control of frequency and power, ELES in 2015 activated 68.2 GWh of positive and 121.9 GWh of negative energy. Here should be added that under the agreement on cross-system exchange in 2015, ELES exported 71.GWh for the settlement of positive imbalances, while imported 28.1 GWh for the settlement of negative imbalances. In implementing tertiary control 45 activations in a total duration of 86 hours and 43 minutes were engaged, during which the bidders supplied to ELES 10,195 MWh of electricity.

3.2.2.2 The balancing and imbalance settlement

Electricity TSO is responsible for balancing deviations of electricity power system in Slovenia. When current situations of production and consumption in the system deviate from the operation schedule, the TSO must change the ratio between the production and consumption. Most often this means to increase or decrease the production of electricity. For minor deviations in the system is automatically used secondary control, and in cases of large deviations the reserve for tertiary control must be activated, or the energy must be sold or purchased in the balancing market. Balancing services incur costs to the TSO; these costs must be paid by the party responsible for costs. For these purpose, in Slovenia a balance scheme is established, which consists of balance groups, within which unlimited number of subgroups are active. Balance group and subgroups are the members of the balance scheme represented by balance group leader (balance group responsible party). The rules on the operation of the electricity market determine that balance group leaders are responsible for maintaining marketing plans and operation schedules of their groups in the framework of for forecasted values. Trading plan represents the sum of all signed closed contracts of the balance group member, and operating schedule the forecasted supply and consumption of delivery points, for which a balance group member has the signed open contracts. The accounting period in the Slovenian organised electricity market is one hour. When in a given hour the realization of the balance group member is not in compliance with the value determined by the trading plan and operating schedule, we talk about imbalances of a balance group member. If the realization of the balance group member is lower than forecasted (energy deficit), we talk about positive imbalances, and vice versa. Imbalances of individual group members of balance scheme are often mutually eliminated. The price of imbalances depends on costs incurred to the TSO. In accounting periods, when the entire system is imbalanced and the TSO has additional costs, the prices are higher than in cases when the system due to mutual balancing of individual balance groups from forecasted schedules does not deviate entirely.

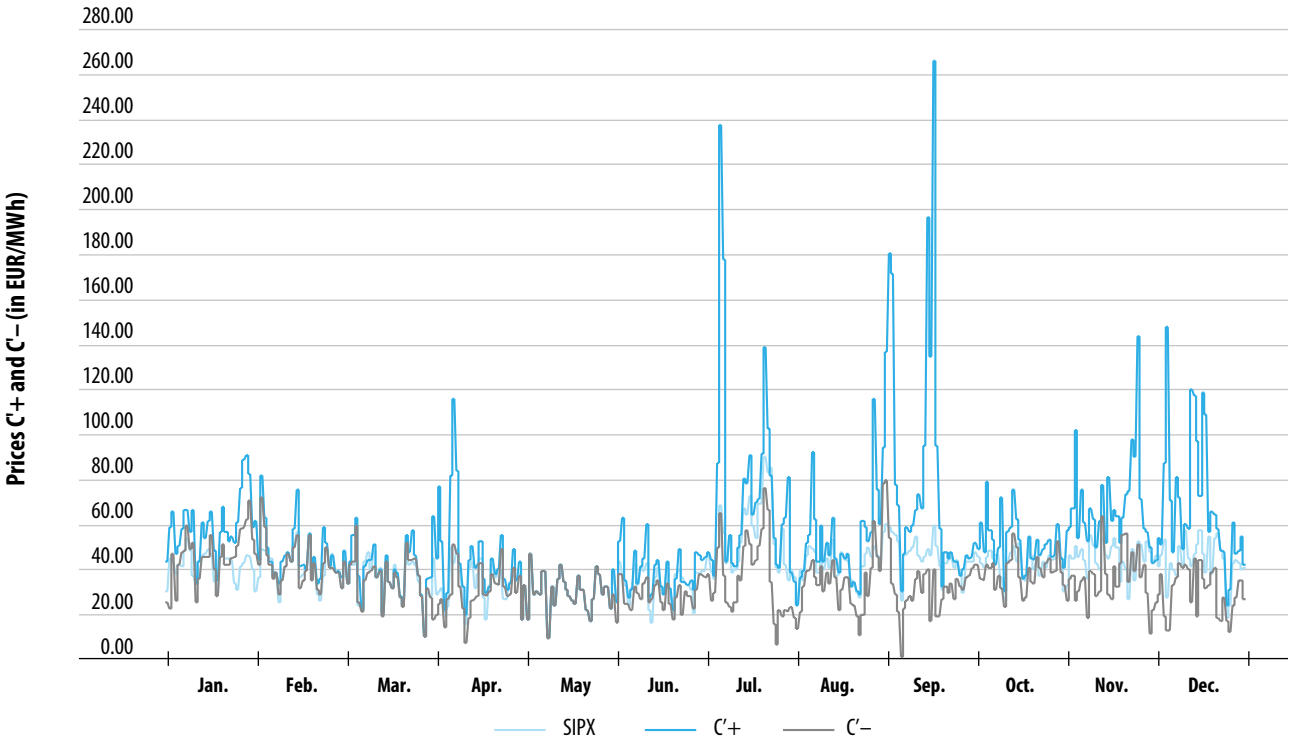
In Slovenia, Borzen is responsible for imbalance settlement. The market operator determines the total amount of imbalances for each balance group and for each accounting interval. Later it prepares financial value of these imbalances, taking into account the actual costs for imbalances incurred by ELES, and hourly index of electricity on the Slovenian power exchange. In that way, basic prices of imbalances, C'+ and C'– are determined. C'+ refers to positive deviations (realisation of the balance group is lower than planned value), and C'– refers to negative imbalances. In imbalance settlement of individual balance group, the market operator also verify whether imbalances were outside the tolerance band. If balance group in accounting period deviate outside tolerance band, an appropriate amount of penalty is calculated. The market operator carries out a correction of basic prices of imbalances in way that revenues and expenses of imbalance settlements of balance groups, without penalization, cover all costs of ELES for balancing services. The calculated price correction is done for surpluses and deficits. The correction is carried out in so many accounting intervals as necessary that costs of the TSO for balancing services are covered. In that way, basic prices of imbalances,

C'+ and C'– are determined. Price correction is calculated without taking into account the penalties for imbalances and forecasted imbalances (imbalances of balance groups without delivery points). The calculation of penalties is done after price correction, which means that the surpluses of accounting settlement are caused only because of the penalization of balance groups.

On the basis of all settlements in all accounting periods and corrections of C'+ in C'– the market operator every month carries out the financial settlement of imbalances. Financial settlement are prepared for the balance groups with consumption or delivery points. For the groups without these points, that is for traders, which in Slovenia does not act as suppliers, the financial settlement is done only in cases where balance responsible parties forecast imbalances.

Figure 10 shows the prices of imbalances C'+ in C'– and price indices in the Slovenian electricity power exchange SIPX in 2015.

Figure 10: Average daily values of basic prices of imbalances C'+ in C'– and index SIPX in 2015



Source: Borzen

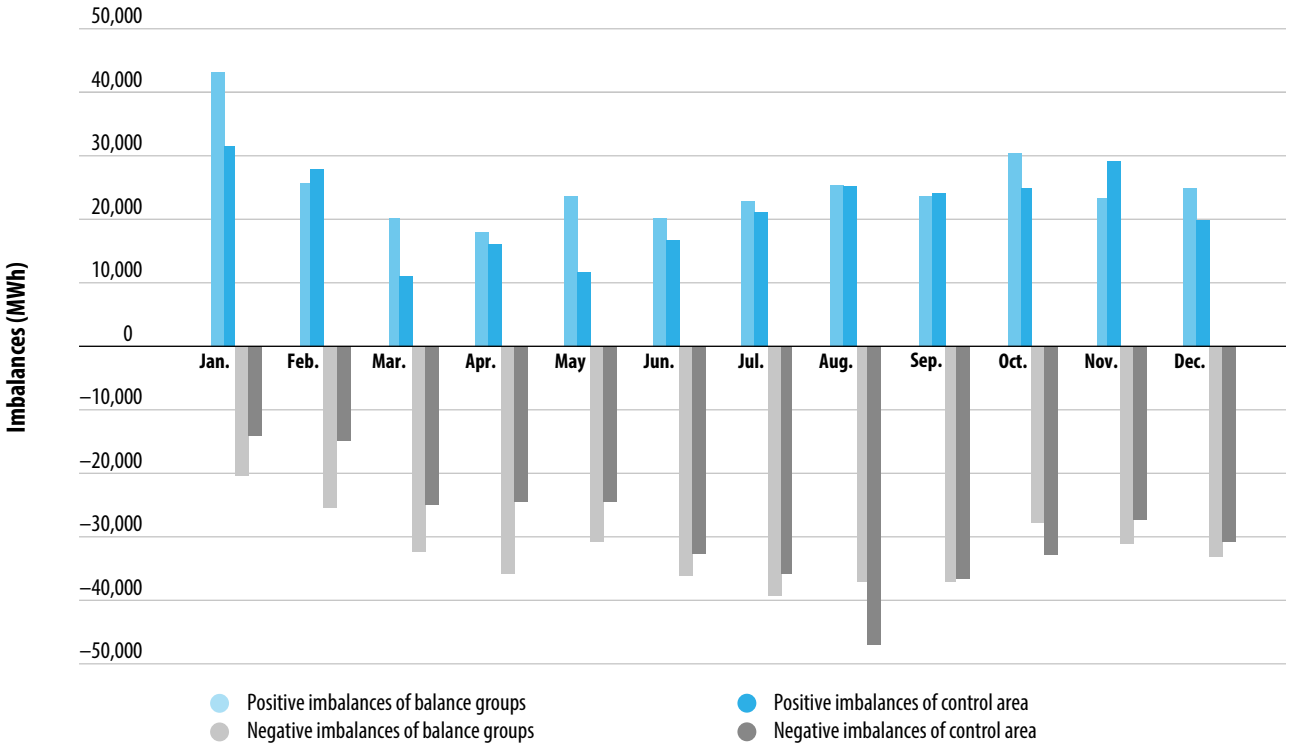
For the calculation basic prices of imbalances C'+ and C'–, and consequently for the calculation of derived prices of imbalances, C'+ and C'–, Slovenian Stock Exchange Index SIPX is used. The average value of SIPX in 2015 amounted to 41.41 EUR/MWh. The maximum value of SIPX occurred on 23 July in the 15th and 16th hour, amounted to 143.02 EUR/MWh, and the lowest in several hours during the year, when was 0.00 EUR/MWh.

Movements of prices for imbalances in 2015 were marked by slightly higher values in the second half of the year, especially between July and September. After a longer period the prices C'+ in C'– in 2015, except in May, were no longer equal at the same as index SIPX, which can be attributed to the smaller impact of the agreement on Imbalance Netting Cooperation (INC) between the Slovenian and Austrian TSOs, which has been in place since May 2013. According to this agreement at any time the imbalances of the Slovenian and Austrian power system are compared and after that the different directions of imbalances are mutually eliminated. INC had in 2014 very positive effect on overall costs of imbalances, since the prices of energy for imbalances from INC were very favourable. In 2015, the effects of this energy slightly changes, and therefore no longer beneficial for balance groups in the Slovenian market as in the previous year.

From January to the end of December the average price for positive imbalances C'+ was 54.88 EUR/MWh, and for negative imbalances C'– 35.35 EUR/MWh. The highest value of C'+ reached on 7 June in 24th hour amounted to 1,112.26 EUR/MWh while the value of C'– was the lowest on 21 November in 13th hour, when amounted to –76.79 EUR/MWh

In Figure 11 the total amounts of positive and negative imbalances of all balance groups in Slovenia in 2015 are shown as well as total positive and negative imbalances of the Slovenia regulated area.

Figure 11: All imbalances of the Slovenian electricity power system in 2015



Sources: Borzen, ELES

Because of mutual elimination of positive and negative imbalances of balance groups, the imbalances of the system are usually lower than the sum of imbalances of all balance groups. In the months, when there were deviations from this rule, this was a due to the implementation of INC agreement since the imbalance of the system was apparent because of the compensation of imbalances of the Slovenian and Austria power system.

Nevertheless, the imbalances of the regulated area follow the imbalances of all the balance groups by size, therefore, the maximum and minimum values for both categories were detected in the same months. Thus, the maximum positive imbalances were observed in January, and the maximum negative in July. The total annual positive value of imbalances of the regulated area amounted to 300,292 MWh, and negative 387,450 MWh. At the same time, the total annual positive imbalances of all balance groups amounted to 258,325 MWh, and negative 346,660 MWh. In comparison with previous years, we can notice that the needs for the balancing the system are gradually rising, while the total imbalances of balance groups have been changing through the years, but the overall trend of increasing or decreasing cannot be observed which can be seen from Table 9.

Table 9: Movements of all imbalances of balance groups and the control area of Slovenia in years 2011–2015

	2011	2012	2013	2014	2015
Total positive imbalances of balance groups (MWh)	326,247	306,370	301,777	299,692	300,292
Total positive imbalances of the control area (MWh)	137,238	132,460	161,056	232,311	258,325
Total negative imbalances of balance groups (MWh)	–398,218	–430,519	–397,808	–330,305	–387,450
Total negative imbalances of control area (MWh)	–208,954	–255,025	–234,919	–292,514	–346,660

Sources: Borzen, ELES

In comparison to 2014, in 2015 positive imbalances increased by around 11%, and negative by 18.5%. Compared to 2011, positive imbalances of the system increased by almost 88%, and negative by 66%. The steady increase of imbalances of the system in both directions is mainly due to growing share of unpredictable electricity production from renewable sources

In 2015, 12 new members joined the Balance Scheme, six of them were foreign companies. At the same time, five members left the Balance Scheme, of which two domestic and three foreign companies. Apart from entries and exits, two transitions were carried out due to cancellation of the balance contract with agreement on settlement, with which two balance groups become subgroups. In comparison to 2014, the number of Balance Scheme increased by seven members. At the end of the year, the Balance Scheme had 60 groups, (21 domestic and 39 foreign companies), and 24 subgroups, (18 domestic and six foreign companies), all together 84 members, which is the highest number so far.

3.2.2.3 Security of operation and quality of supply

In order to ensure reliable and safe operation of the network, in Slovenia the n-1 criterion is used for the transmission network. By using n-1 criterion, it is guaranteed that in case of outage of any component of the system, overloading, limits exceeding, or supply interruptions are avoided. The same criterion is used for planning and operation of MV distribution network. The difference with regard to the transmission network is only in operation since the outage of the element in the distribution network can cause a shorter interruption needed for manual switch and setting up the power supply from the other side of the network.

At the system level, with the implementation of appropriate regulation using quality of supply standards the level of already achieved supply quality is trying to be improved or maintained with optimal costs. Quality of supply is monitored by the Energy Agency by taking into account the minimum supply standards. When considering the quality of supply, various activities are present, such as monitoring, reporting, analysis, and assessment of the data of the following observed levels: continuity of supply, commercial quality and voltage quality.

In the execution of their duties, electricity system operators and distribution companies use international standards, Slovenian standards and technical reports which are implemented in the Slovenian standardization system. For continuity of supply and voltage quality the international standard SIST EN 50160 - Voltage characteristics of electricity supplied by public distribution networks.

Continuity of supply

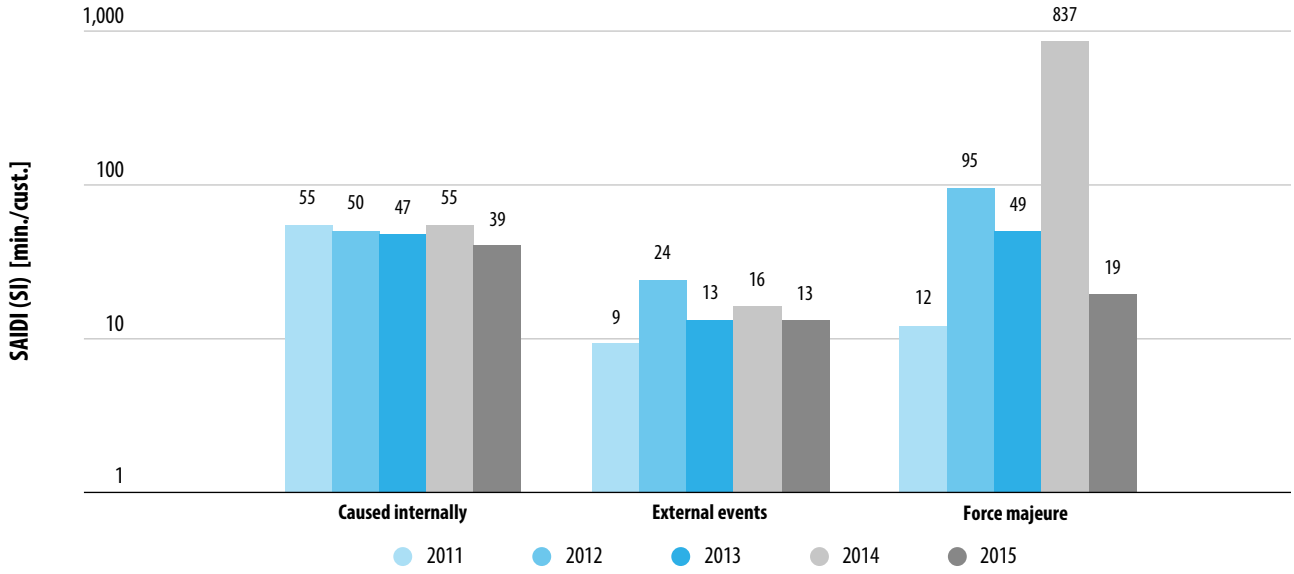
The data on the continuity of supply are collected, reported, and analysed by the uniform methodology, in accordance with the Act Concerning the Submission of Data about the Quality of the Electricity Supply. In this way, the mutual comparability of data on quality of supply among distribution companies is ensured, and also international comparability of achieved parameters of continuity of supply on the EU level.

Interruptions caused by electricity system operators or distribution companies are classified into internal events, in cases when interruptions are caused by third person, they are classified among external events. Force-majeure can cause interruptions, especially at unexpected or not foreseeable events, which are in many cases the consequences of extremely bad weather conditions.

On the basis of the SAIDI and SAIFI relating to individual distribution company, the Energy Agency calculated the aggregate value of SAIDI and SAIFI indicators on the basis of the number of all consumers in Slovenia. Monitoring of SAIDI and SAIFI in the observed period indicates gradual improvement of quality of supply; in 2015 the supply to a Slovenian consumer was on average interrupted 2.66 times in a total duration of 200 minutes. Also, the quality of supply, for which is directly responsible the system operator, has been improving since the analysis of continuity of supply parameters shows the gradual decrease of both indicators, except for 2014, which was marked by the extreme weather conditions in winter (glaze ice). The continuity of supply in 2015, however, did not deviate from the long-term average.

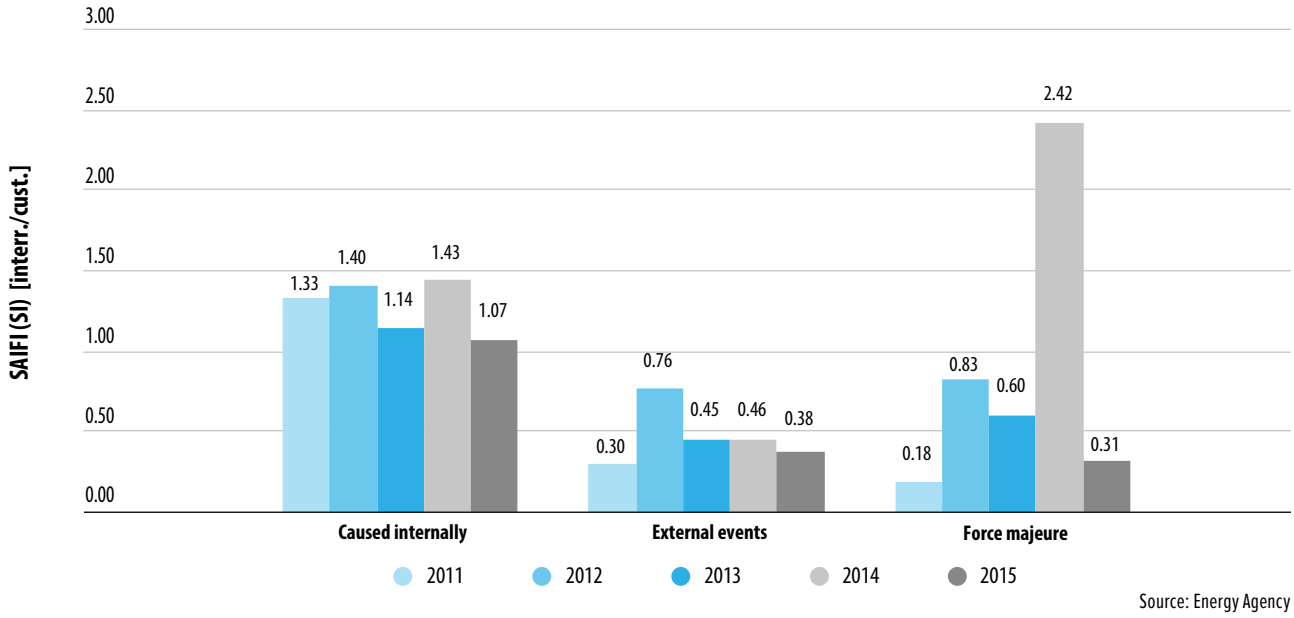
Figure 12 and 13 show SAIDI in SAIFI between 2011 and 2015 for unplanned long-term interruptions caused internally causes, externally or by force majeure.

Figure 12: SAIDI for unplanned long-term interruptions, separated by causes in the period 2011–2015



Source: Energy Agency

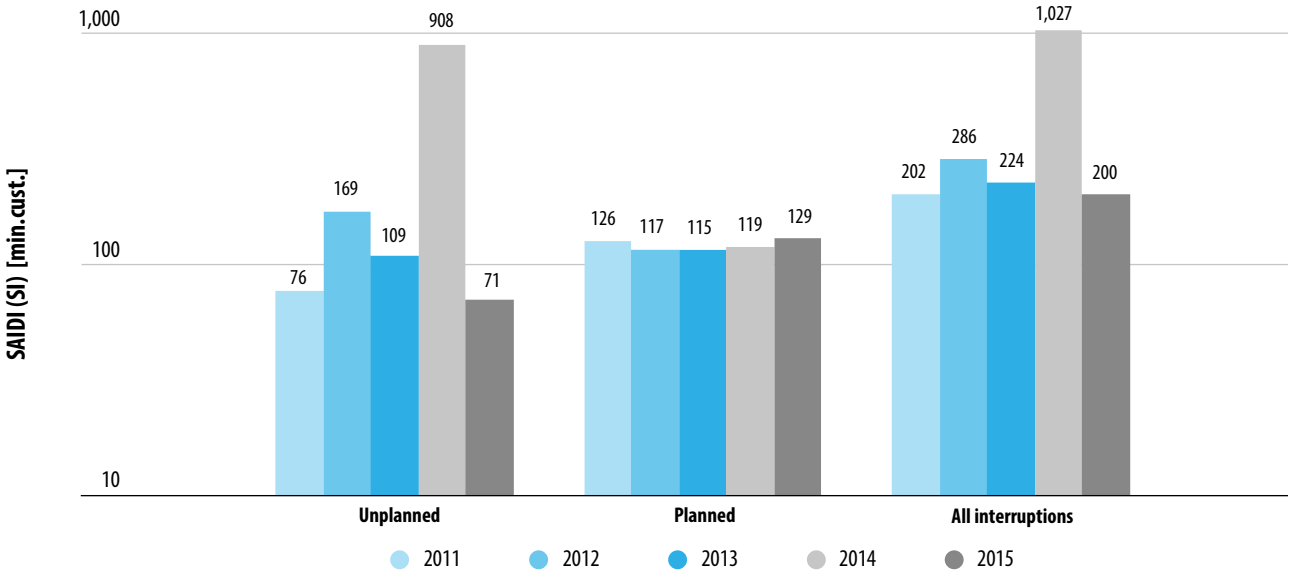
Figure 13: SAIFI for unplanned long-term interruptions, separated by causes in the period 2011–2015



Source: Energy Agency

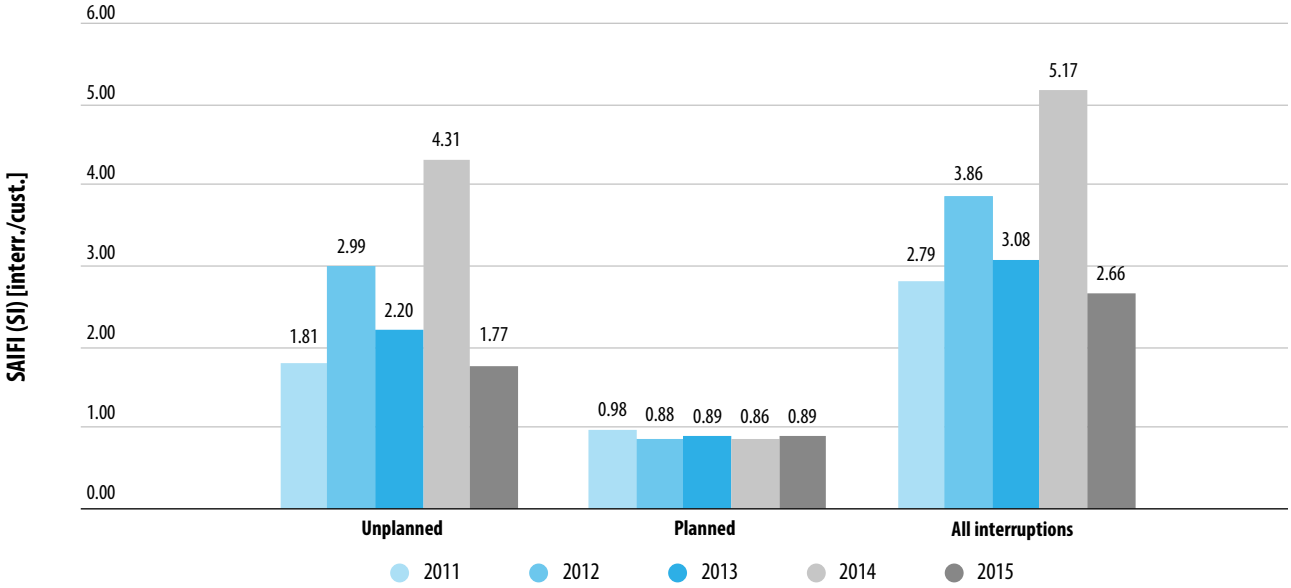
In Figures 14 and 15 are shown the indicators SAIDI and SAIFI for the period from 2011 to 2015 for unplanned, planned and all interruptions in Slovenia.

Figure 14: SAIDI for all long-term interruptions, separated by causes in the period 2011–2015



Source: Energy Agency

Figure 15: SAIFI for all long-term interruptions, separated by causes in the period 2011–2015



Source: Energy Agency

Commercial quality

The level of commercial quality is determined by the system standards and the guaranteed standards for the commercial quality. If the guaranteed standards for the commercial quality, which are defined by the legislation or set by the regulator, are not met, an individual service provider may have to face financial consequences, i.e., the compensations paid out to the customer concerned. A consumer can expect a certain quality on the basis of the system standards, as they indicate the average level of the service quality in the system, or the share of the customers provided with a particular service. In 2015, we did not recorded any compensation payment for violation of commercial standards.

Parameters of commercial quality show that the level of services is improving, since the majority of indicators indicate a decrease in average time for carrying out a certain service in 2015 compared to the previous year.

In Table 10 the average values of commercial quality parameters are presented for individual services in 2014 and 2015.

Table 10: Commercial quality parameters for individual services in 2014 and 2015

Distribution company	Elektro Celje		Elektro Gorenjska		Elektro Ljubljana		Elektro Maribor		Elektro Primorska	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Connection-related services										
Average time required for issuing the approval for connection [days]	6.93	6.68	12.00	10.00	17.00	17.00	9.80	7.00	22.80	24.72
Average time required for issuing cost estimation or proforma invoice for simple works [days]	1.38	1.49	3.60	2.70	2.82	3.17	5.50	3.80	3.75	6.64
Average time required for issuing the contract for the connection on LV system [days]	3.66	2.68	2.00	1.00	8.00	5.00	7.50	6.10	3.16	2.98
Average time required for activating the connection to the system [days]	2.09	2.04	2.20	1.70	3.30	3.50	4.60	4.60	3.91	3.62
Customer service										
Average response time to consumers written questions, complaints or enquiries [days]	3.96	1.67	6.40	3,.00	3.60	2.42	4.00	4.80	–	–
Average hold time in the call centre [s]	76.00	24.56	87.00	56.00	121.00	94.66	55.90	30.00	33.33	38.07
Call centre performance indicator [%]	90.00	–	64.00	84.00	66.20	85.91	88.60	90.90	82.95	86.12
Technical services										
Average time until the restoration of supply in case of following a failure of current limiting device (06:00 - 22:00) [h]	1.35	1.33	1.30	1.20	0.99	1.01	1.22	1.20	2.10	2.43
Average time until the restoration of supply in case of following a failure of current limiting device (22:00 - 06:00) [h]	1.60	1.17	2.40	2.00	1.05	0.88	–	1.60	3.59	2.78
Average time for answering the voltage complaint [days]	30.34	18.00	16.80	13.70	33.39	29.04	11.10	12.30	18.44	8.37
Average time required for resolving of voltage quality deviations [months]	0.18	0.25	1.00	–	81.25	5.02	19.60	30.30	37.66	1.95
Metering and billing										
Average time required for elimination of meter failure [days]	5.12	3.33	6.30	5.40	2.80	3.60	2.90	3.40	6.11	0.24
Average time for restoration of power supply following disconnection due to non-payment [h]	0.10	4.48	1.00	1.20	0.91	0.80	2.50	4.70	0.15	0.52

Source: Energy Agency

With executive regulation has been established a unified procedure for collecting complaints related to commercial quality.

From the data on commercial complaints is evident that most of the complaints were related to the delay in repairing the meter failure. At some commercial quality parameters individual shares of justifiable complaints can be recorder reflecting that consumers are aware of their rights, which their system operator is obliged to provide.

Data on complaints concerning the commercial quality in 2015 are gathered in the next table:

Table 11: Number and shares of justifiable complaints relating to commercial quality in 2015

Reason for a complain	Number of all complaints	Number of justifiable complaints	Share of justifiable complaints [%]
Activation of a connection			
Incorrect disconnections due to mistakes of maintenance personnel	1	1	100
Exceeding the time for restoration of supply following a failure of current limiting device	1	0	0
Quality of supply			
Exceeding the time for response to complaint in relation to voltage quality	10	3	30
Exceeding the maximum time for elimination of deviations of supply voltage	1	1	100
Metering			
The delay in removing the meter failure	296	188	64
Missing of yearly number of meter reading by the designated company	1	0	0
Metering, billing, and recovery of costs			
Delay in time for response to written questions, complaints and other consumers' claims	45	9	20
Connection to the system			
Delay in issuing the contract for connecting to the LV system	1	1	100
Delay in issuing a consent for connection	12	0	0
Customer service			
Untimely information about planned interruptions	16	4	25

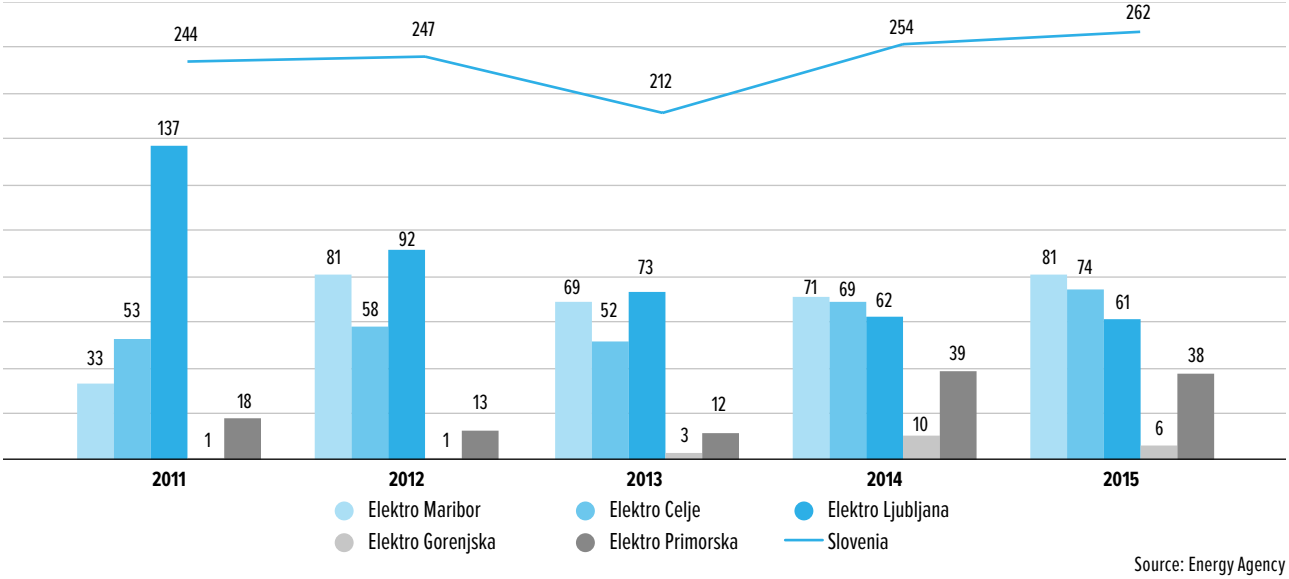
Source: Energy Agency

Voltage quality

In accordance with the legislation, system operators and distribution companies must carry out regular monitoring at the border of transmission and distribution network at delivery points of all large users (producers and consumers). Occasional monitoring is carried out according to the predetermined plan. In dealing with a consumer's complaint the monitoring of voltage quality is performed, which lasts at least a week. The monitoring of voltage quality is carried out in the procedure for connection approval when the issuer of the approval in this way checks the voltage quality conditions.

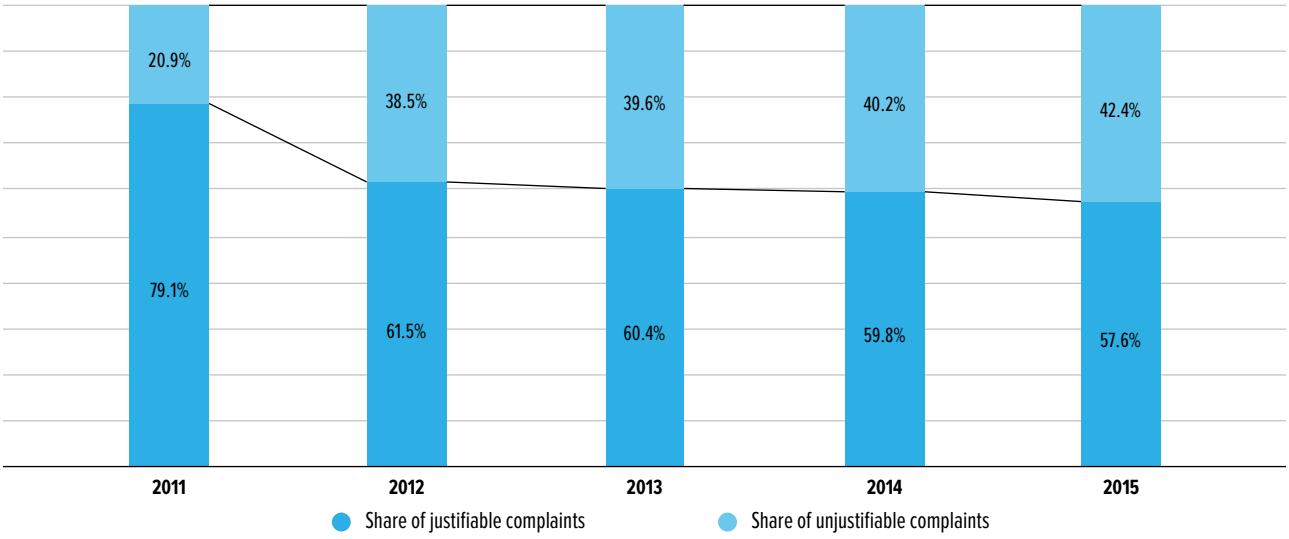
In Figure 16 the number of complaints related to voltage quality by individual distribution companies is shown. The total number of received complaints has increased in comparison to 2014 while the share of justified complaints slightly decreased.

Figure 16: Number of complaints relating to voltage quality by distribution companies in the period 2011–2015



Source: Energy Agency

Figure 17: Shares of justifiable and unjustifiable complaints related to voltage quality in the period 2011–2015



Source: Energy Agency

The electricity TSO (ELES) is obliged to carry out all the tasks necessary for safeguarding the service quality of the transmission system operator. ELES carried out permanent monitoring of voltage quality of the high-voltage network 186 connection points (between distribution, production, and direct consumers). In some measuring points, slight deviations from the standard ware recorded, namely the size of the supply voltage and flicker. Because of the supply voltage variations, deviations were detected in three measuring points, which is on average one non-compliant week per individual measuring point. The same as in the year before, in 2015 most violation of the standard were connected with the occurrence of flicker. Flicker was detected in 163 metering points, which is on average 13.6 non-compliant weeks per individual measuring point.

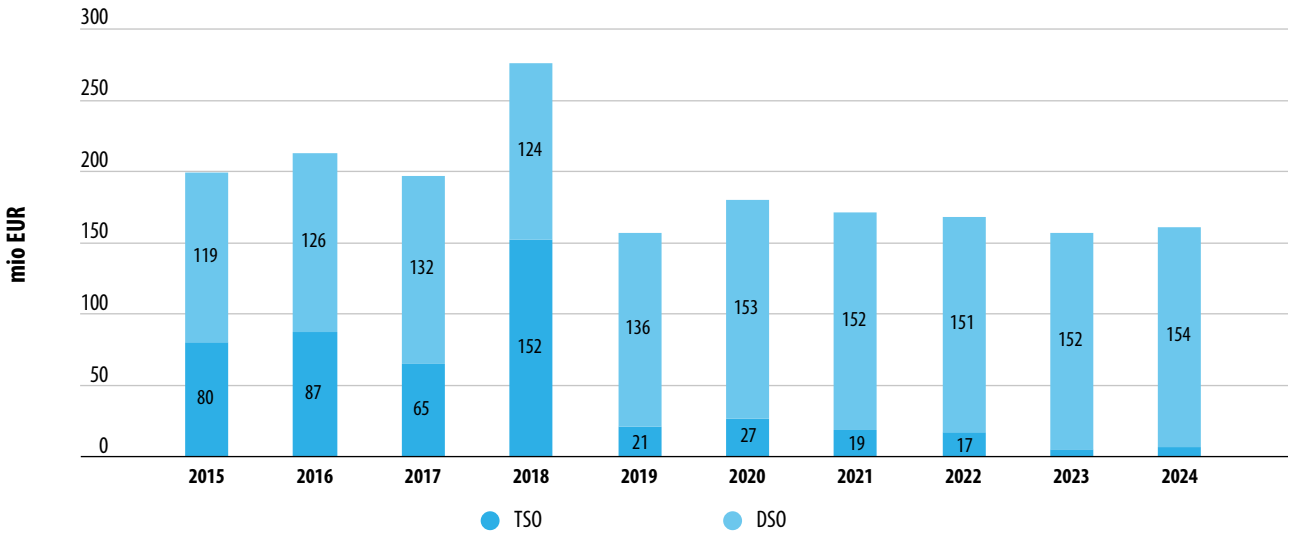
The monitoring of voltage quality will continue at the remaining connection points between the transmission network and its users, where permanent monitoring is not yet established, as well as at the connection points with transmission networks of Croatia, Austria, and Italy.

3.2.2.4 The long-term development plan of the electricity network

In 2015, electricity system operators prepared development plans for the electricity transmission and distribution system for 2015–2024, and the ministry, responsible for energy, approved both documents. These plans are harmonized, and take into account the national energy policies. In the preparation of plans, common methodology was used; the methodology takes into consideration long-term supply forecast, analysis of expected operational conditions, level of the security of supply, economic analysis as well as the potential location of new production sources. The TSO in addition considers the methodology of ENTSO-E, which determines different visions and scenarios of the development of technical and technological parameters, utilisation rates, energy efficiency, the introduction of RES and other parameters based on assumptions about macroeconomic development.

Electricity system operators for the period from 2015 to 2024 are planning the investments in the amount of € 481 million for the transmission network and € 1398 million for distribution network. High investments costs for the transmission system in the first years of the ten-year period are mainly related to the implementation of Article 35 of the Energy Act on separation of transmission and distribution networks, and the implementation of 400-kilovolt connection with Hungary. Increased investments in the distribution networks after 2020 are associated with expected increase in electricity consumption, peak loads in the networks, and massive introduction of smart grids.

Figure 18: **Assessment of the investments from the electricity system operators' development plans for the period 2015–2024**



Sources: ELES, electricity DSO

In the next decade, the electricity DSO will mainly in the development of network operating systems, which include meshed MV network, automation and control, neutral point connection (the method of grounding the neutral point) and network cabling. In addition to these measures, which at increasingly frequent extreme weather significantly reduce the vulnerability of the network, the DSO will improve the quality of supply and decrease the number of short- and long-term interruptions by further introductions of smart grids and smart metering.

At physical volume of planned investments of the DSO the largest part is dedicated to the constructions of new and reconstruction of existing MV network, which is the weakest link of the continuity of supply in the power system, especially overheads lines. In the construction of new networks underground cables prevail, and at reconstructions of overhead lines the replacement of bare electricity cables with half insulated ones or self-supporting cables.

The development plan of the electricity TSO up to 2024 is based on the construction of new connection lines with neighbouring systems, the control of unwanted energy flows and adequate voltage conditions, as well as a reliable and safe operation in accordance with the recommendation and set criteria by ENTSO-E. The most important investment in coming years is the construction of trans-

mission lines 2 × 400 kV Cirkovce–Pince, which will significantly increase the import capacity of the Slovenian transmission system and allow the import of cheaper electricity from Eastern Europe, as well as improve the reliability of power supply in Slovenia. The TSO is considering the possibility of new HVDC link to Italy, which would significantly increase export transmission capacity, but at the same time cause increased flows in the Slovenian internal network, which will load heavily the transmission system in Slovenia. For more capacity of the Slovenian transmission network and for providing safe and reliable operation, the TSO is planning to reinforce the system with the transition of existing 220 kV TL to 400 kV voltage level on the direction Divača–Beričevo–Cirkovce–Podlog. On the other hand, this transition will during low load further deteriorate voltage conditions in the transmission network, and because of that in the future additional measures to reduce excessive voltage will be needed.

At the end of 2015, the European Commission adopted new Delegated Regulation as regards the Union list of projects of common interest, which identifies in the fields of electricity, gas and oil, and the three Union-wide energy infrastructure priority areas for smart grids, electricity highways and carbon dioxide transportation networks strategic projects. This list also includes the project in which participates Slovenia:

- TL 2 × 400 kV Cirkovce–Pince;
- TL 2 × 400 kV Divača–Cirkovce, transition from 220 kV to 400 kV;
- a new HVDC between Italy and Slovenia;
- Sincro.Grid Project.

In the Sincro.Grid project are involved the TSOs and DSOs of Slovenia and Croatia. With the use of the most advanced technologies in power systems of bout countries will help to increase the management of more and more demanding conditions in the area of voltage control, better integration of dispersed sources, providing ancillary services and dynamic monitoring of transmission capacity.

Control over the electricity system operators' development plans

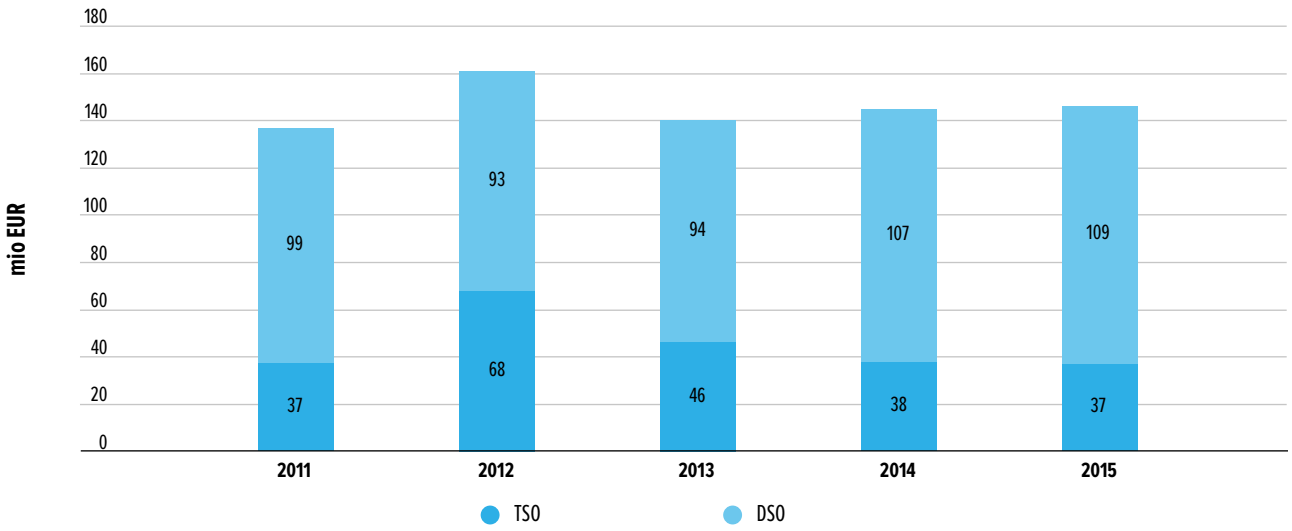
Table 12: Transmission and distribution electricity infrastructure in Slovenia at the end of 2015

Transmission system	
Lines 400 kV	669 km
Lines 220 kV	328 km
Lines 110 kV	1,862 km
DTS HV/HV	27
DS 110 kV, TS 110 kV, EPS 110 kV	3
Distribution system	
Lines 110 kV	870 km
Lines 35 kV, 20 kV, 10 kV	17,600 km
Lines 0,4 kV	46,555 km
DTS 110 kV/MV	88
DTS MV/MV	9
DS MV	92
TS MV/LV	17,833

Sources: Electricity system operators

Figure 19 shows the investments of the TSO and DSO in the last five years, including investments in new assets and the reconstruction of existing ones. The volume of investments of the DSO has been stable, or slightly increasing, while the investments of the TSO has been reaching high points in years of large investments.

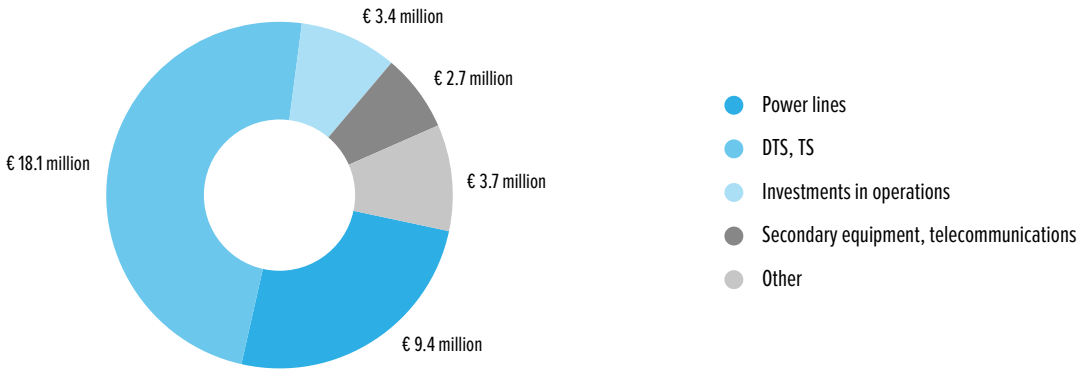
Figure 19: Investments of the TSO and DSO in the period 2011–2015



Sources: ELES, Electricity DSO

ELES in 2015 allocated € 37.3 million for investments, which represents only around 47% of funds planned in the development plan, or 53% of funds planned in the regulatory framework. Lower realization is mainly the result of legislation, coordination with local communities, inaccurate land register, and the difficulties in the execution of public tenders. No major new investment was concluded, most of the funds, around € 11.7 million was allocated for the implementation of Article 35 of the Energy Act on the 110-kV lines; due to the delay in implementing the Regulation on the division of the 110 kV network into the distribution and transmission systems much less than planned € 28 million from the development plan. Among major investments in new assets it is worth mentioning the investments in the system for the management and control of the electricity system in the amount of almost € 3 million and the implementation of information system in the amount of € 1.3 million. In the reconstructions stand out the investments in 2 x 110 kV lines Divača–Pivka–Ilirska Bistrica, amounted to € 2.2 million, and the replacement of HV and secondary equipment in the regulation station 110 kV Hudo, amounted to € 1.7 million.

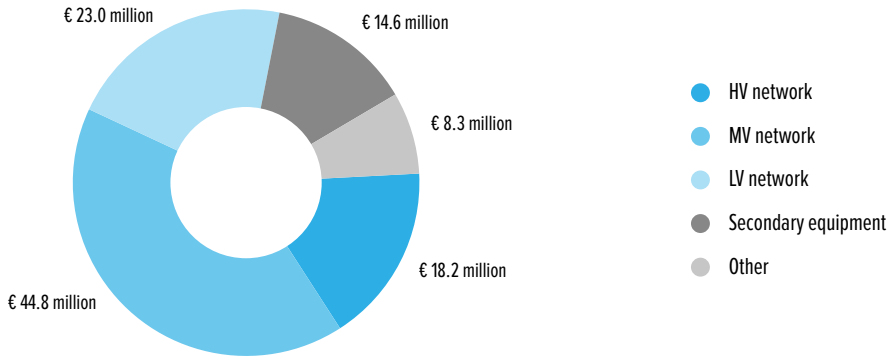
Figure 20: Investments of the TSO in 2015



Source: ELES

The electricity DSO and the owners of the distribution network for the investments in electricity infrastructure allocated € 108.9 million which is only 72% of funds planned in the regulatory framework, and 91% of funds planned in the development plan for 2015–2024. The reason for this deviation is the fact that there has been a change in the values of planned investments for 2015 from the distribution system development plan for 2013–2022 according to the current development plan. Of the total realized investment, € 56.5 million were earmarked for the reconstructions, and € 8.3 million for other necessary investments. The largest share of investments was carried out on MV and LV network, where the constructions of new MV cables were in the first place, followed by replacing overhead lines with underground lines to increase the robustness and reliability of operation in extreme weather conditions. Important share of investments are also assets earmarked for the replacement of electricity metering devices with advanced metering systems.

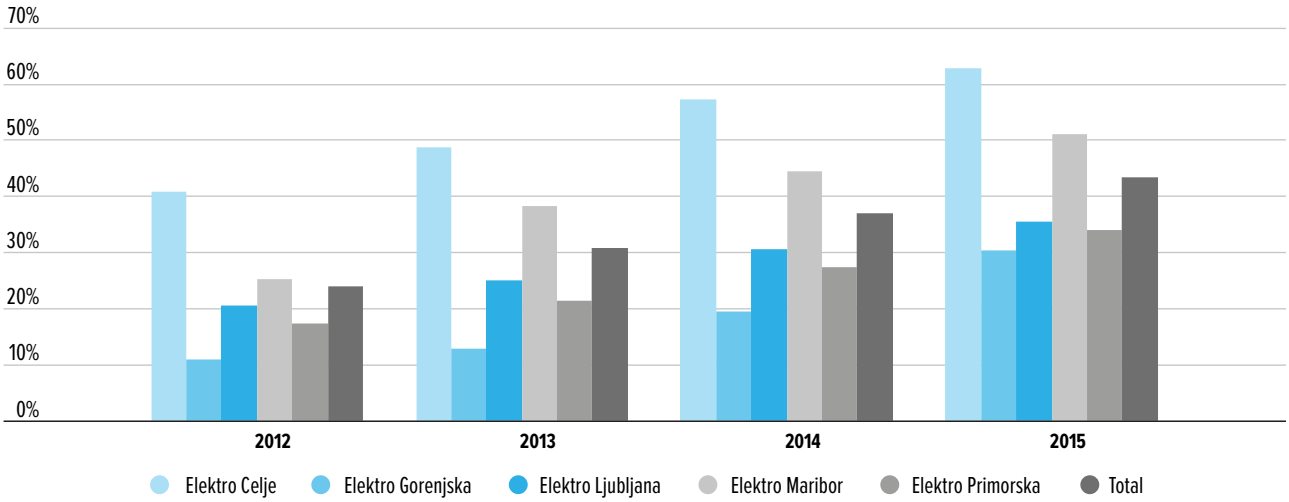
Figure 21: Investments of the electricity DSO in 2015



Source: Electricity DSO

At the end of 2015, the Government adopted the Regulation on measures and procedures for the introduction and interoperability of advanced electric power metering systems, which imposes on the DSO the implementation of unified advanced metering system for all electricity consumers in Slovenia, but does not set binding targets regarding time schedule for deployment. Notwithstanding the Regulation, the deployment of advanced metering infrastructure at consumers has been going on for many years, and Slovenia ranks at the top among the Member States in relation to the degree of replacement conventional metering devices with advanced ones. If current trend (shown in Figure 22) continues, Slovenia will presumably manage to meet the targets of the European Directive2009/72/EC, which requires that 80% of consumers by 2020 should be equipped with advanced metering system, or the target set in the Operational Programme for the Implementation of the EU Cohesion Policy in the period 2014 – 2020, in which a target indicator of development and use of smart distribution systems indicates that 85% of users should be connected to the advanced metering systems by 2023.

Figure 22: Trend of deployment of advanced metering systems in the period 2012–2015



Sources: Electricity distribution companies

3.2.3 The network charges for the transmission and distribution networks

3.2.3.1 Setting the network charge

In the period from 1 January 2013 to 31 December 2015 the Energy Agency regulated the activities of electricity system operators on the basis of regulated network charge. With this method the Energy Agency determines the network charge and other revenues, and by taking into account the surplus of the network charge from the previous years the system operators the covering of all eligible costs of the regulatory period and the deficit of the network charge from previous years is ensured. The Energy Agency encouraged cost-effectiveness of service providers, guarantees permanent and stable business operation of electricity system operators as well as stable and predictable environment for investors, owners and users of the system.

Prior the regulatory period the Energy Agency determined the regulatory framework for the electricity system operators. The regulatory framework is an estimation of eligible costs, which are defined in Act Determining the Methodology for Charging for the Network Charge and the Methodology for Setting the Network Charge and the Criteria for Establishing Eligible Costs for Electricity Networks. With the regulatory framework the costs necessary for carrying out the activities of electricity system operators' are covered. These costs include costs of operation and network maintenance, costs of ancillary services, depreciation costs and regulated return on assets. In determining the network charge, the Energy Agency took into account also other incomes from operating activities as well as surpluses or deficits from the previous years.

For the regulatory period from 1 January 2013 to 31 December 2015 the Energy Agency determined the eligible costs for the TSO in the amount € 426.5 million, and for the DSO € 829.5 million.

The methodology for setting the network charge is also based on incentives, which depend on the recognized eligible costs, the achieved level of the quality of supply, and investments in smart grids. The derogations from the regulatory framework are determined as the difference between planned and actual eligible costs of the system operator and difference between planned and actual financing sources for covering eligible costs. By the methodology of regulated network charge, the system operator is obliged to consider the surplus of the network charge as dedicated revenue for covering a deficit of the previous years or eligible costs of the following years. At the same time, the system operator has the right to enforce the network charge deficit in establishing the network charge in coming years. The Energy Agency must issue a separate decision if it concludes that derogations were not calculated in accordance with the methodology.

The regulatory framework can be modified during the regulatory period if the Energy Agency establishes that significant changes within the operation of the system operator occur.

In 2015, the Energy Agency issued a general act by which the methodology for determining the regulatory framework for the period from 1 January 2016 to 31 December 2018 was set. For the period in question, the Energy Agency determined € 490.9 million of eligible costs for the TSO, and € 840.1 million for the DSO.

3.2.3.2 The charging for the network charge

To determine the charging for the network charge, the Energy Agency uses a non-transaction postage-stamp method, which means that, with respect to charging for the network charge, the tariffs and average costs for making a connection are uniform for the whole territory of Slovenia within the framework of individual consumer groups. To divide the costs across different voltage levels the gross approach with respect to calculating the network charges for the transmission and distribution networks. The calculation method did not change during the regulatory period to maintain predictability at the consumers. The calculation method for setting the binomial tariff – the operator by measuring establishes achieved maximum power and the volume of consumed electricity, pursues the possibility of demand response during the peak demand. Consumers can by lowering the maximum power significantly impact the level of the network charge, and thereby, contribute to the security of supply. The methodology for calculation of the network charge did not change during regulatory periods so far since it is important to keep predictable environment for consumers.

For covering the eligible costs of the system operator that are funded from the network charge, the Energy Agency determines the network charge tariffs for individual consumers' groups; the tariffs are divided into:

- the network charge for the transmission system;
- the network charge for the distribution system;
- the network charge for the excessive reactive power;
- the network charge for connected load.

The electricity system operator classifies the final consumer in the consumer group with respect to the voltage level (HV, MV, LV), the type of connection (busbar, feeder), operating hours and type of consumption.

At final consumers with power metering the network tariffs for the transmission and distributions systems are seasonally differentiated:

- High season – from January to March and from October to December;
- Low season – from April to September.

Dependent on the time of day the network tariffs for the transmission and distributions systems are divided to:

- Peak daily tariffs during peak time (for final consumers on HV and MV level with metering of 15-minute interval during peak demand);
- Higher daily tariffs during high tariff, charged from Monday through Friday from 6 a.m. to 10. p.m.;
- Low daily tariffs during low tariff, charged in the remaining week hours and during weekends and non-working days the whole day.

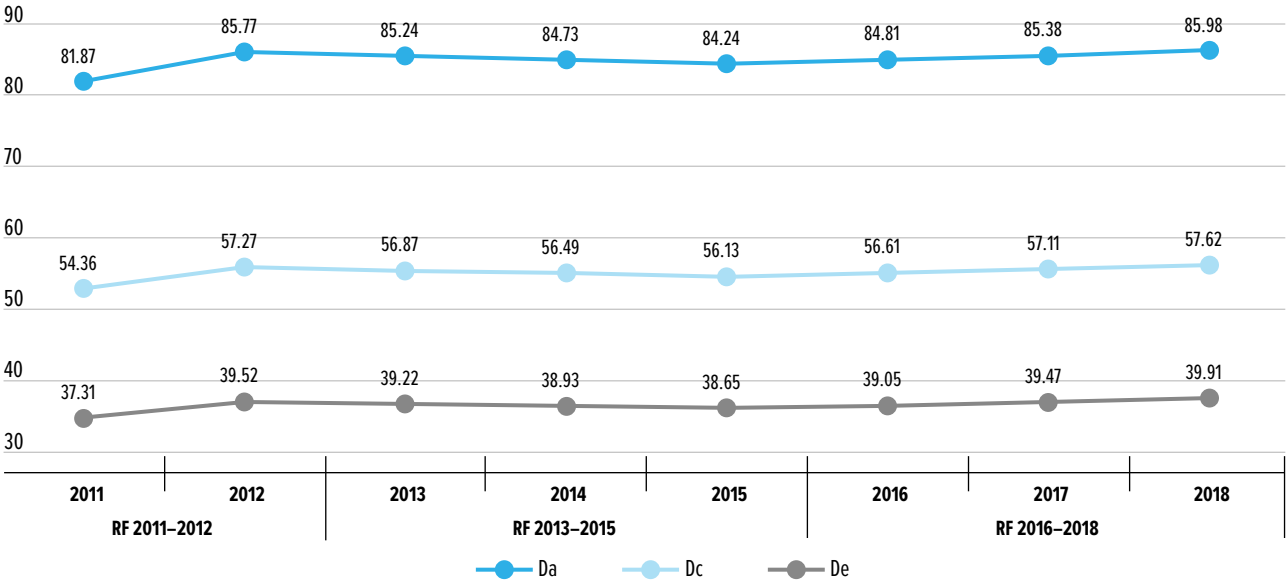
The capacity charge is based on nominal fuse amperage at both - final consumers on the LV level without power metering and household consumers regarding to the connection type (single-phase or three-phase connection).

Figures 23 and 24 show the network charge for the transmission and distribution systems in the past years (in the regulatory frameworks) and the currently valid regulatory framework for 2016–2018 for some typical household and business consumers, classified into the groups with the following characteristics:

- Household consumer:
  - Da (consumption 600 kWh, single tariff, power 3kW);
  - Dc (consumption 2200 kWh in high tariff, and 1300 kWh during low tariff, power 7 kW);
  - De (consumption 5000 kWh in high tariff, and 15000 kWh during low tariff, power 10 kW).
- Business consumer:
  - Ib (power 50 kW, annual consumption 50 MWh (tariffs ratio HT:LT=60:40), consumption group LV T<2500 h, seasons average);
  - Ie (power 500 kW, annual consumption 2 GWh (tariffs ratio HT:LT=55:45), consumption group MV T>=2500 h, seasons average);

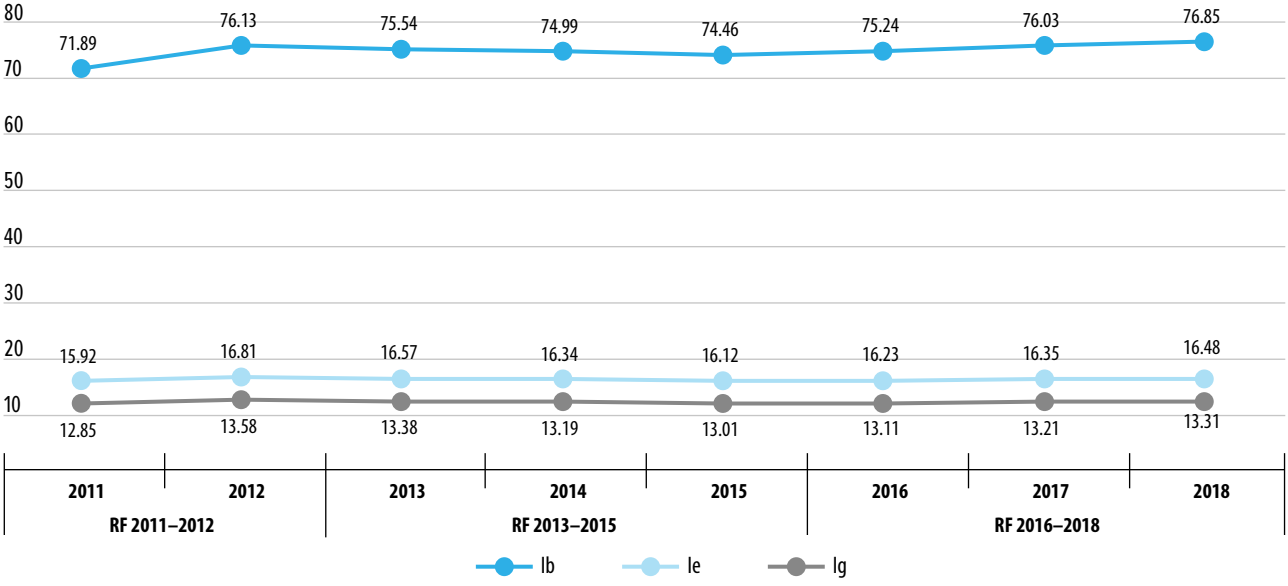
- Ig (power 4 MW, annual consumption 24 GWh (tariffs ratio HT:LT=55:45), consumption group MV T>=2500 h, seasons average).

Figure 23: Network charge for households in the period 2011-2018 (EUR/MWh)



Source: Energy Agency

Figure 24: Network charge for business consumers in the period 2011–2018 (EUR/MWh)



Source: Energy Agency

After the network charge increasing in the regulatory framework 2011–2012, in the past three years a period of progressive reduction of the network charge followed. Taking into account the criteria for determining the network charge and the method of calculation the elements of the regulatory framework for the period 2016–2018 is expected an increase in the network charge. Tariffs for the transmission system will in the period 2016–2018 be decreasing by 0.13%, and for the distribution system increasing by 1.52% in comparison to the previous year.

3.2.4 Cross-border transmission capacity

Within the Slovenian transmission systems there are no restrictions on the access to the network. Each member of the Slovenian Balance Scheme has the access to the transmission system, and may between any two points of the system transfer any volume of electricity. At the borders of the Slovenian transmission system, the situation is different. The Slovenian transmission system is with interconnectors connected with the neighbouring systems of Austria, Italy and Croatia. Capacities of these interconnectors are limited, therefore it is necessary to establish the procedures for the access of all interested market participants in a non-discriminatory manner.

European legislation requires that the TSOs allocate the capacities of limited interconnectors among individual trading areas by using market-based methods. Market-based methods are the methods by which market participants pay for the access to the cross-border transmission capacities (hereinafter referred to as CBTCs). Prices paid for the CBTCs reflect the difference between the neighbouring trading areas or countries. To ensure equal opportunities for all participants the auctions are used. There are explicit and implicit auctions.

In the case of explicit auctions, market participants bid only for interconnectors capacities (MW), while at implicit auctions held through trading on power exchanges participant bid at the same time for the energy (MWH) and for CBTCs. Auctions of CBTCs are usually performed on yearly, monthly or daily basis, and for other capacities within a day.

The EU electricity target model (expected to be established by 2014), foresees that allocation of the CBTCs on yearly and monthly level would be carried out through explicit auctions, and for day-ahead and intraday through implicit auctions. All auctions should be coordinated and carried out through common trading platforms. The coordination begins already at the level of determining CBTCs, which is normally at first carry out on yearly level, and after that in the period which is as close as possible to the delivery time. The electricity target model will be fully identified by the Network Codes, which were in 2015 in an intensive stage of development and adoption; only Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management came into force.

In 2015, the allocation of CBTCs at the borders of the Slovenian transmission system with the neighbouring countries was performed in compliance with the EU electricity target model. The Table 13 presents the ways of allocation of CBTCs in 2015.

Table 13: Overview of the allocation of CBTCs in 2015 by borders

Border	Period of the allocation of CBTSs	Methods of allocating CBTSs
SI-IT	yearly	explicit auctions
	monthly	explicit auctions
	day ahead	market coupling – implicit auctions
	intraday	explicit auctions
SI-AT	yearly	explicit auctions
	monthly	explicit auctions
	day ahead	explicit auctions
	intraday	non-market based allocation
SI-CRO	yearly	explicit auctions
	monthly	explicit auctions
	day ahead	explicit auctions
	intraday	non-market based allocation

Source: Energy Agency

The table shows that the situation at the Slovenian-Italian border is the nearest to the electricity target model; only intraday allocation deviates from the model, where the real-time trading is envisaged. The target model of the allocation of CBTCs has not yet been introduced anywhere in Europe; at the moment the development of the appropriate algorithm within the XBID projects is taking place. At the Slovenian-Italian border in 2015 the significant progress was made in the area of the allocation of CBTCs for day ahead since on 24 February the bilateral market coupling of Slovenia and Italy was replaced with interregional market coupling covering the area from Scandinavia to Iberian peninsula.

The allocation at the other two border was in 2015 carried out mainly through explicit auctions, except for intra-day allocation, where non-market allocation was used; that means in chronological order of receipt of tenders. It should be also mentioned that the allocation of CBTCs for day ahead at these two borders was held through explicit auctions mainly because of the problems in Central-East Europe (CEE), where the introduction of planned determination and allocation of CBTCs based on actual flows in the network has not yet been implemented. Explicit auctions on the border with Italy were conducted by the auction house CASC.EU with its headquarters in Luxembourg, and all explicit auction on the Austrian and Croatian border by the auction house CAO based in Germany. These two auctions houses in September joined to a Joint Allocation Office (JAO) with the head- quarters in Luxembourg; JAO will act as a common European platform for explicit auctions for the allocation of CBTCs. At implicit allocation at the Slovenian-Italian border BSP SouthPool Energy Exchange, based in Ljubljana, act as a power exchange. BSP was in December designated as a nominated electricity market operator (NEMO) for trading area of Slovenia.

Table 14 shows a review of the allocated CBTCs by an individual border and directions of flows, the total revenues from the auctions and the price for allocated megawatt hour.

Table 14: Overview of allocated CBTCs and the revenues from the auctions by individual borders

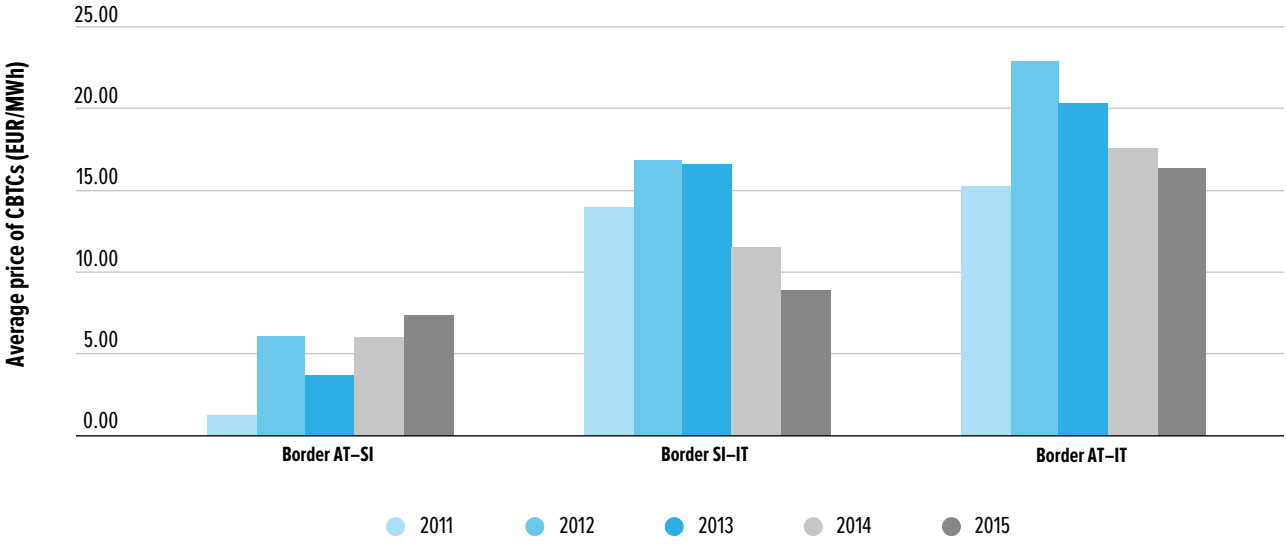
Border	Allocated(MWh)	Gross revenues (EUR)	Average price of allocated CBTCs (EUR/MWh)	Net profit (EUR)
SI-IT	4,007,750	35,778,332	8.93	19,115,172
IT-SI	3,673,307	168,998	0.05	116,469
SI-AT	8,525,534	157,794	0.02	138,420
AT-SI	3,906,518	28,972,283	7.42	24,566,870
SI-HR	10,765,950	2,077,880	0.19	1,503,745
HR-SI	12,115,906	343,157	0.03	267,562

Source: ELES

Table 14 show gross and net revenues from auctions. Net revenues are gross incomes minus the costs of the auctions conducted for the neighbouring system operators. The average price of allocated CBTCs for each border and direction of transmission are calculated as gross income divided by the total amount of allocated CBTCs.

The prices of CBTCs obtained by each borders reflects the difference between the prices in individual markets. The Slovenian market is restrained by German-Austria market, in which the prices are the lowest, and the Italian market, which is characterised by high prices. In the Croatian market in 2015 the electricity power exchange was not yet established, therefore the hourly prices in this market are not known. Bearing in mind the average obtained price of CBTCs for both directions, we can assume that price were not very different as the Slovenian ones. Based on the above we can conclude that in 2015 the most interesting for the traders was the possibility of selling electricity from Germany and Austria to Italy, which could be also inferred from the values of obtained average prices of CBTCs at individual borders. Figure 25 shows the movement of prices for CBTCs from Austria to Slovenia, from Slovenia to Italy, and total price of CBTCs from Austria to Italy in the period 2011–2015.

Figure 25: Movements in the average price of CBTCs in the direction from Austria to Italy in the period 2011–2015



Source: ELES

From the graph in Figure 25 we can see that the total price of CBTCs and the price of CBTCs from Slovenia to Italy in years from 2012 to 2015 were continuously declining, while during this period the price of CBTBs from Austria to Slovenia was increasing. To clarify these movements we should compare price movements in the power exchange with the obtained prices of CBTCs.

Table 15: Movements of price differences on power exchanges and average prices of CBTCs in the years from 2011–2015

	Border AT–SI		Border SI–IT		Border AT–IT	
Year	The difference between the prices in power exchanges* (EUR/MWh)	Average prices of CBTCs (EUR/MWh)	The difference between the prices in power exchanges (EUR/MWh)	Average prices of CBTCs (EUR/MWh)	The difference between the prices in power exchanges (EUR/MWh)	Average prices of CBTCs (EUR/MWh)
2011	6.08	1.25	12.80	13.99	18.88	15.24
2012	10.55	6.08	20.66	16.86	31.21	22.94
2013	5.40	3.71	18.41	16.61	23.81	20.32
2014	7.66	6.02	9.92	11.51	17.58	17.53
2015	9.78	7.42	11.30	8.93	21.08	16.34

* As the Austrian market price the price in the German EPEX DE is used

Sources: ELES, websites of power exchanges

Table 15 shows the difference between the power exchange price and the obtained average prices of CBTCs on the relevant borders that separate the trading areas of exchanges. In comparison are used the prices of base load in trading for a day ahead in the individual power exchanges, i.e. the average price of all 8760 hours of trading per year. As the reference prices in the Austrian-German market, the prices for the trading area of Germany and Austria in the EPEX SPOT are used. From the data in the table the high degree of correlation between the price difference on the power exchanges and the obtained price of CBTCs. In most cases, the difference between the prices on the power exchanges is slightly higher than the obtained prices of CBTCs, which is reasonable since traders set for the CBTCs such prices that after trading an adequate profit remain. The only exception from this rule can be observed in 2011 and 2014 at the Slovenian-Italian border when the obtained average prices of CBTCs were higher than the price differences in power exchanges. This deviation may be due to market coupling that has been carried out at this border since 1 January 2011. In the average difference between prices on both markets are included the hours in which the price in the Slovenian market

was higher than in the Italian, and as well the hours in which the price in both markets was the same. During these hours the CBTCs were, due to the efficiency of market coupling, allocated in the direction from Italy to Slovenia, or were in direction from Slovenia to Italy utilized only partially. On the other hand, in cases when the price in the Italian market was higher, they were fully utilized. This may lead to the fact that the average annual price of CBTCs is higher than the average difference in price in power exchanges. On the borders with explicit auctions such anomalies normally do not occur, which can be contributed to the speculations of traders, who offer s lower price for CBTC rather than stay out of business or have losses because of possible reduced price differences.

The access to CBTCs consists of two phases. The first phase is the allocation of the right of their use while the second is the nomination of the actual use. In the case of explicit auctions, these are two separate procedures, while in the case of implicit auctions (market coupling) obtaining of capacity automatically brings its nomination for both central counterparties. A network user who obtains CBTC in an explicit auction needs to nominate it to the TSO within the specified deadline. The network user can decide to use the whole CBTC, part of it or not to use it at all. In the latter case, the rule "use-it-or-sell-it" applies for the capacities obtained in yearly and monthly auctions, which means that the network user sells unused capacity back to the TSO who sells it in an auction for the shorter period. The network user gets this capacity paid by the TSO at the price achieved in this auction. For the capacities obtained in explicit auctions for the day-ahead timeframe the rule "use-it-or-lose-it" applies, which means that the market participant pays the whole capacity obtained in the auction at the achieved price, irrespective of whether this capacity is used or not. Because of the above-mentioned differences in prices, in 2015 the largest share of CBTCs utilization rate was at the border from Austria to Slovenia and from Slovenia to Italy. The high utilization rate was also in both directions at the border with Croatia; however, the revenues from CBTCs were relatively low because of a large amount of available CBTCs. Relatively high utilization of the direction from Slovenia to Croatia was the result of the fact that the half of the production in the nuclear power plant Krško belongs to Croatia. The use of CBTCs for all border in the period from 2012–2015 is shown in Table 16.

Table 16: Utilization rate of CBTCs in the period from 2012–2015

	Utilization rate of CBTCs (%)			
Border/Year	**2012**	**2013**	**2014**	**2015**
SI-IT	94	96	91	87
IT-SI	8	7	9	3
SI-AT	11	28	16	12
AT-SI	92	75	92	96
SI-CRO	67	49	58	46
CRO-SI	35	54	33	36

Source: ELES

A comparison of the utilization rate of CBTCs at the individual borders show that the direction from Austria through Slovenia was the most interesting one; therefore, the CBTCs in this direction were the most utilized. Since the Austrian-Slovenian border is used for the transit to and from the countries of the Western Balkan, situations in these countries during the years of favourable hydrological conditions were slightly changed in comparison with most of the remaining years. Such conditions were in 2013 when an increase in transits from Croatia to Austria was recorded. That is was the utilization rate of CBTCs from Austria to Slovenia is lower than in other years, and higher in the opposite directions. For the same reason in 2013, the higher utilization of CBTCs in the direction from Croatia to Slovenia and lower in the opposite direction can be observed. In the period 2012–2015, a gradual decline in the utilization rate of CBTCs from Slovenia to Italy can be detected. This is mainly due to a gradual decrease in prices in the Italian market because of new production facilities in Italy, with a predominance of units using RES. Since 24 February 2015, the lower utilization rate is also a consequence of the extension of market coupling. Since then, the Italian market has been in the west coupled with French market. With this market the Italian market has relatively strong transmission capacities, and because of the fact that the French market is characterized by a large share of electricity production with low marginal costs (nuclear power and production from RES), it often happens that the CBTCs at French-Italian border are fully utilized, and so the price in the Italian market is reduced to the extent that all CBTCs at the Slovenian-Italian market can no longer be used.

3.2.5 Ensuring compliance with energy legislation

In accordance with the Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC (hereinafter referred to as Directive 2009/72/EC) the Energy Agency has to provide for the implementation of binding decisions of ACER and the European Commission, and in decision-making processes ensure the compliance with the provisions of Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003 (hereinafter Regulation 714/2009).

After the completion of the process 2014, the Energy Agency at the beginning of the year issued a decision on the certification of the electricity TSO.

In accordance with Article 65 of the Energy Act, the Energy Agency monitors the compliance in relation to the requirements of Articles 60, 61, 63 and 64 of the Energy Act. The Energy Agency must react to any violation of the legislation. In accordance with Article 71 of the Energy Act the Energy Agency monitors if the TSO complies with the requirements set in Articles 60, 61, 63 and 64. As soon as the electricity TSO is aware of a reason that constitutes a violation in relation to the requirements referred to in Articles 60, 61, 63 or 64 of the Energy Act, it must notify the Agency and take all measures within its power to eliminate the reason. The electricity TSO must also notify the Energy Agency of any planned transaction that might require a re-examination of the compliance with the requirements referred to in Articles 60, 61, 63 or 64 in accordance with Article 66 of the Energy Act or if the request comes from the European Commission, the Energy Agency must initiate the procedure for testing the conditions for the certificate.

In 2015 no violations of Articles 65 or 71 of the Energy Act were established.

In the process of issuing approval to the rules of allocation and use of interconnections the Energy Agency controls the compliance with the provision from Annex 1 to Regulation (EC) 714/2009 and in 2015 issued to the electricity TSO the approvals to the Allocation Rules for Forward Capacity Allocation, Allocation rules for long-term capacity, Shadow allocation rules, Rules for Intraday Allocation for Slovenian-Italian border, and Rules for Daily Capacity Allocation on borders of CEE region and borders Croatia-Hungary and Croatia-Slovenia.

In accordance with Article 4 of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (hereinafter referred to as Regulation (EU) 2015/1222 requires that each Member State, which is with electricity connected with the trading area of other Member State, must ensure that one or more nominated electricity market operators are designated (hereinafter referred to as NEMO) to perform tasks related to single day-ahead or single intraday market coupling. The Energy Agency in 2015 received an application of BSP Regional Energy Exchange to be designated as NEMO. During the process was determined that the applicant meets all the requirements to be designated as NEMO under Article 6 of Regulation (EU) 2015/1222, therefore it was designated as NEMO to perform tasks related to single day-ahead or single intraday market coupling in the Republic of Slovenia for the period of four years.

The Energy Agency was also monitoring the exercising the implementation of EU regulations concerning the internal electricity market, as well as whether the electricity companies fulfil the obligations arising from European legislation. No breaches of the legislation were found.

3.3 Promoting competition

In the following chapters we describe level of competition in retail and wholesale electricity markets. The Energy Agency is actively monitoring developments in prices (weighting factors, price trends, the impact of liquidity on prices, etc.), market transparency (access to information about prices, implementation of REMIT), and market efficiency (openness and competitiveness). The Energy Agency analysis the situation and implement appropriate measure within their powers in order to eliminate current barriers for the development of competition. By encouraging a competition the market strengthening is ensured, and that is for the benefit of the final consumers of electricity.

3.3.1 Wholesale market

Participants of the electricity wholesale market are producers, traders and suppliers of electricity. They trade on the basis of closed contracts, in which the quantity and the time profile of supply of contractual volumes of electricity are set in advance, so that the prices do not depend on the actual realization of the contracts. Any difference between the volumes of the closed contracts and actual realization of the volumes is subject to imbalance settlement. The wholesale market participants conclude their business by the bilateral transactions or at the exchanges in Slovenia and abroad. Power exchanges provide their market participants with Day-ahead and Intraday trading, for the purpose of balancing of the system or with forward trading, which usually cover longer periods of time than one day.

The activity of the electricity exchange in the Republic of Slovenia is being carried out by BSP, Regional Energy Exchange, d.o.o. In 2015 the company BSP performed the following services for traders of electricity:

- continuous trading within intraday: transactions are concluded in the trading platform between market applications throughout the course of trade, and concluded on the basis of the price/time priority criterion (when the supply of and demand for electricity products are met. For each product several transactions at different prices can be concluded;
- auction trading for day ahead: market participants anonymous submit their bids (supply and demand) into the trading platform and with that create a joint bid book, the structure of which is not available to market participants. After the completion of the bidding process the trading platform algorithm calculates the marginal price at which all transactions for each product are settled.

In intraday market trading takes place from one hour before the start of electricity supply, and at auctions trading for day ahead a day before the start of electricity supply and it runs to 12 a.m. Trading on the Slovenian Day-ahead market is performed under the framework of SI-IT market coupling, which means a use of implicit auctions for allocation of CBTCs for day ahead; as the input parameter in the exchange of offers between two or more power exchanges the available CBTCs and supply and demand curves of individual power exchanges are used. The project of market coupling between Slovenia and Italy in February 2015 joined up with the European day-ahead market. With this project the BSP fulfilled the requirements of the EU for day-ahead market coupling.

For both market segments the process of registration in the system of accounting and financial settlement is also possible (OTC clearing). OTC clearing is defined as the bilateral exchange of trades concluded outside the exchange and the registration of those trades as OTC transactions on the BSP trading platform. The process of clearing and financial settlement starts after confirmation of a transaction between a trader and a buyer of electricity in the trading platform for continuous trading.

In intraday market the standardized products are used: Base, Peak, Hourly and 15-minute products, and non-standard products (at least two consecutive identical standard products within the same day); at auctions trading for day ahead the trading with standardized hourly products is possible.

Borzen, the Slovenian Power Market Operator, is mandated to record all the closed contracts on an organized market. Thus, Borzen supervises the agreed contractual obligations in which electricity is bought or sold in Slovenia or is transferred across the regulated area. This includes the recording of all contracts between members of the balance scheme; all export and import closed contracts and closed business transactions on the exchange. In addition, the organizer of the market in the form of operational schedules of production and consumption keeps records of the contracts between the suppliers, the consumers and electricity producers.

3.3.1.1 Electricity prices

The Energy Agency monitors the level of wholesale prices in Slovenia and on relevant markets that affect prices in Slovenia. Information on wholesale prices are available on the websites of power exchanges, as well as from providers of analytical services and market information.

Electricity prices in power exchanges in Slovenia and in foreign markets

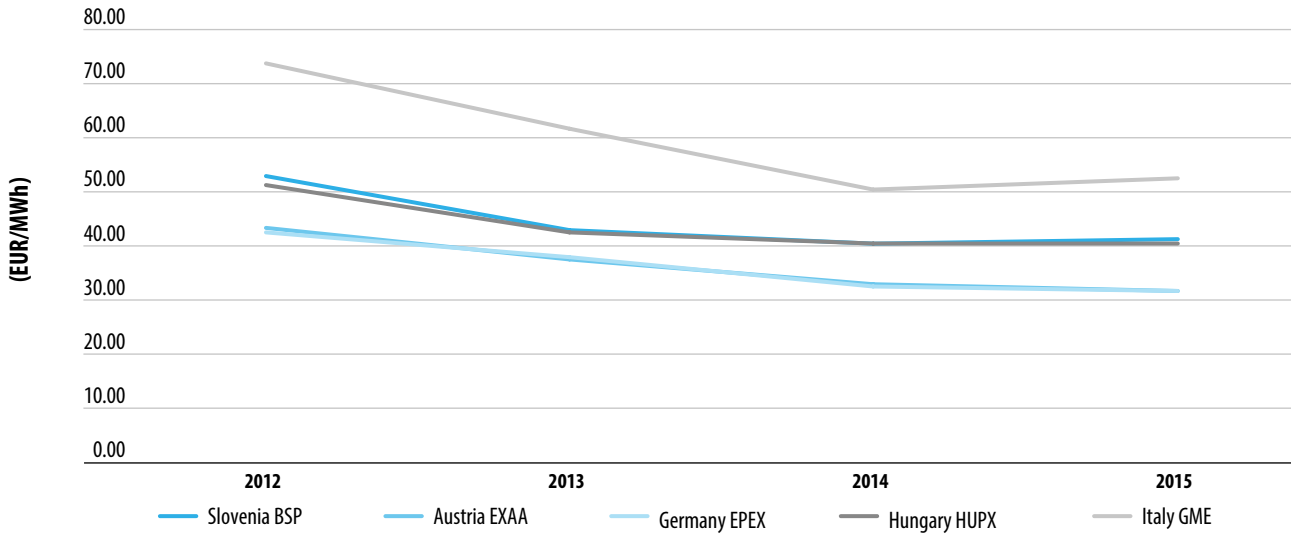
Electricity prices in power exchanges across Europe are subject to major fluctuations. Because electricity cannot be stored, the electricity market is faced with a number of disparities between supply and demand. The Slovenian power market is a part of the Italian, South-East and Central-East European regions. This means that adjoins two very liquid markets (Italian and Austrian-German

market), and very fragmented markets of South-East Europe which are in terms of power trading very non-transparent.

Due to high electricity production from RES, in recent years the prices of electricity on power exchanges in Slovenia and neighbouring countries are decreasing. In 2012, the average Base price on power exchange in Slovenia was 53.1 EUR/MWh, and in 2015 only 41.4 EUR/MWh. The same situation stands for neighbouring power exchanges, which can be seen from Figure 26.

A price comparison shows that the prices are almost identical on the Austrian and German power exchanges, and where are also the lowest among the observed exchanges. Almost identical is the price movement on Slovenian and Hungarian power exchanges. Prices in Italy are among the highest in Europe.

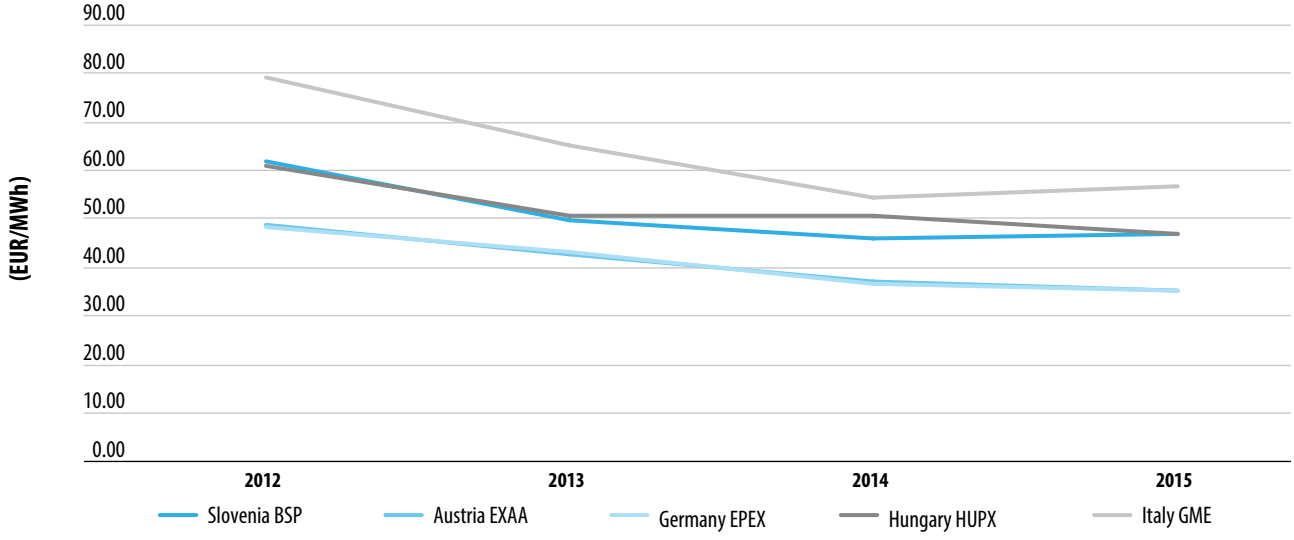
Figure 26: Movement of Base price in day-ahead market in Slovenia and in foreign exchanges in the period 2012–2015



Source: Montel

Movements of Peak prices are almost the same, and also the correlation between the exchanges is similar. In 2012, the price of Peak in Slovenia was 61.8 EUR/MWh, and in 2015 46.9 EUR/MWh. The same is also happening on foreign power exchanges.

Figure 27: Movement of Peak price in day-ahead market in Slovenia and in foreign exchanges in the period 2012–2015

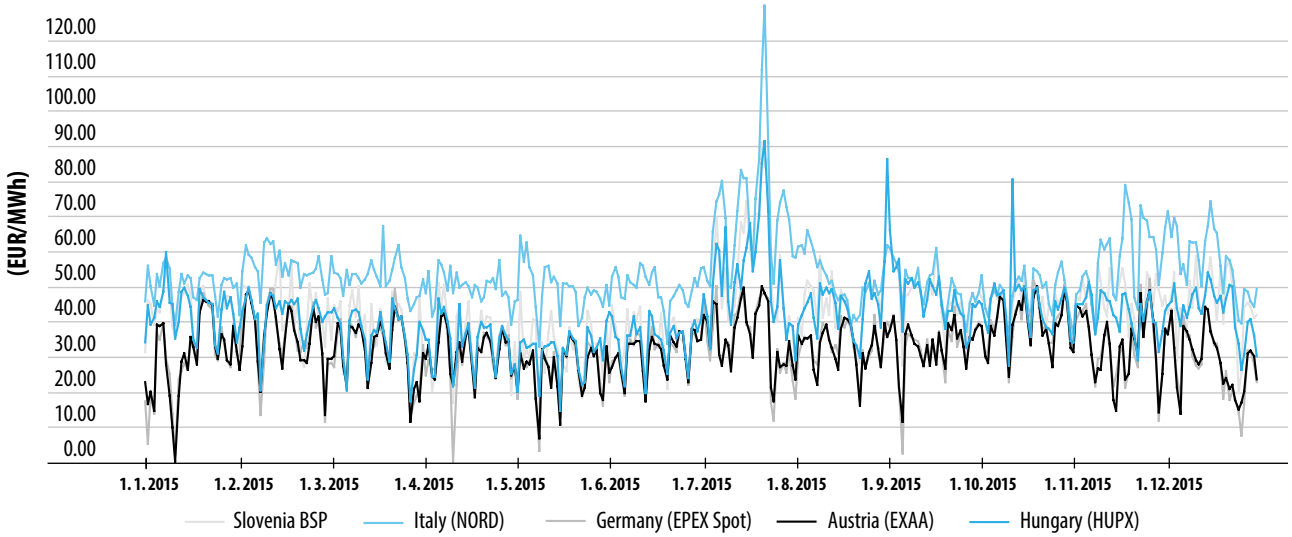


Source: Montel

The highest price for a day ahead was on the Slovenian power exchange recorded in July because of decreased CBTCs in the direction from Austria to Slovenia and from Slovenia to Italy. Higher price reflects higher demand for energy in the South-East Europe. We can see that also in Figures 28 and 29, which show an increase in Base as well as Peak price, mainly on the Italian, Hungarian and Slovenian power exchanges.

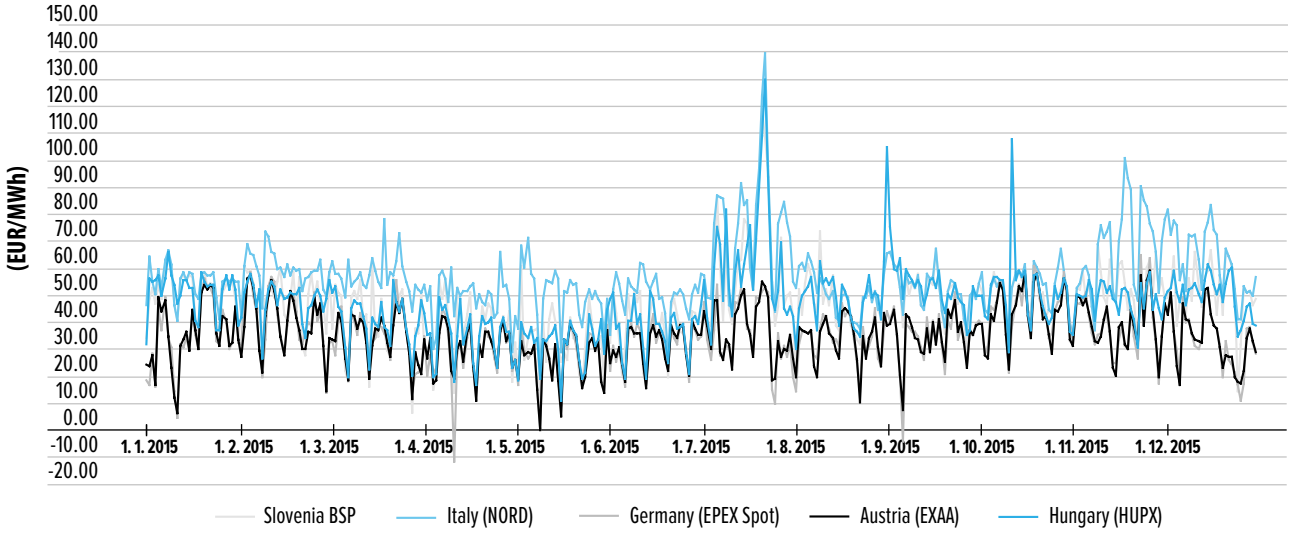
The lowest price for day-ahead trading was reached in May due to high production from RES, warm weather and consequently low electricity consumption. Low price in May was also a consequence of negative prices in Germany.

Figure 28: Movement of Base price in Slovenia and on the neighbouring power exchanges in 2015



Sources: Websites of power exchanges

Figure 29: Movement of Base price in Slovenia and on the neighbouring power exchanges in 2015



Sources: Websites of power exchanges

When comparing the prices between the Slovenian power exchange and neighbouring ones, we can see that the electricity price on BSP reflects price movements in neighbouring markets.

From the market coupling point of view, analysis between BSP and GME is interesting, which is shown in Table 17. Market price in Slovenia (BSP) was in general lower than in Italy (GME); it was higher than in Italy in less than one percent of hours.

Table 17: Price comparison between BSP in and GME

Description	Share of hours
Lower price on BSP in comparison to GME	64.49%
Lower price on GME in comparison to BSP	0.33%
Same price on BSP and GME	35.18%

Sources: BSP, GME

In 2015, the electricity produced from RES and CHP, included in the support scheme, amounted to 8.4% of all electricity production in Slovenia; the year before this share was 6.7%. Within the Support Scheme (feed-in support scheme) power plants owners have the option of choosing between the operating premium (operating support) and guaranteed purchase. If the producer chooses operating premium electricity can be sold freely on the market, and if he chooses guaranteed purchase, the electricity is transferred to a separate balance group – Eco group operated by Centre of Support (Borzen). This electricity is sold by the Centre of Support. In 2014 and 2015, a part of this electricity was sold on annual auctions and a part on BSP. The market price of electricity included in the Support Scheme is formed on the individual level on the market, auctions, and power exchanges. At calculation of the market price of electricity from the support scheme three options were taken into account. The estimated market price derives from the average of achieved prices on an annual level, achieved price at the auction, and average hourly price on BSP in an individual year. Prices, which are taken into account, are weighted by the amounts of individual items. It should be noted that in 2015 almost 72%, and in 2014 almost 74% of electricity were sold individually within operating premium. In the calculation of the estimated market price to the total price a price, individually formed on the market, contributes an essential part. The estimated market price of electricity, which is included in the support scheme, is together with the average hourly price on BSP for 2014 and 2015 presented in Table 18. The calculation showed that in both observed years the estimated market price higher that price achieved on the power exchange.

Table 18: Comparison of the estimated market price of electricity included in the support scheme on BSP

Year	The estimated market price of electricity included in the support scheme (EUR/MWh)	The average hourly price on BSP (EUR/MWh)
2015	42.18	41.41
2014	43.58	40.43

Sources: Borzen, BSP

Emission allowances

By ratifying the Kyoto Protocol, the Republic of Slovenia, made commitments to reduce greenhouse-gas emissions in the period from 2008 to 2012 by average 8% per year in comparison with the base year 1986. Emissions' trading is one of the instruments for achieving this objective. With the implementation of the European Emission Trading System (EU ETS), the EU in 2005 included factories, electricity producers and other facilities causing greenhouse gases.

The EU ETS is now in its third phase, which will last by 2020. In this phase, individual companies can receive emission allowances for free, or at daily auctions of emission allowances. However, the share of free allocated emission allowances is linearly decreasing (80% in 2013, 30% in 2020), and the share of allowances sold on auctions is increasing (in 2015 was around 50%). All this affects the price of allowances, which has, compared to 2014, increased.

The system of trading with emission allowances includes the facilities with an input heat power of 20 MW, and, with respect to the energy sector, also the facilities with an input heat power of 15–20 MW.

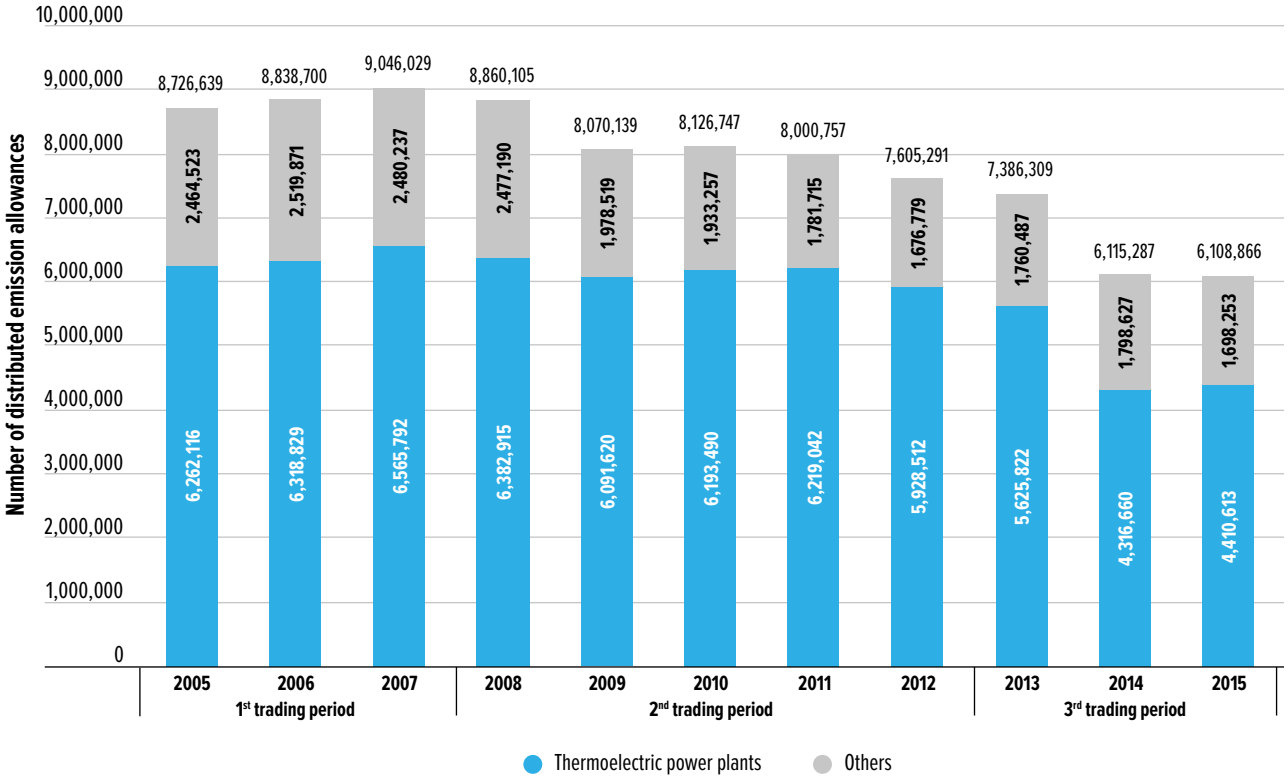
In accordance with the Environmental Protection Act from 2013, the operators of electricity production facilities, and carbon capture and storage facilities must from 2013 onwards buy all emission allowances. The Government has adopted an Ordinance on the list of operators of installations

emitting greenhouse gases, for the period 2013–2020. The ordinance contains the list of facilities operators:

- which are during this period entitled to free emission allowances;
- which are not entitled any more to free emission allowances (TPP Brestanica in TPP Trbovlje);
- which are excluded from the emission allowances system trading since they will carry out equal measures.

In the Figure 30 numbers of distributed emission allowances for all three trading periods between 2005–2015 are introduced:

Figure 30: Number of distributed emission allowances in the period 2005–2015

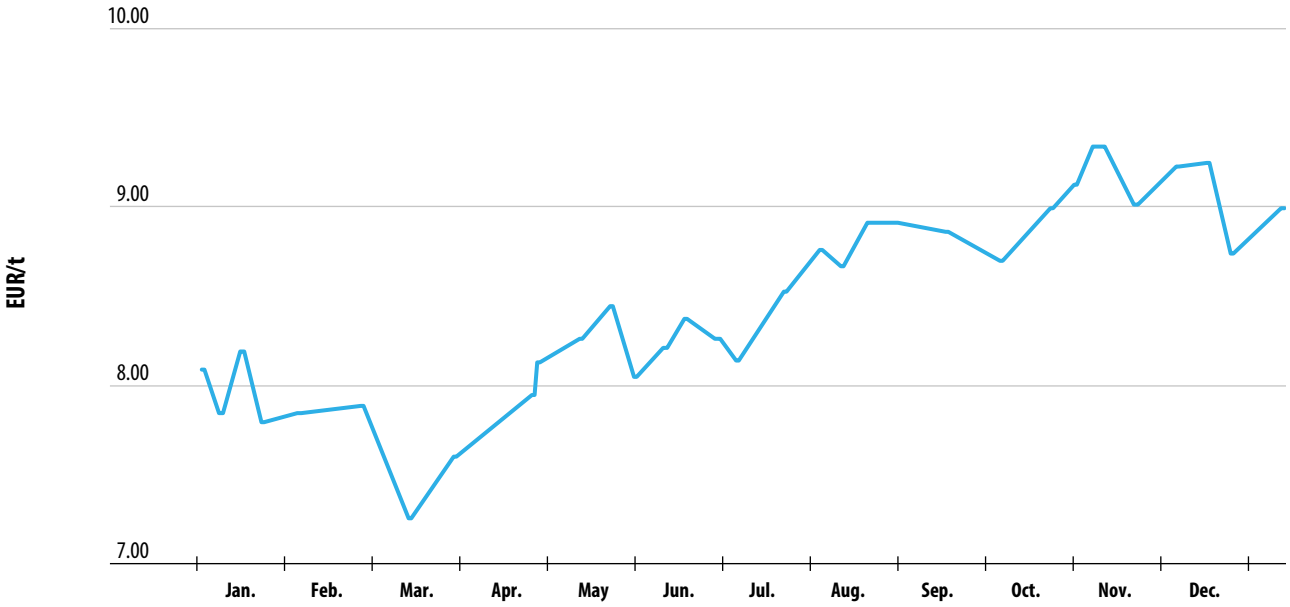


Source: Environmental Agency of the Republic of Slovenia

In 2015, the number of distributed emission allowances in comparison to 2014 decreased again. This is due to the fact that the EU has, because of climate changes, committed itself by 2020 to achieve following targets: 20% cut in greenhouse-gas emissions, 20% of EU energy from renewables, 10% share of biofuels in transport fuels, and 20% improvement in energy efficiency. In 2015, thermal power plants in the third trading period handed over for 4,410,613 emission allowances, which was 72% of all emission allowances distributed in Slovenia. The share increased in comparison to 2014 despite the commenced winding-up proceedings of Thermoelectric power plant Trbovlje.

Figure 31 shows the price of emission allowances on the EEX (purchase in 2015 for 2016).

Figure 31: Trends of the emission allowances price on EEX in 2015



Source: EEX

The price varied between 7.20 and 9.50 euros per tonne of CO2; in comparison with 2014 the price increased by 13%. The main reason for the increase in the price of emission allowances is the regulated reduction of supply and reduced number of free allowances. Lower prices of oil, gas, coal an electricity had no effect on the price of emission allowances.

In accordance with Decree on environmental tax on carbon dioxide emissions the environmental tax is paid for air pollution with CO2 from fuel combustion. This levy is a revenue budget of Slovenia.

3.3.1.2 Market transparency

Regulation (EU) No 1227/2011 of the European Parliament and of the Council on wholesale energy market integrity and transparency (hereinafter referred to as REMIT) is the key foundation for ensuring price transparency in the wholesale electricity market. The Energy Agency in accordance with REMIT monitors the level of the wholesale electricity prices transparency, and ensures that electricity companies meet the requirements related to market transparency.

The establishment of well functioned and transparent wholesale market is not self-evident but demands the cooperation of all market participants. A coordinated approach of all participants is important to achieve the intended goal. A coordinated approach at the EU level can be identified in REMIT. This regulation constitutes a comprehensive framework for monitoring and control of the EU electricity and gas markets. The framework consists of three major parts: prohibition of market manipulation and trading on the basis of inside information, a requirement for effective and timely disclosure of inside information, and appropriate legislative framework for market monitoring.

Trading on the basis of inside information and market manipulation is under REMIT prohibited. Any violations of this Regulation shall be fined. Any person professionally arranging transactions in wholesale energy products who reasonably suspects that a transaction might breach the prohibition of market manipulation or trading on the basis of inside information must in accordance with Article 15 of REMIT inform the NRA without further delay. In the case of Slovenia, this is the Energy Agency. The notification is carried through the ACER Notification Platform[1]; in any such case, the NRA notifies ACER accordingly. If the breach has a cross-border impact, ACER notifies the relevant NRAs of Member States. In 2015, the Energy Agency did not receive any notification of a suspected breach of trading on the basis of inside information or market manipulation in the wholesale electricity and gas market. Publishing

[1] https://www.acer-remit.eu/np/str

of inside information includes fundamental data that should be published by the participants of the wholesale energy market. Data include information on the capacity and use of facilities for production, storage, consumption or transmission of electricity or natural gas or related to the capacity and use of LNG facilities. ENTSO-E and ENTSO-G in accordance with REMIT[2] send this information to ACER on behalf of market participants.

Market monitoring under REMIT is comprehensive and includes the monitoring of the entire European wholesale electricity and natural gas market. The attention is focused on all wholesale energy products, irrespective of whether they are traded on organized market places or bilateral. For monitoring the trading the information on trader must be available. Registration of all market participants is necessary. This is one of the most important tasks of the NRAs. Market participants entering into transactions which are required to be reported to ACER must register with the NRAs in the Member State in which they are established or resident or, if they are not established or resident in the Union, in a Member State in which they are active. The Energy Agency started with the registration of market participants already in 2014 and continued in 2015. In 2015, the final procedures for the establishment of the national register of market participants were under way. The integration of web services for acquisition and validation of data on market participants was in the final stage. This kind of solution delivers added value to market participants and the Energy Agency since user experience is improved, and at the same time the adequate quality of data is guaranteed, which eliminates the need for the manual checking and correction of data. Register, among other things, provides for the automatic exchange of information on market participants with a European Central Register CEREMP[3] managed by ACER. At the beginning of March 2015, the Energy Agency permitted the trial operation of the application to enable persons liable for registration the effective preparation for the registration procedure; with that the Energy Agency received feedback. The registration phase formally began on 16 March 2015 in accordance with REMIT.

In 2015, the registration was done by 24 wholesale electricity and natural gas market participants. Most of them are active in the electricity market. Since the reporting on transactions in organised market places began on 7 October 2015 and by this date the registration had to be done only by the participants active in organised markets, it was expected that not all participants would register. Most of other participants are active in the wholesale natural gas market and enter the bilateral contracts, which have to be reported since 7 April 2016. These participants have to be registered by this date or by signing the first bilateral contract after this date, or by 6 July 2016, which is the dateline for reporting on transactions signed before the start of reporting and to this date have not been completed. The number of registered participants in 2015 is not final.

Reporting on contracts concluded in the wholesale energy markets by registered market participants is the obligation of the participants. Reporting to ACER is implemented through registered reporting mechanisms or RRM. The registration of RRM is done at ACER, which is also publishing the list of currently registered reporting mechanisms. Market participants can choose a third party handling their reporting as RRM. To avoid duplicate reporting, the data are submitted only to ACER.

For the purpose of monitoring the Slovenian market, the Energy Agency will be receiving the data on transactions and fundamental data from ACER. The data and relevant information on abuses demand required the establishment of an information system that provides a very high level of security. Therefore, the Energy Agency in 2015 started an audit of the data security management system and indirectly updated, or upgraded the information security policy. It has also started with the preparation of IT and physical infrastructure, which ensures the confidentially, integrity and availability of data and their protection under REMIT. The measures taken in this area, reduce the sensitive data and information exposure risks to the level set by REMIT. With these measures, the Energy Agency is placed among the European regulators, which are expected to be the fastest to ensure all the conditions for the continuing collection of data on transactions.

The implementation phase of monitoring the wholesale energy market at a national level was well underway, but not yet fully completed. By the start of the implementation of real-time market monitoring, some missing procedural layouts on the European level have to be sorted out as well as technical and organizational adjustments of the Energy Agency and ACER. This includes the establishment of support mechanisms for continuous monitoring of the wholesale energy market. The continuous monitoring under REMIT was not yet carried out in 2015. All the investigations and surveillance activities in 2015 were based on external notifications and information. If the Energy Agency's analysis, notification, or external information indicated a suspected breach under REMIT, the Energy Agency

2 Commision Implementation Regulation (EU) No 1348/2014 of 17 December 2014 on data reporting implementing Article 8(2) and Article 8(6) of Regulation (EU) No 1227/2011 of the Europeam Parliament and of the Council on Wholesale energy market integrity and transparency OJ L 363 of 18 December 2014, p. 121

3 https://www.acer-remit.eu/portal/european-register

would collect data and start an investigation ex officio. In 2015, the Energy Agency did not address any violations of REMIT.

The control over the fulfilment of the obligations to publish inside information under Article 4 of REMIT continued. By the end of the year, the procedures have not yet been completed.

Implementation of REMIT is one of the most challenging tasks of the Energy Agency since its foundation. The current situation is in compliance with internal plans and capability, as well as ACER expectation; organisations are cooperating excellently since REMIT came into force.

Fulfilling the requirements for effective and timely publication of inside information, which is one of the three basic elements of the regulatory framework for the monitoring and control of the European wholesale electricity market, is in more details regulated by the Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council (hereinafter referred to as Regulation 543/2013). This Regulation lays down a set of data to be made available to market participants, and the deadlines for their publication. The data that have to be published are relating to generation and consumption of electricity, including the information relating to the unavailability of transmission infrastructure, information relating to the estimation and offer of cross zonal capacities, Information relating to congestion management measures including information on balancing reserves and imbalance prices. Regulation 543/2013 determines that all required data should be published by ENTSO-E on a central information transparency platform.

ENTSO-E established the platform on 5 January 2015. Before that, ENTSO-E was already publishing most of the required data on the platform, which was on its own initiative set up in 2011. On the new platform, ENTSO-E provided the access to historical data for the period 2011–2014. The Energy Agency is responsible for the implementation of Regulation 543/2013, therefore it regularly monitors publication of data on the platform, especially those that are related to the Slovenian electricity market and power system.

3.3.1.3 The level of market effectiveness

The Energy Agency monitors the effectiveness of wholesale markets in terms of liquidity, competitions and market integration. In the next chapter are presented the indicators used for monitoring the level of market effectiveness.

Bilateral trading

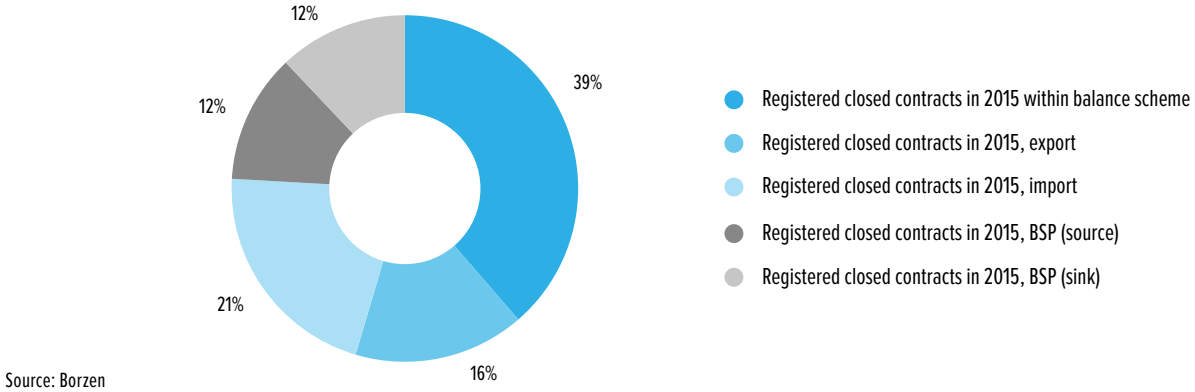
In 2015, a total of 112,491 closed contracts and operational forecasts in the total amount of 78,935,614 MWh. In comparison with the previous year, the number of recorded closed contracts and operational forecasts increased by 0.4%, and the total amount of electricity from recorded closed contracts decreased by 4.3%.

The market operator registered 52,143,848 MWh of sold or purchased electricity through the closed contracts.

At all transactions that are concluded at BSP, the exchange plays the role of the central counterparty, where the concluded transaction is recorded both as quantity bought (source) and quantity sold (sink). These quantities are together with other recorded quantities presented in Figure 32.

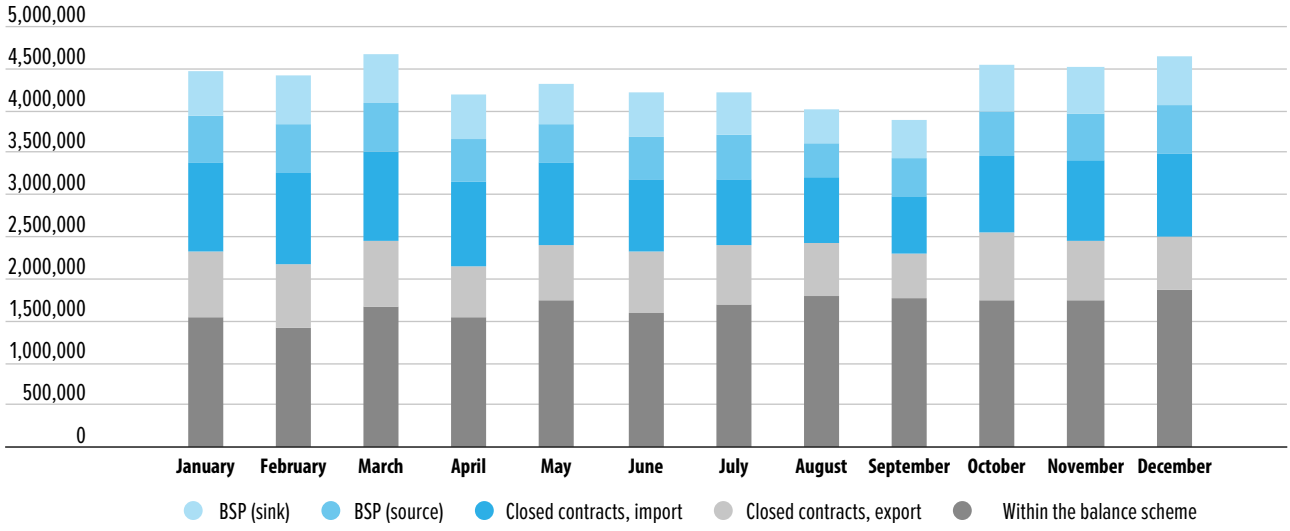
In comparison with 2014, the volume of electricity from closed contracts was lower by 3.2%, and the volume registered through operational forecasts was lower by 6.4%, mainly because of lower production. The trading activity among participants slightly decreased. From the comparison between the number of registered closed contracts and the volume of electricity from these contracts is evident, that the total annual volume of registered closed contracts in the last three years slightly decreased, however, the number of reported closed contracts in the period 2011–2015 increased by almost 12%.

Figure 32: Structure of registered closed contracts in 2015



Source: Borzen

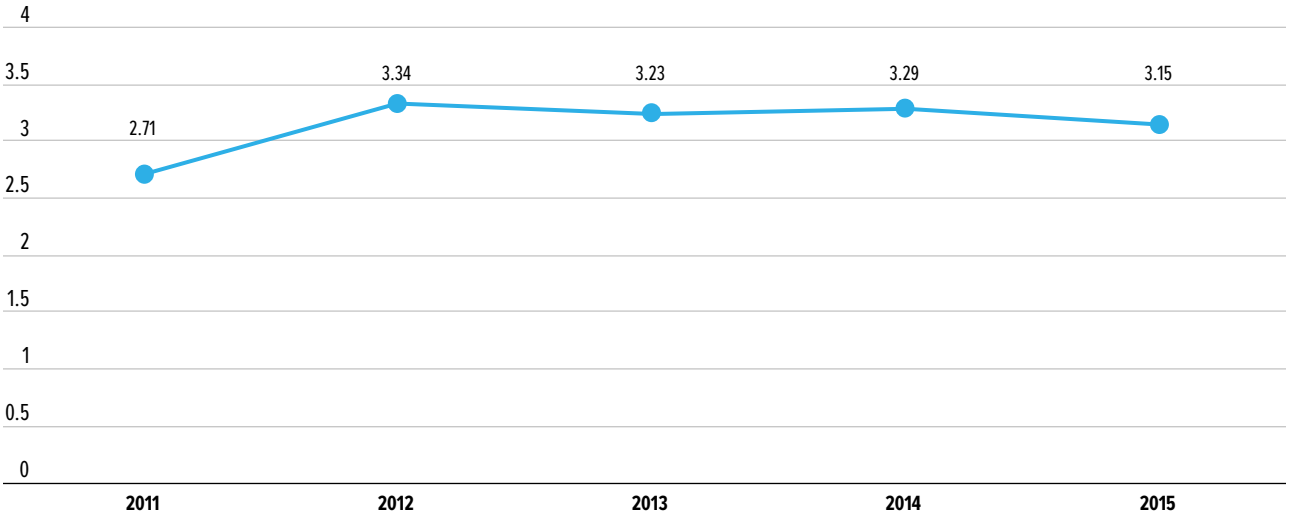
Figure 33: Volumes of sold or purchased electricity through closed contracts by months



Source: Borzen

Market liquidity is the ability to purchase or sell a product – like electricity – with low transaction costs and without causing drastic changes in a product price due to transactions costs. High liquid markets are developed markets in which easy buying and selling of energy at reliable prices are possible. The condition for market liquidity is a high degree of transparency with a large number of participants entering into a large number of transactions. Due to a large volume of trades, prices of products are stable and are not substantially altered in case of smaller transactions. Churn ratio is one metric used to assess market liquidity. It shows how often a unit of electricity is traded before it is delivered to end consumers. Churn ratio is for the Slovenian wholesale electricity market shown in Figure 32. Churn ratio is calculated by dividing total traded electricity volumes from the closed contracts by the total amount of electricity demanded in Slovenia in 2015. Taking into account the volumes from closed contracts in the calculation are included the quantities traded on the BSP as well as the quantities traded in the bilateral market. In the observed five-year period, in years from 2011 to 2015, the biggest change in the index is noticed in 2012. In that year the consumption stayed almost the same as in 2011, while in 2012 the total amount of traded electricity increased. The index increased from 2.71 to 3.34. From 2012 to 2015, the index remained above 3. A slight decrease was noticed in 2015, as a consequence of increased consumption and smaller total traded volume in 2015 in comparison with 2014.

Figure 34: Churn ratio by years



Source: Borzen

Power exchange market in Slovenia

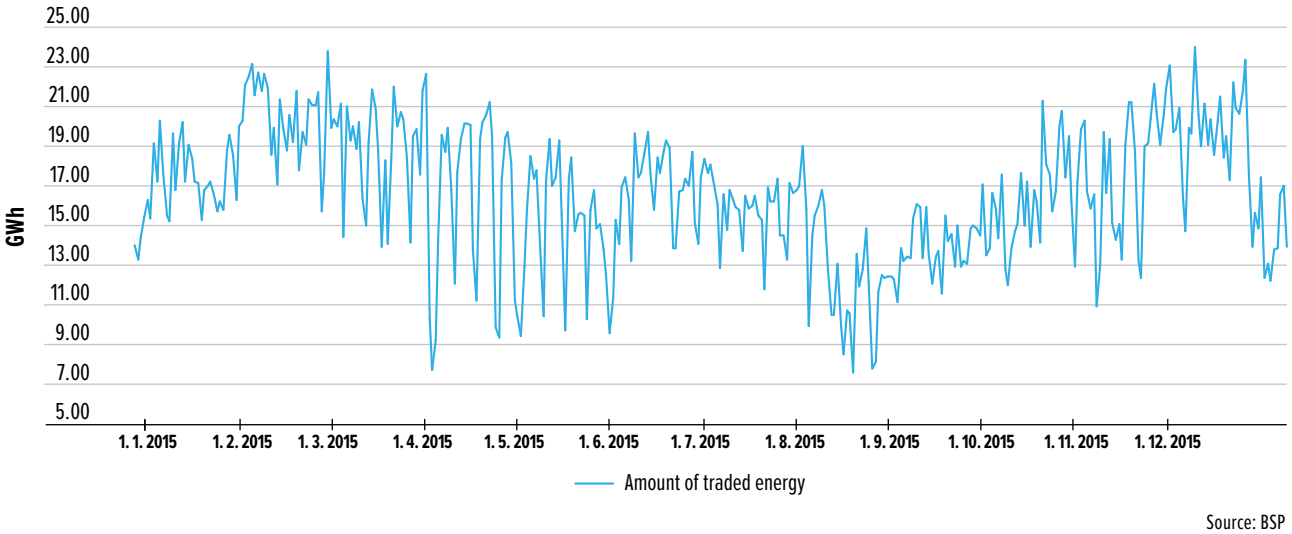
Day-ahead market

Trading in day-ahead market is conducted on the Slovenian power exchange BSP. The volume of trading for day ahead is apart from number of participants mainly influenced by available CBTCs at SI-IT border; capacities are allocated through implicit auctions under the mechanism of market coupling.

The total volume of trading in day-ahead market in 2015 amounted to 6,071,966 MWh, which is 2.8% less than in 2014. The average annual price of Base-load product was 41.41 EUR/MWh, and the average price of Peak-load product was 46.87 EUR/MWh. At the end of 2015, in day-ahead market participated 36 market participants, 70% were foreign participants. On average, daily 28 participants were submitting their bids.

The highest monthly trading volume in 2015 was reached in March, when the maximum of CBTCs were allocated in the direction from Slovenia to Italy. As expected, the lowest trading volume was reached during summer, when the price in Italy was lower than usual because of low consumption and high production from RES, and which was reflected in lower allocation and utilisation of CBTCs in the direction SI-IT. The lowest trading volumes were recorded in August.

Figure 35: Electricity trading volumes in 2015



Source: BSP

Intraday Market

Trading in Intraday market is also conducted on the Slovenian power exchange BSP. Since in the intraday market we have not yet implemented market coupling with the neighbouring countries, the trading is conducted only within Slovenia. Within intraday market in 2015 a significant increase in number of bids and consequently concluded transactions was recorded. Thus, 569 transactions were concluded, 317 more than in 2014. However, the total volume of concluded transactions in intraday market in 2015 decreased in comparison with the previous year, and amounted to 20,754 MWh.

In 2015, 25 transactions were sent to financial settlement (OTC) in the total amount of 3715 MWh. In the Slovenian intraday market 15 market participants were involved, eight of them were domestic. On average, daily five participants were submitting their bids.

Balancing market

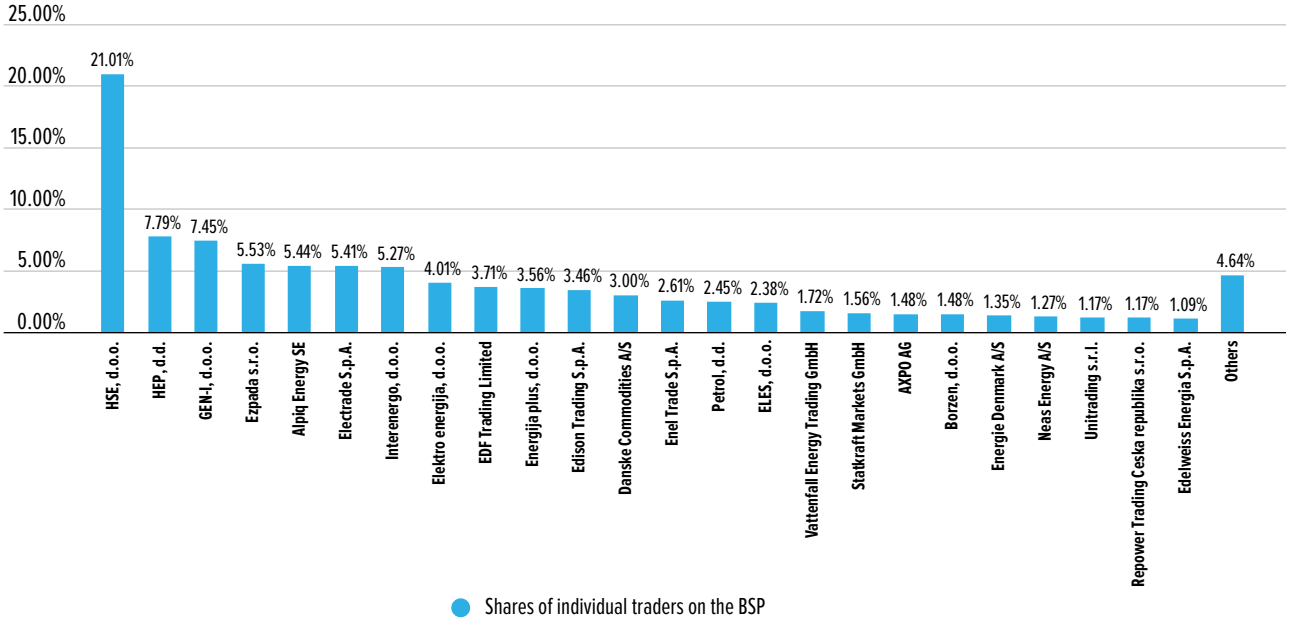
The electricity balancing market in Slovenia is organized by the market operator. The balancing market is a special market, which enables the TSO a transparent purchasing of energy for balancing the system. The TSO must at any time ensure the balance between the production and consumption of electricity in its control area, which is in the case of the Slovenian TSO, ELES company, the entire power system. For balancing the system, the TSO must have at any time at its disposal positive and negative energy for balancing. Under normal operating conditions for this purpose the leased reserve for secondary control of frequency and power is sufficient. In a case of larger positive or negative imbalances, the TSO on balancing market buys or sells electricity intended for the settlement of imbalances. With that, the TSO releases secondary positive or negative reserves and regain the necessary volume of reserve for the implementation of the secondary regulation. If we treat selling of energy as the purchase of negative energy, the balancing market can be regarded as the market with one buyer and a great number of bidders. In this context it should be mentioned that in case of major disruptions in the power system such as outages of production units or major interconnectors, the TSO has in the reserve the engagement of the leased reserve for tertiary control of frequency and power, which tends to be much more expensive than buying electricity on the balancing market. Trading on balancing market is carried out in a manner of continuous trading, which means that the transaction is concluded when supply and demand meet. For practical reason trading on balancing market is carried out together with intraday trading. The balancing market is under the authority of the market operator carried by the BSP SouthPool energy exchange, which also operates the intraday market. The same rules apply for both markets, subject to the principle that intraday trading ends one hour before the time of delivery and converts to the trading on the balancing market. One hour before the time of delivery the transactions between different balance group members are not possible since in balancing market must on one side at the conclusion of transactions (buying or selling) be always the TSO. In the balancing market, all members included in the Balance Scheme can through a platform participate in trading. Trading on the balancing market is carried out 24 hours a day, seven days a week, and at most one day in advance. Trading with hourly, 15-minute, base-load and peak-load products is enabled. It is also possible to trade with block products, which are defined by the participant of the balancing market and must include at least two consecutive hourly products within the same day or two 15-minute products for the delivery within the same day.

In 2015, in the balancing market, 3133 transactions were concluded in the total volume of 188,059 MWh. Out of these, 63,690 MWh represented the purchase of balancing energy, and 124,369 MWh represented the sale of balancing energy by the TSO. The highest volume of transactions was concluded with block products in the total amount of 98,316 MWh of electricity; the highest number of transactions, 1751, was concluded for hourly products. In comparison with the previous year, the volume of concluded transactions increased by more 138%, and the number of concluded transactions increased by more than 228%. In 2015, the highest price for the purchase of balancing energy reached 180 EUR/MWh, and the lowest for the sale of balancing energy –40 EUR/MWh. Apart from the TSO another seven members were involved in the balancing market. At the end of 2015, the balancing market had 38 members, two less than in 2014.

Market concentration

In 2015, the largest share with respect to the volume traded on the BSP had the company HSE with 21%, followed by HEP with 7.8% and GEN-I with 7.5%. The total share of the three largest traders on the BSP was 36.6%. On the BSP in 2015, all together 36 foreign and domestic companies traded. The Herfindahl-Hirschman index (HHI) was 796, which indicates a low concentration in the wholesale market.

Figure 36: Shares of the traders on the BSP with respect to traded volumes in 2015

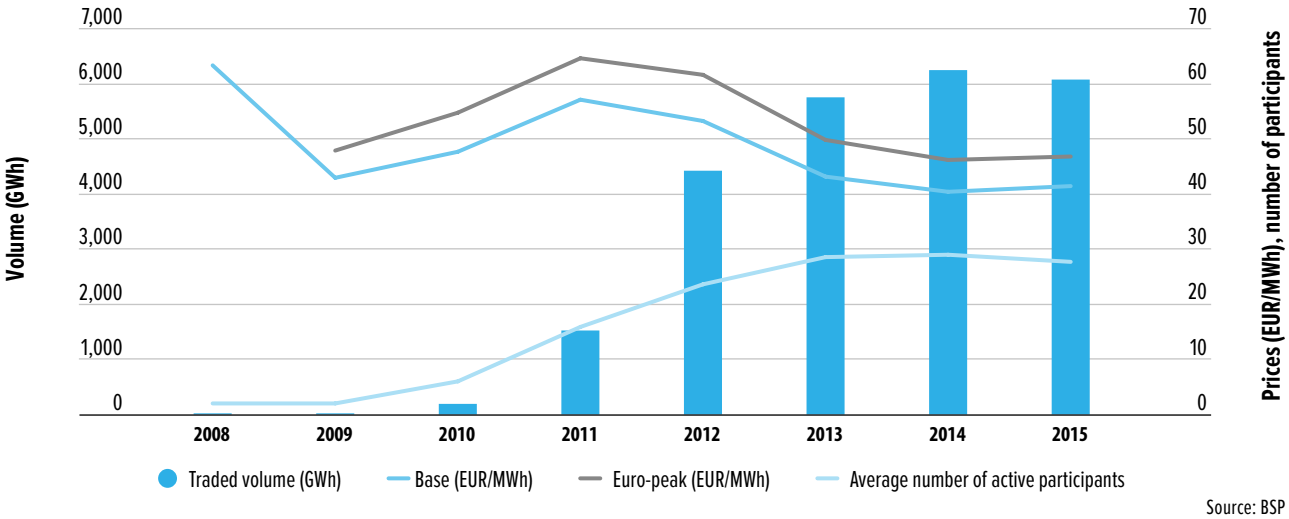


Source: BSP

Market coupling

Already in the beginning of 2011, the BSP, the Slovenian electricity TSO, market operator Borzen, the Italian TSO Terna and Italian market operator, which also manages the Italian power exchange GME started to cooperate in the project of market coupling on the Slovenian-Italian border, which enabled the implicit auctioning system for allocation of physical daily CBTCs on this border. In the text below we describe the situation on this border between 2011–2015. Market coupling was between 1 January 2011 and 23 February 2015 carried out by bilateral market coupling of Slovenia and Italy; and on 24 of February 2015, the SI-IT border became part of the interregional market coupling, which covers the area from Scandinavia to the Iberian peninsula and all north Italian borders. The introduction of market coupling had very positive impact on the Slovenian power exchange BSP, and also on the Slovenian market as a whole. As we can see in Figure 37, since the implementation of market coupling the trading volumes on BSP has constantly been growing, and with that the Slovenian market has gained a credible market index. In the same period, the number of active power exchange participants increased. Since the implementation of market coupling, we can notice a drop in energy prices, which however is not a direct result of market coupling but an increasing share of energy from RES with very low or zero marginal costs in the European common market that resulted in a significant reduction in electricity prices in most European countries.

Figure 37: Development in the Slovenian power market in the period 2008–2015



Source: BSP

Other key parameters related to market coupling in the period 2011 are presented in Table 19 and Figure 38.

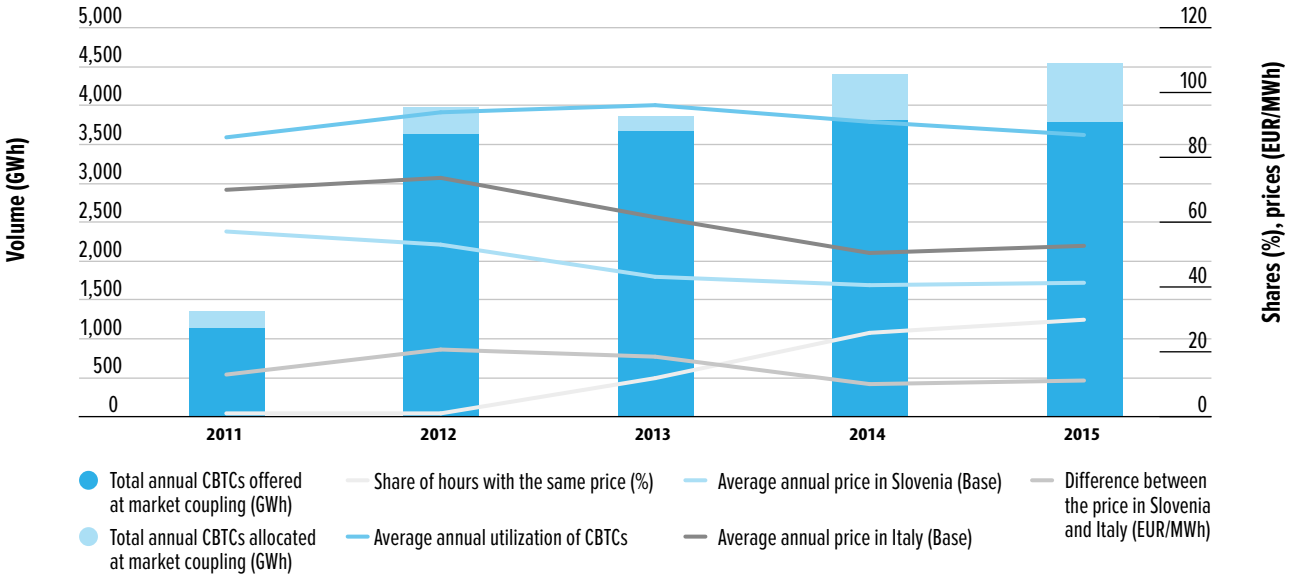
Table 19: The situation on the Slovenian-Italian border in the period 2011–2015

Year	2011	2012	2013	2014	2015
Total annual CBTCs from Slovenia to Italy offered at market coupling (MWh)	1,353,984	3,969,838	3,872,444	4,408,921	4,535,013
Total annual CBTCs from Slovenia to Italy allocated at market coupling (MWh)	1,132,441	3,641,607	3,681,987	3,820,554	3,794,713
Average annual price in Slovenia (EUR/MWh)	57.20	53.15	43.18	40.43	41.41
Average annual price in Italy (EUR/MWh)	70.00	73.81	61.58	50.35	52.71
Difference between the price in Slovenia and Italy (EUR/MWh)	12.80	20.66	18.41	9.92	11.30
Number of hours with the same price	55	54	1,007	2,288	2,622
Share of hours with the same price	0.63%	0.61%	11.50%	26.12%	29.93%

Sources: ELES, websites of power exchanges

Within market coupling on the SI-IT border in 2015 in the direction SI-IT was allocated 3,794,713 MWh out of 4,535,013 MWh offered CBTCs, which in terms of implicit allocation of CBTCs represents 83.68% utilization of daily available CBTCs. The average price of CBTCs in the direction SI-IT in 2015 amounted to € 17.07. In the direction IT-SI in the same period 92,861 MWh were allocated out of 5,778,139 MWh offered, which represented 1.61% utilization of daily offered CBTCs. In 2015, the allocation of CBTCs from the direction IT-SI remained at the same level as in 2014. The average price of CBTCs in the direction IT-SI amounted to € 11.03.

Figure 38: The situation on the Slovenian-Italian border in the period 2011–2015



Sources: ELES, websites of power exchanges

Table 19 and Figure 38 show that in the first year of market coupling offered volumes were significantly lower than in subsequent years. This is partly because of a lower share of CBTCs, which was in advance intended to the allocation for a day ahead, and even more because of the fact that traders in 2011 did not massively return the capacities acquired on annual and monthly auctions, as they have been doing since 2012. From 2012 onwards, we can observe relatively constant volumes of allocated CBTCs within market coupling in spite of a gradual increase in available capacity. This can be explained by the gradual reduction of price differences between the markets. That interpretation can be supported by the fact that since 2013 a number of hours with price convergence significantly increased; that means the hours with the same price in the Slovenian and the Italian market.

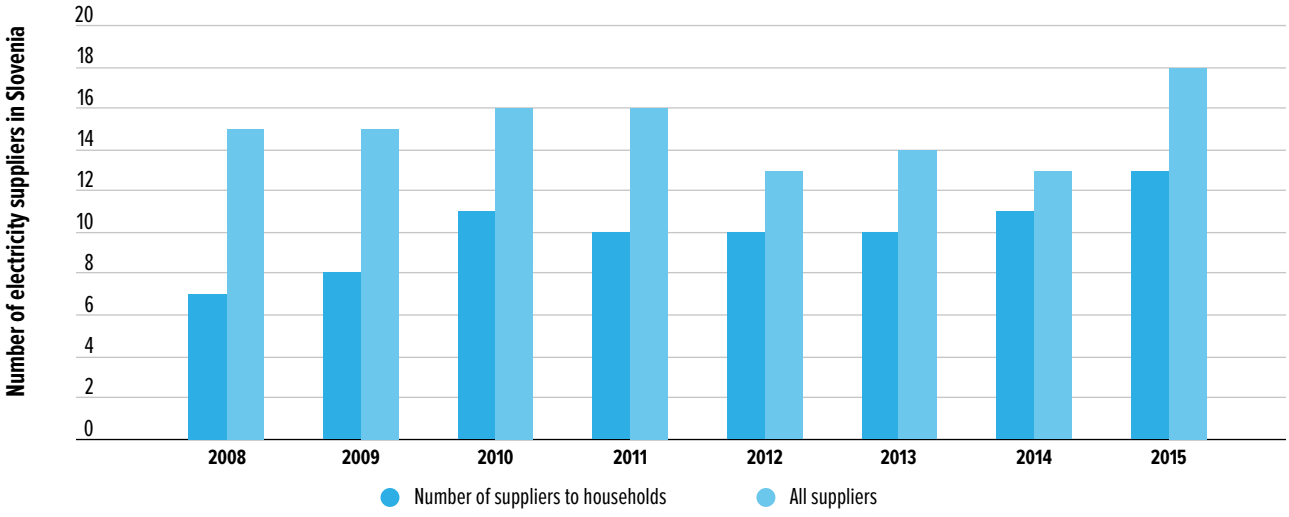
3.3.2 Retail market

In the retail market, suppliers and traders sign open contracts, in which the quantities of supplied electricity and the time profile of supply are not set in advance. Consumers pay for the supplied electricity according to actual consumption metered by the utility meter.

In 2015, in Slovenia 18 electricity suppliers were active; they supplied electricity to four consumers connected directly to the transmission system, closed distribution systems and 940,785 household and business consumers connected directly to the distribution system. At the end of 2015, 12.8 TWh of electricity were supplied to all consumers in Slovenia.

In 2015 some new suppliers enter the retail market, such as the companies RWE Ljubljana, Logo energija, HEP Energija, Energenti plus and Energija direct. Depending on the business model of each supplier, some supplied electricity only to household consumers, the other only to business consumers, or both. On 1 October 2015 the companies Elektro Gorenjska Prodaja, d.o.o., and Elektro Celje Energija, d.o.o., merged into the company ECE, d.o.o. Also in 2015 an equity merger between the companies GEN-I, d.o.o., and Elektro energija, d.o.o., began.

Figure 39: Changes in number of suppliers in the retail market in Slovenia in the period 2008–2015



Source: Energy Directorate

3.3.2.1 Retail electricity prices

The retail electricity market is open and competitive; final prices are affected by market mechanisms. The regulated part of the final price is the network charge. The Energy Agency actively monitors the prices in the household and business markets. At the monthly level, the Energy Agency from suppliers receives information on prices changes or supply offers on both markets. The market for large business consumers is analysed at an annual level on the basis of data received from EPOS system, which is operated by the Ministry of Infrastructure. Mentioned data and other supportive data are used for effective monitoring of markets for household and small business consumers, and providing comparable services within the single point of contact.

Suppliers offer electricity in the form of various products, which can be divided into regular offers (based on regular price list and their terms of supply determined by the Energy Act), and other offers, which can be further divided into special offers (as the result of regular price lists), bundled offers (in addition to the supply of electricity include other services), and other offers, which cannot be placed in any of mentioned category. Regular offers are the products available to all consumers, which without binding obligations and penalties enable supplier switching at any time. Among regular offers the Energy Agency gives special attention to those which are based on regular price lists. These offers are subject to the comparison within the comparative services in the single point of contact. Other offers may include penalties if a consumer before the due time withdraws from the contract; they can also be limited to a specific group of consumers (installed smart meter, heat pump, etc.).

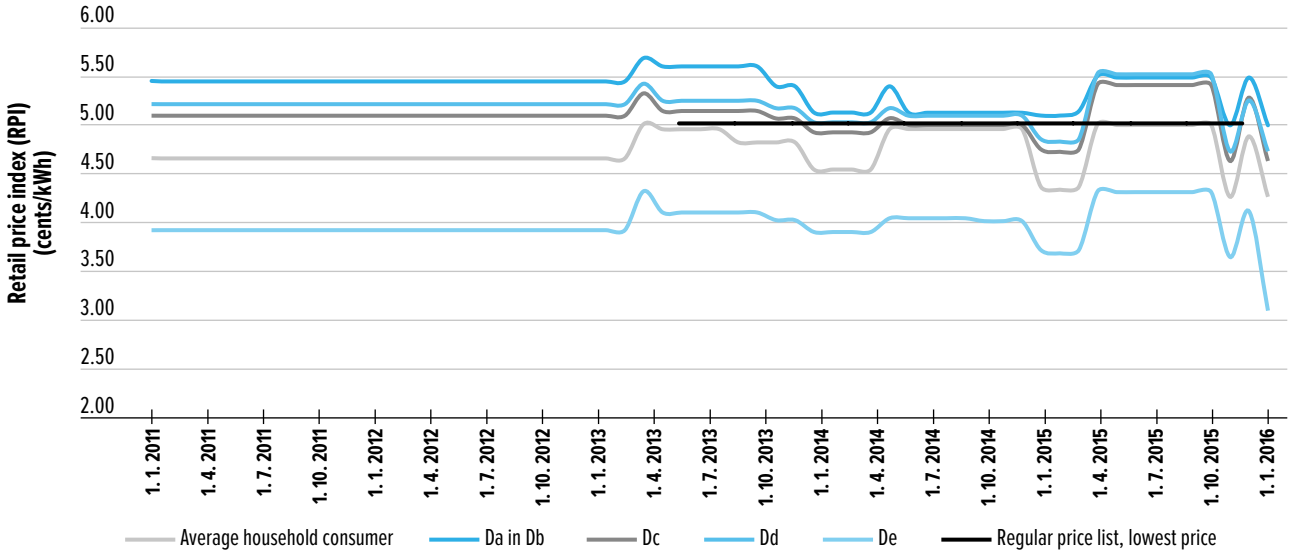
Prices of individual products are formed according to consumption profile, the structure of primary production sources (e.g. electricity generated only from RES) and other attributes of a product (additional advantages, the time of duration of a contract, etc.). Price is thus only one of the characteristic of an individual supply product, therefore the Energy Agency also monitors all other features of electricity supply (e.g. the structure of primary production sources etc.).

The retail price index

On the basis of monitoring the retail market for household consumers, the Energy Agency determines the retail price indices (RPI). This index is based on the lowest offer on the retail market, accessible to all households and not restricted to the possibility of switching supplier.

Figure 40 shows the movements of the retail price index for standard consumers groups Da, Db, Dc, Dd and De for an average Slovenian household consumer (consumption profile: 8 kW, 2100 kWh, 1996 kWh HT), and the movement of the cheapest regular price for an average household consumer in Slovenia for the period 2011–2015.

Figure 40: Retail price indices in the period 2011–2015



Source: Energy Agency

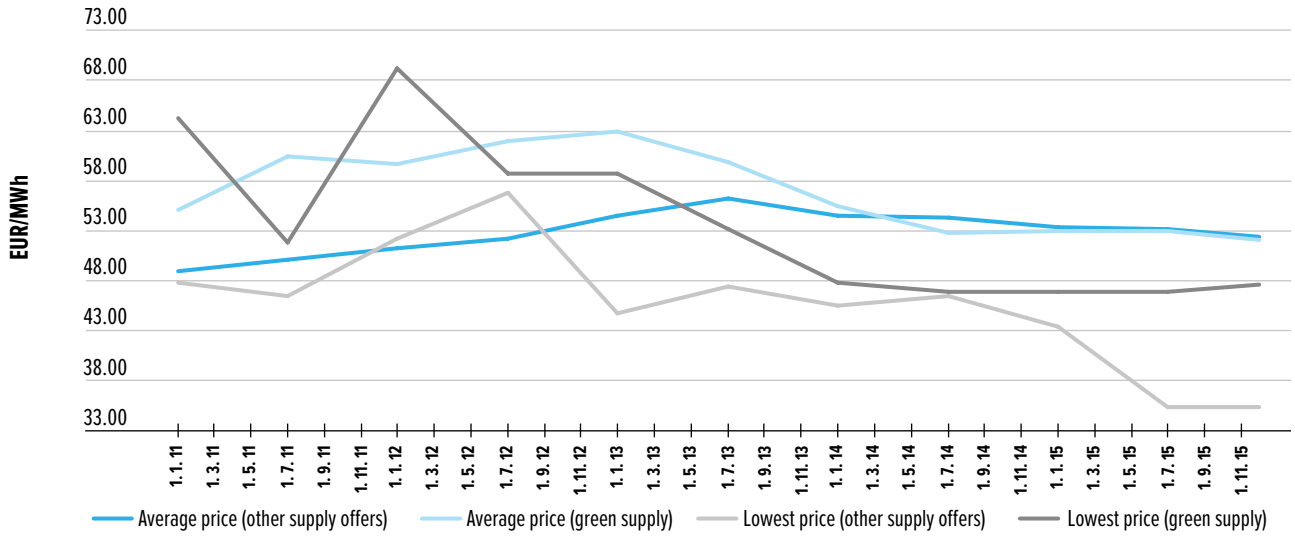
Retail price indices of all consumers groups were strongly interdependent. During 2015, increase and decrease in prices can be seen, and at the end of the year, the value of RPI on average stabilized at a slightly lower level than it had at the beginning of the year. The bigger difference can be noticed at RPI for the groups Da and Db where the RPI at the end of the year decreased significantly. An increase in RPI in the first quarter of the year happened when the price list according to which consumers were charged for the supply under the campaign of the Slovenian Consumers' Association expired. RPI based on a regular price list for an average household consumer since the implementation of the new Energy Act or the definition of the regular price list has not been changing its value. The lowest price on the regular price list for an average household consumer almost coincides with the maximum level of the lowest price reached in the market, which can indicate that the lower regular price actual represents a kind of a reference price on the basis of which special or bundled products are prepared.

Prices of green supply

Electricity supply services differ among other things also in the structure of primary production sources. The suppliers also offer consumers the energy entirely generated from RES or environmentally friendly sources (hereinafter referred to as green supply). Other offers include, in addition to RES, also other energy sources, or only other sources (hereinafter referred to as other offers).

Figure 41 shows the movement in average prices of green supply and other supply offers, and the movement of the lowest price of green supply and other offers in the market in the observed period.

Figure 41: Comparison of green supply and other offers in the Slovenian retail market for average household consumer (Dc – 3500 kWh per year)



Source: Energy Agency

In 2011 and 2012 we can notice a large gap between the average price of green supply and the rest of energy, but in 2013 the difference started to get smaller, and at the beginning of 2014 the prices became almost the same. Average prices of both electricity supply in 2014 and 2015, remained practically at the same level and were slightly decreasing.

In comparison with 2014, the difference between the lowest price of green supply and other energy sources. In August 2014 the prices were almost the same.

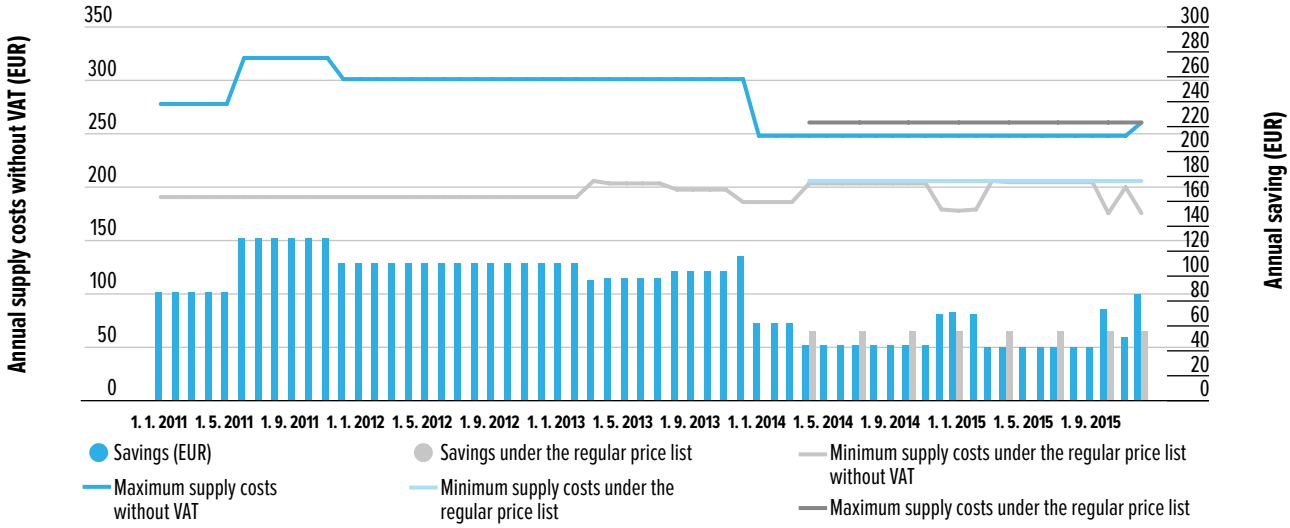
Potential benefits of switching supplier

By switching a supplier every household or legal entity can reduce his annual costs of electricity as well as gain additional benefits or better align the supply contract to his needs.

Figure 42 shows the movement of the minimum costs and the maximum costs of electricity in the retail market at the annual level without the network charge, levies, and VAT. We can also see the minimum and the maximum costs for the supplied electricity under the regular price list.

If in 2015 consumer with the most expensive offer chose the cheapest offer on the market, his potential savings would be between 43 and 85 euros. In comparison to the average saving in the period of 2011–2014 the potential saving in 2014, when it was 110 euros, almost halved. At the end of 2015, we can again see an increased gap between costs for the supplied electricity on the basis of the cheapest and the most expensive offer or increase in the potential annual saving after switching.

Figure 42: Potential annual saving by switching supplier based on the most expensive and the cheapest offer in the market, or the offers under the regular price list



Source: Energy Agency

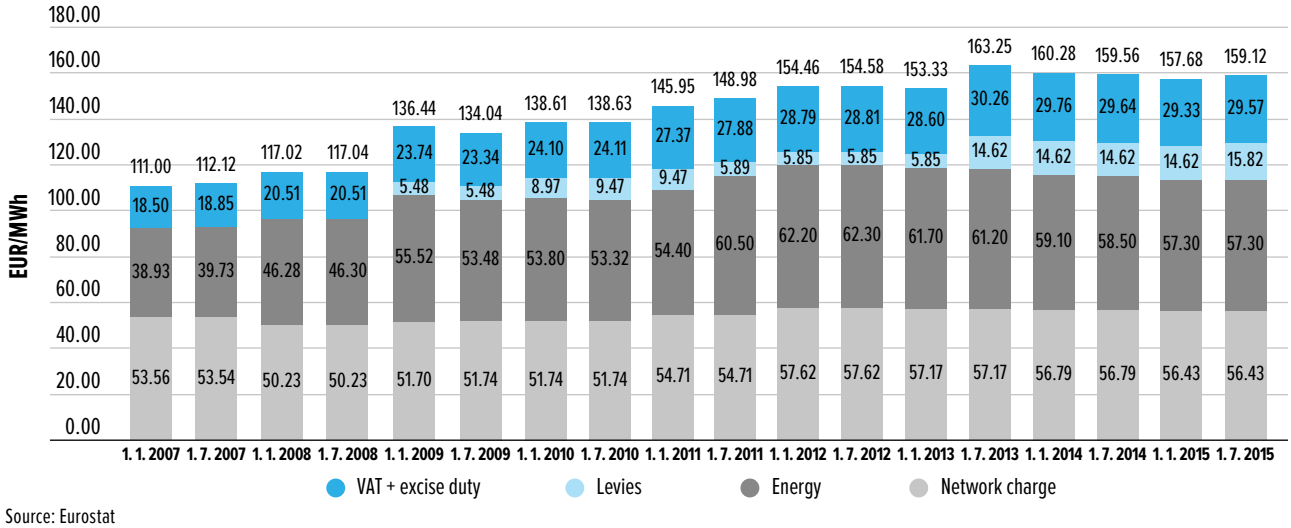
The potential saving by switching supplier in the area of regular offers has been since the implementation of the regular price list constant and amounts to 55 euros. Situations in the markets described in previous chapters so far do not affect the regular supply prices. The lowest regular price through the entire observed period has been dictated by the same supplier, and the highest price in the same period has been provided by different but always the same supplier with its old price list, which is no longer available to consumers.

Final electricity prices for household consumers

The final electricity price for consumer consists of:

- the electricity price formed freely on the market;
- the network charge (for the transmission and distribution network);
- levies (for supporting electricity production from RES and CHP, supporting energy efficiency programmes and for the operation of market operator);
- excise duty;
- value added tax.

Figure 43: Movements of final electricity price for a typical household consumer in Slovenia (Dc – 3500 kWh per year) in EUR/MWh



Source: Eurostat

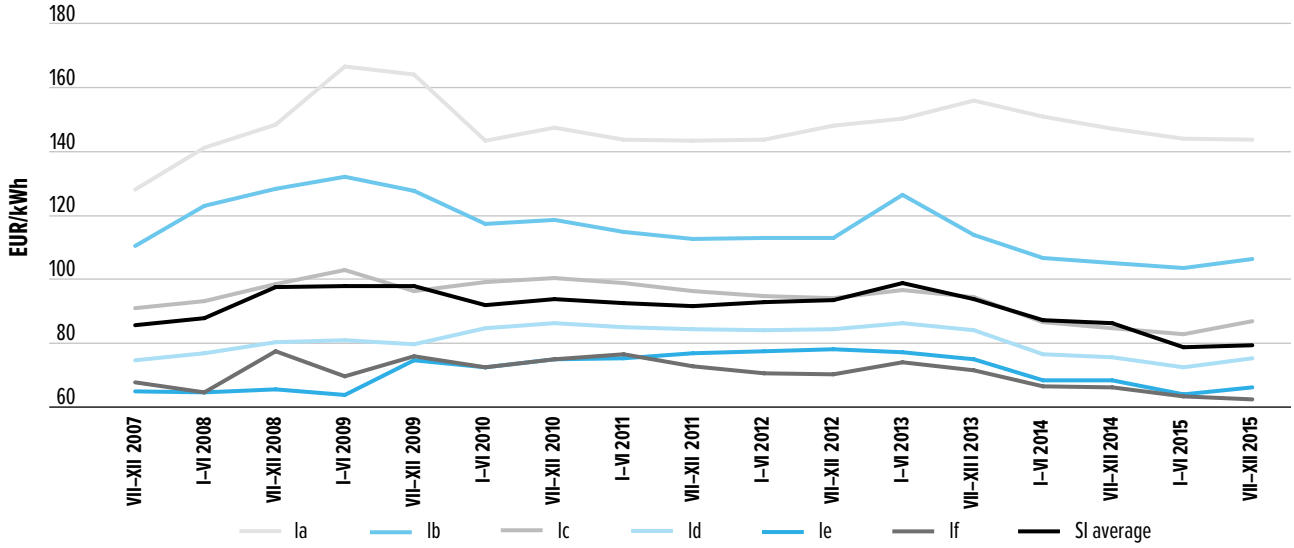
Final electricity price reductions from 2013 to 2015 was due to a decline in energy prices, levies, supplements and excise duties. The network charge has been for the last five years almost unchanged, while the price for energy during this period has been slightly decreasing. Two major changes in the final prices had been noticed, which are caused by:

- higher increase in energy prices and introduction of contributions in 2008 and
- increase in contributions in 2013.

Final electricity prices for business consumers

The average electricity price for business consumers, without VAT, in the second half of 2015 in Slovenia amounted to 88.6 EUR/MWh, and in comparison with the same period of 2014 decreased by 2%. The price reduction is a result of the situation in the energy prices, since in 2015 on the wholesale markets prices were falling and reached historically low levels.

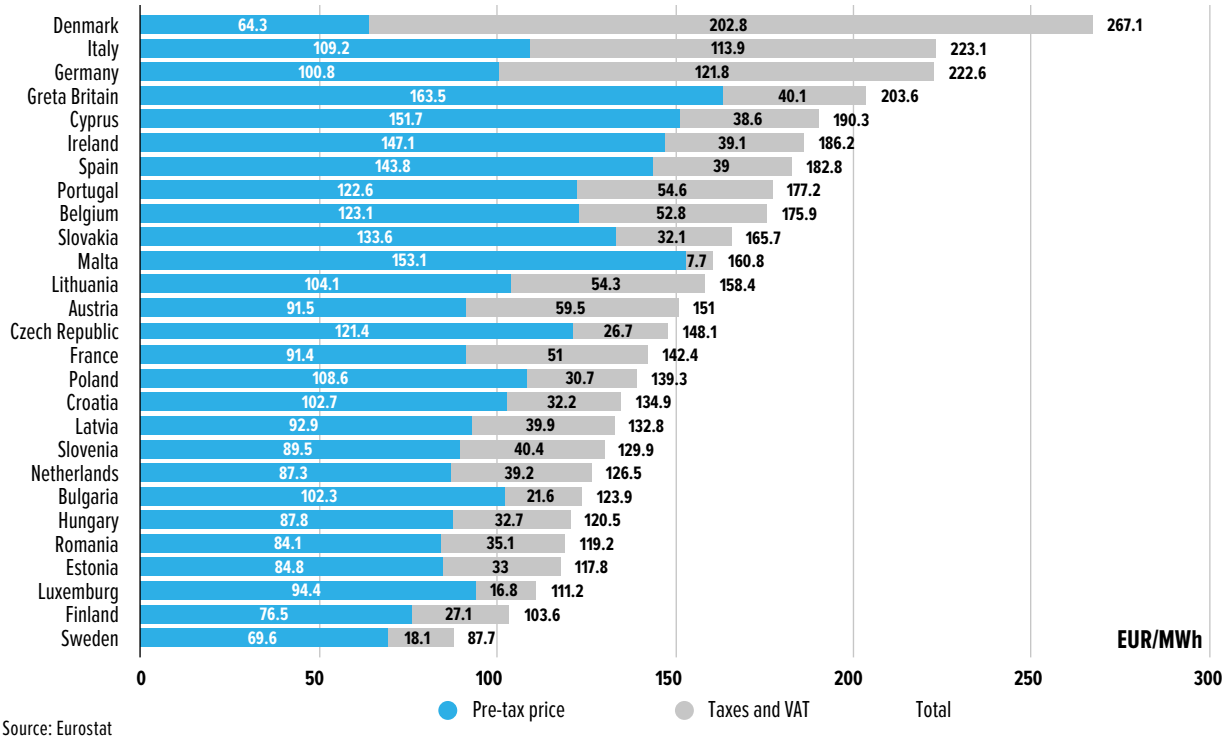
Figure 44: Movements of final electricity price for typical business consumers in Slovenia for the period 2007–2015



Source: Statistical office of the Republic of Slovenia

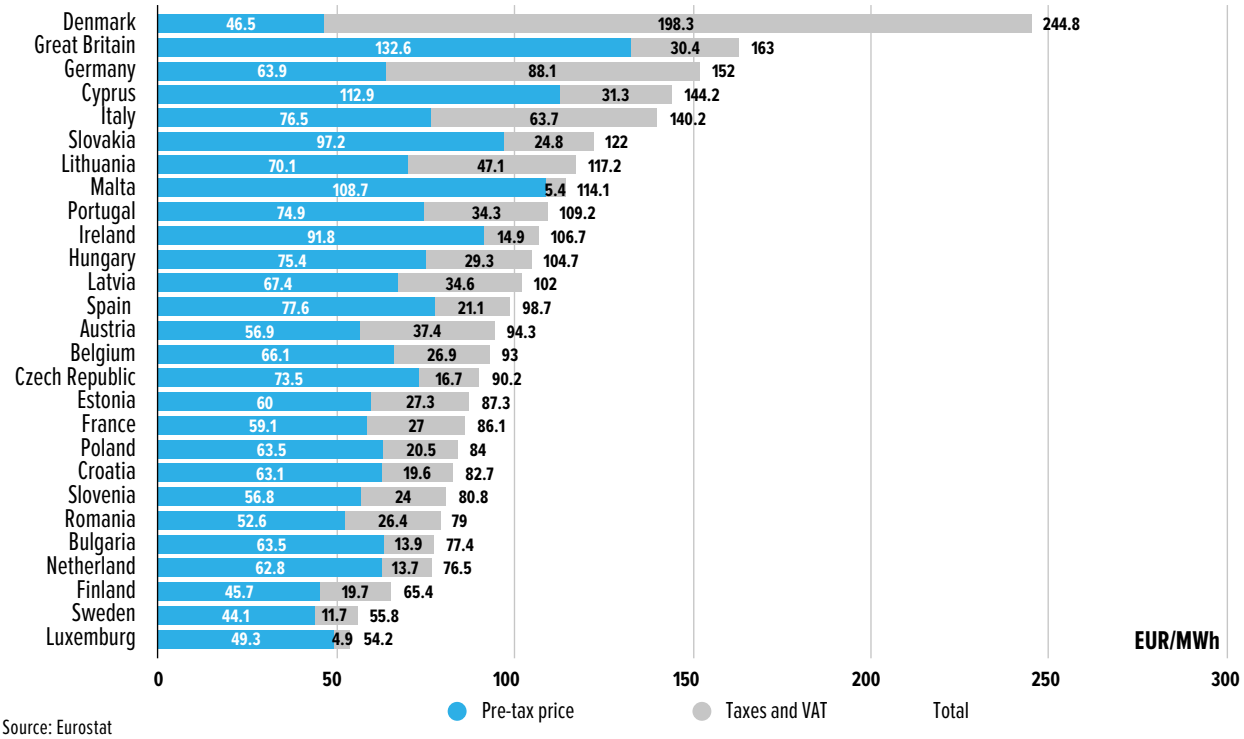
In the figures that follow the comparison of electricity prices in some EU countries for 2015 for two typical business consumers selected in line with the Eurostat methodology are presented. Final prices in EU are shown; for Slovenia the pre-tax price includes the price for energy and the network charge. Among the taxes and duties are for Slovenia included levies, excise duty and VAT. The highest price in the EU for business consumers was in Denmark; the majority of this price are taxes and VAT.

Figure 45: Comparison of electricity prices for a typical business consumer with an annual consumption of 20 to 500 MWh (Ib) in EU and Slovenia in 2015



Source: Eurostat

Figure 46: Comparison of electricity prices for a typical business consumer with an annual consumption of 20 to 70 GWh (Ie) in EU and Slovenia in 2015



Source: Eurostat

The results from both comparison indicate that the final prices for the selected business consumers in Slovenia are lower than the average price in EU, which has a positive impact on the competitiveness of our industry.

3.3.2.2. Transparency

Financial transparency of suppliers

Financial transparency of suppliers is provided under the mandatory publication of annual reports of the business entities and by submitting the data of AJPES (The Agency of the Republic of Slovenia for Public Legal Records and Related Services) for the needs of the national statistics in accordance with the Companies Act. The Energy Agency within the market monitoring framework analysis the annual reports and prepares reports on the operations of entities, which are made public, or may be used in correlative analysis for the purpose of market monitoring. The Energy Agency estimates that a common legislative framework provides for a sufficient level of financial transparency of supplier in the retail market.

Transparency of bills, and electricity disclosure

The transparency of electricity bills is regulated in accordance with the Energy Act, the current Act on the methodology determining the regulatory framework and the methodology for charging the network charge for the electricity system operators, and Act on the determination of the shares of individual electricity production sources and on the method of their presentation. On electricity bills are separately indicated the costs of electricity, network charge and other levies, excise duty and VAT. The mandatory part of the bill is disclosure of the structure of the production sources.

On the electricity bills to their consumers, in the promotion materials and on the internet, electricity suppliers must indicate the shares of individual energy production sources in the whole structure of the electricity of individual supplier in the preceding year. The shares for the preceding year must be published since 1 July of the current year.

The structure of production sources disclosed by the electricity suppliers is based on the amount of cancelled guarantees of origin for RES of each supplier and other structure of production sources (residual mix). The methodology determining the shares of individual electricity production sources, which is in Slovenia used for electricity disclosure since 2013, does not take into account the data on production sources that may be determined by the contract between the wholesale electricity market participants. The shares of an individual supplier are determined on the basis of the number of cancelled guarantees of origin, while the shares of other production sources (fossil fuels, nuclear) are determined only on the basis of the remaining structure of production sources (residual mix).

By 31 May, the Energy Agency must on its websites publish residual mix for the preceding year. The residual mix is based on the statistic of electricity production, from which all the production from RES with issued guarantees of origin is deducted. To the remaining structure of production sources is added the electricity with corresponding guarantees of origin whose period of validity has expired in the preceding year.

The amount of electricity corresponding to the determined national residual mix is compared to the electricity consumed in the preceding year, from which the amount for the Slovenian suppliers and for final consumers of cancelled guarantees of origin and the electricity consumption of PSH-PP is deducted. If this amount exceeds the amount corresponding the residual mix, the remaining amounts are replaced in a way that as their structure the European residual mix is taken into account; the European residual mix is every year published by the Association of Issuing Bodies (AIB). The AIB publish the European Residual Mixes by 15 May for the preceding year. By supplementing the national residual mix with the European residual mix we obtain the residual mix, which is published by the Energy Agency and is the basis for determining the electricity disclosure of an individual supplier.

Each supplier in the calculation of electricity disclosure covers its amount of the supplied electricity from RES with their cancelled guarantees of origin, and with the part of cancelled guarantees of origin from facilities using RES that receive support as guaranteed purchase. How much of the electricity from the guaranteed purchase belongs to an individual supplier is determined by the Energy Agency in respect to its share of the electricity in the overall supply of electricity to end consumers.

A supplier replaces his remaining amount of supplied electricity with the residual mix, while such replaced mix is taken into account in the proportionate share of the total supplied electricity by a supplier and the amount of cancelled guarantees of origin. In that way, each supplier determines its electricity disclosure (the structure of production sources) at the company level. Electricity disclosure must be published by all active suppliers in the Slovenian retail market. When a supplier is offering specific electricity products, for example "100 percent energy from solar power plants" or

a certain share from renewable sources must to the customers, buying this product, indicate the share in the whole company structure, and in addition, the structure, which refers to the specific electricity product .

Regular price list and publication of price lists

The suppliers to household and small business consumers must make public offers for electricity supply and the related price lists as well as general conditions for the supply services. With the implementation of the Energy Act the offers must be formed and published on the basis of the valid regular price lists. According to the Energy Act, regular price list means a price list for a particular type of consumer (a household or small business), which applies to all consumers that conclude a supply contract with the supplier for a particular type of consumer, with the exception of promotional or package price lists, and includes at least 50% of consumers and at least 1000 customers with each supplier.

Activities for providing transparency

With monitoring the retail electricity market and providing information within the single point of contact the Energy Agency actively contributes to the transparency of the retail market. The monitoring of the retail market is carried out on the basis of publicly available data and other data required from the reporting agents; the Energy Agency also carries out market researches and surveillance activities (on the basis of the results of market monitoring, reports of violations or restrictive practices, etc.). and implement measures for providing transparency. These measures include bilateral cooperation, influencing on the content and approving the rules for market operation and other secondary legislation, the preparation of amendments of the legislation and other rules, introduction of public consultations in accordance with active regulation of the energy networks of the future, and corrective influence on the functioning of market participants through their participation in professional associations (e.g. in the Section IPET).

Ensuring transparency is primarily focused on the retail market for the most vulnerable consumers, that are household and small business consumers; nevertheless, also some other aspects that affect the level of transparency of the retail market for other consumers are kept under review. On the Energy Agency's website are within the single point of contact available e-services, among which the application for comparison of electricity supply costs is the key one (hereinafter referred to as comparison of suppliers), which enables the calculation and comparison of the costs of electricity supply for an individual consumption type on the basis of the valid supply offers, or price lists under which consumers are still served but are no longer available to new consumers. Comparative calculations can be carried out for the supply to household and small business consumers. The suppliers submit the suppliers offers on monthly level in the framework of comparative e-services. The comparison is limited to comparison of the costs under regular price lists. Since the implementation of the Energy Act-1 consumers no longer have the single access to all price lists and offers and that they have to search for this information at individual supplier or at commercial providers of comparative services.

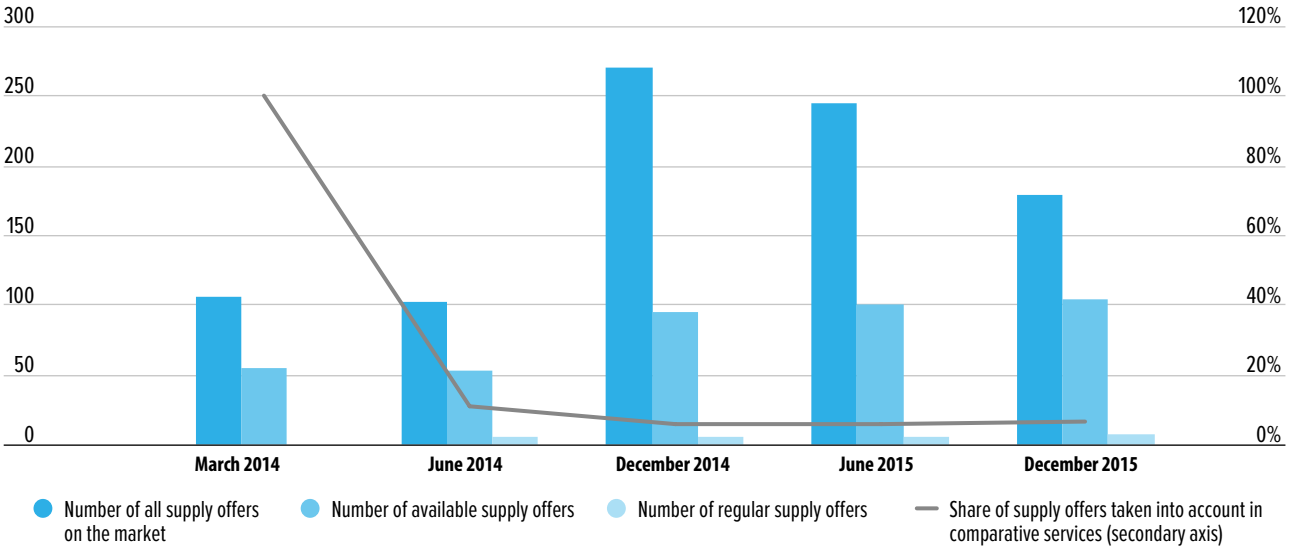
The web application for comparison of electricity supply also includes the service "Check the bill", which allows a consumer to check the accuracy of a bill for the supplied electricity, according to the supply and consumption profile. Billing on a monthly basis is shown separately in line with legal components and is available for all products on the market, not only for those based on the regular price lists. The verification is possible only for monthly electricity invoicing, and not for back payments for electricity supply.

The single point of contact also allows the comparison of costs for the use of the network depending on the user profile and the type of connection. This calculation gives the users other important information, which contribute to the transparency of services (a structured list of legislation, explanation of the electricity bill, etc.).

The market makes available diverse enough services, which are not restrictive in terms of binding and contractual penalties; consumers may choose among the supply services that allow switching supplier theoretically almost every month. These are not only offers based on regular price lists, but also many other supply offers in the market. Household consumer otherwise may withdraw from the supply contract without paying penalties, reimbursement, compensation or any other payment due to the withdrawal before a specified date if the termination of the contract takes effect for at least one year after its conclusion.

The Energy Agency continues to monitor the fulfilment of suppliers' obligations to publish regular price lists. Figure 47 shows the results of the implementation of a regular price list in the retail markets for household and small business consumers.

Figure 47: Numbers of supply offers to household consumers, available supply offers, and supply offers in comparative services of the Energy Agency



Source: Energy Agency

The first year after the introduction of the regular price list a rapid and extraordinary increase in the number of electricity offers in the retail market for household consumers (more than 150 percent increase), which is the result of intentional portfolio transformation of some suppliers in order to avoid the publication of regular offers. The number of products for an average Slovenian consumer had doubled. Nevertheless, new products on the market did not significantly increase the choices for consumers since they were not very different in terms of prices and other characteristics. However, they had a negative effect on market transparency. At the same time, not all suppliers introduced a regular offer, which could be a reference of transparency of special offers. In 2015, only one-third of suppliers was publishing offers based on regular price list. Concurrently, the number of offers included in the comparative services decreased; a comparison of supply costs for an average Slovenian consumer[1] was before the implementation of legal provisions that limit comparison services only to a regular price lists possible to make among more than 50 offers of eight electricity suppliers. In December 2014 the comparison was possible only between six offers, and in December 2015 between seven electricity offers of different suppliers (offers based on regular price lists). In 2015, the number of all electricity offers on the retail market for household consumers was gradually decreasing, which was mainly due to a merging of some supply companies and optimization of product portfolio. The number of offers available to an average consumer is slowly increasing.

On the basis of the analysis of the introduction of a regular price list, the Energy Agency drafted a proposal to amend the provisions of the Energy Act, which govern this area, and sent it to the relevant ministry.

In the monitoring procedures, the possible violations of electricity disclosure on issued bills, promotional materials, and the internet were identified. A flat-rate operating costs on the basis of a regular price list were also monitored; the procedures are still ongoing.

The appropriate degree of transparency must also be ensured in the area of standardization of contracts and general supply conditions. At the end of 2015, several controls of electricity suppliers to household and small business consumers started regarding the key elements of supply contracts general supply conditions.

In the area of the retail market for larger business consumers, there is no legal basis to establish the same level of transparency of offers on the market as it applies to households and small business consumers. Price lists are not made public, prices and other supply conditions are determined

[1] Average Slovenian consumer: 8 kW, 1996 kWh (VT) and 2100 kWh (MT), total 4096 kWh

mainly through negotiations, and usually are concluded non-standard forward contracts for the supply where most contracts have one year validity. Because of this, there are no regular price lists. In 2015 we did not receive any complaint or report against the retail market for larger business consumers, so it can be assumed that the rules and executive regulations as well as common legislation for these consumers (obligation etc.) governing this area are effective and that the rules are clear.

3.3.2.3 Market effectiveness

Monitoring of the effectiveness and competitiveness of the retail market is carried out on the basis of continuous collection of data from market participants and aggregators of public data (Ministry of Infrastructure, Statistical Office of the Republic of Slovenia, etc.) In the following chapters are presented specific indicators by which the effectiveness and competitiveness of the retail market are measured.

Electricity supply to all end consumers

Table 20 shows the market shares of suppliers related to the supplied electricity by taking into account the supply in the entire retail market, which means that the market for larger business consumers connected to the transmission system is included as well.

Table 20: Market shares and HHIs of the suppliers to all end consumers in Slovenia in 2015

Supplier	Supplied electricity (GWh)	Market shares
GEN-I	2,760.2	21.6%
Elektro energija	2,234.8	17.5%
ECE, energetska družba (Elektro Celje Energija)	1,963.5	15.4%
Elektro Maribor Energija plus	1,531.1	12.0%
TALUM	1,198.4	9.4%
E3	929.6	7.3%
Petrol Energetika	692.2	5.4%
Petrol	678.7	5.3%
Elektro Gorenjska Prodaja	536.5	4.2%
HSE	140.1	1.1%
Others	119.7	0.9%
Total	**12,785**	**100.0%**
HHI of the suppliers all to end consumers		**1,369**

Sources: Companies' data

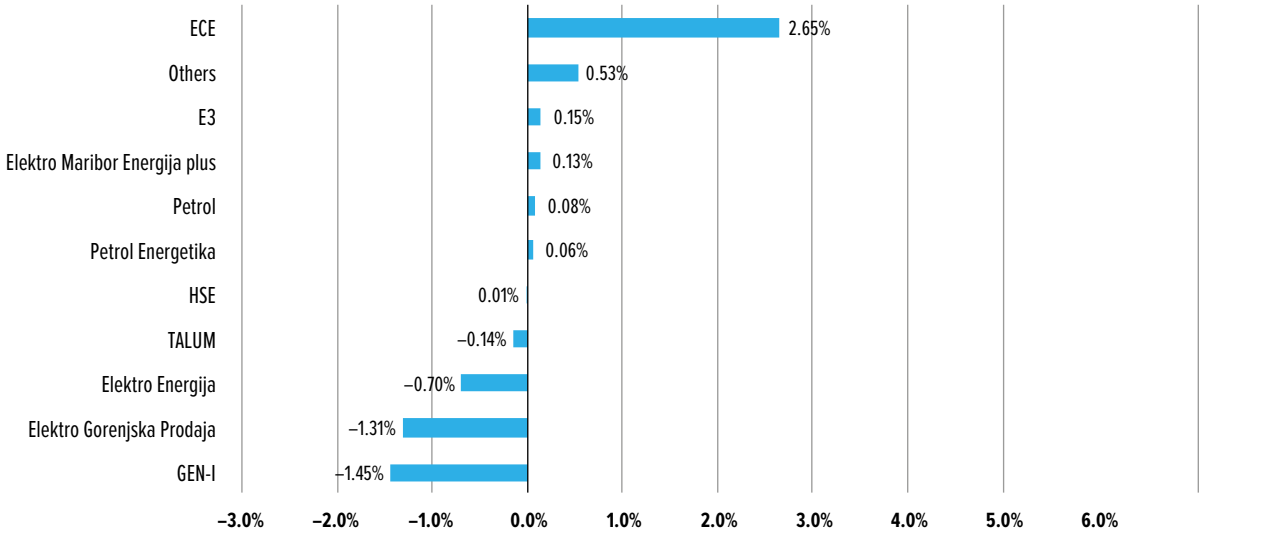
Look at the entire market, which includes consumers on the transmission network, shows medium market concentration, since the HHI was below the upper limit of 1800.

In the markets with HHI below 1000, mergers between suppliers and equity takeovers have no apparent impact on competition. The high concentration of the market on the other hand does not by itself constitute an abuse of market power, however such case it is necessary to pay more attention within the market monitoring framework. At this it has to also considered the ownership integration and not only mergers between companies.

In 2015 in comparison to the previous year, in the retail market to all consumers the market shares of the company ECE (Elektro Celje Energija) and of other small suppliers increased the most. The market share of ECE increased by 2.5 percentage point, and other small suppliers by 0.5 percentage point. Here should be mentioned that on 1 October 2015 the companies Elektro Gorenjska Prodaja and Elektro Celje Energija merged to the new company ECE. This is the main reason that ECE in 2015 had the largest increase in market share among electricity suppliers to end consumers in Slovenia. Consequently, the share of the company Elektro Gorenjska Prodaja decreased by 1.3 percentage point. The difference between the increase in market share of ECE

and decrease in market share of Elektro Gorenjska Prodaja, which was 1.4 percentage point, is very likely the consequence of obtaining new customers in the market. Increasing of market shares of other suppliers is the result of entries of new suppliers to the market, and gaining consumers from other small suppliers, which have not yet reached the threshold of one percent share. The greatest loss of market share was recorded for the company GEN-I, which lost 1.4 percentage point of its share in comparison to the previous year and that corresponds to the net share gained by ECE.

Figure 48: Changes to the market shares of the suppliers to all consumers in 2015 with respect to 2014



Source: Energy Agency

Electricity supply to all business consumers

Market shares of electricity suppliers in the retail market for business consumers in 2015 are shown in Table 21.

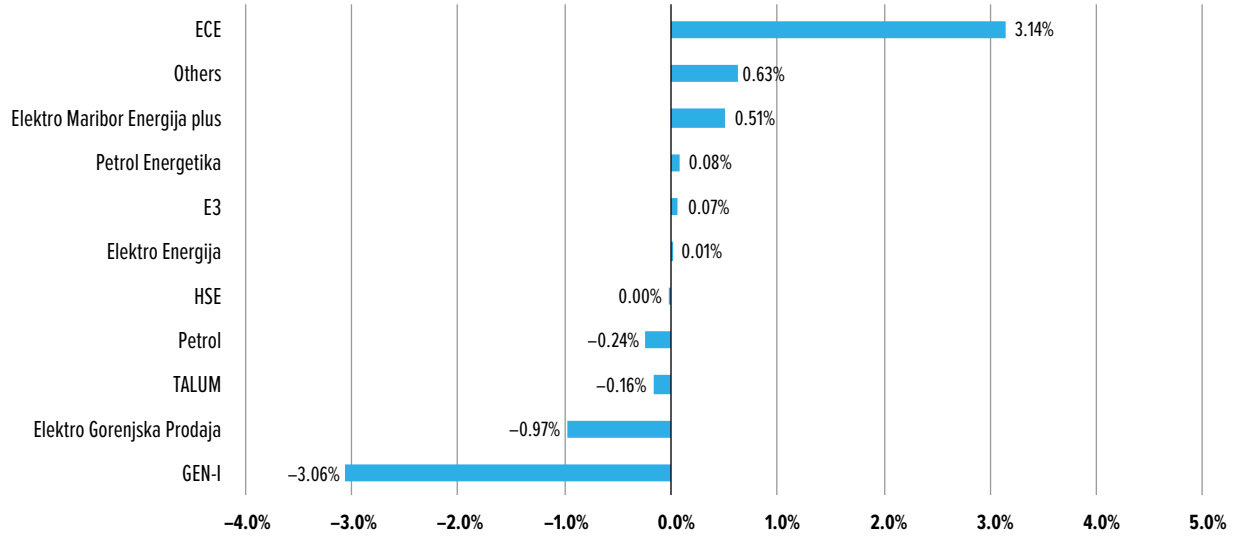
Table 21: Market shares and HHIs of the suppliers to all business consumers in 2015

Supplier	Supplied electricity (GWh)	Market shares
GEN-I	2,133.8	22.2%
Elektro energija	1,539.2	16.0%
ECE, energetska družba (Elektro Celje Energija)	1,414.9	14.7%
TALUM	1,198.4	12.5%
Elektro Maribor Energija plus	952.2	9.9%
Petrol Energetika	674.8	7.0%
E3	586.8	6.1%
Petrol	467.0	4.9%
Elektro Gorenjska Prodaja	377.3	3.9%
HSE	140.1	1.5%
Others	110.0	1.1%
Total	**9,594**	**100.0%**
HHI of suppliers to business consumers		**1,353**

Source: Companies' data

In the retail market for business consumers in 2015 continued the medium market concentration, since HHI value was under 1800. In comparison to the previous year, The biggest market shares gained the suppliers ECE, the group of other small suppliers and Elektro Maribor Energija plus. A large increase in the market share of ECE is a result of a merger with the company Elektro Gorenjska Prodaja. Again, GEN-I lost the biggest market share in comparison to the previous year.

Figure 49: Changes to the market shares of the suppliers to all business consumers in 2015 with respect to 2014



Source: Energy Agency

Electricity supply to household consumers

Market shares of electricity suppliers in the retail market for household consumers in 2015 are shown in Table 22.

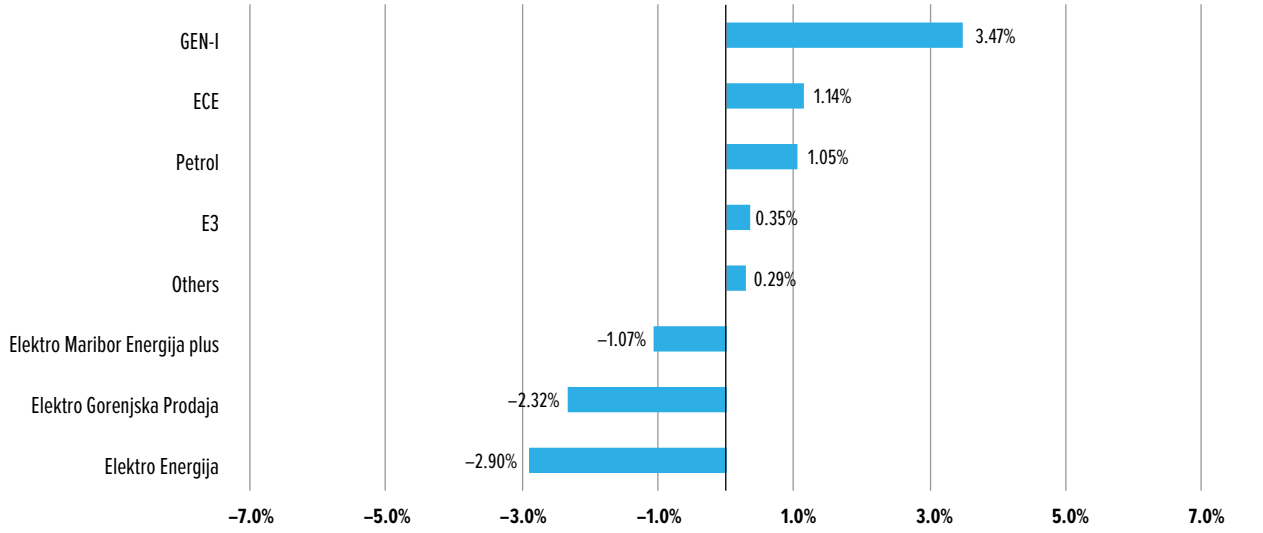
Table 22: Market shares and HHIs of the suppliers to household consumers in 2015

Supplier	Supplied electricity (GWh)	Market shares
Elektro energija	695.7	21.8%
GEN-I	626.5	19.6%
Elektro Maribor Energija plus	578.9	18.1%
ECE, energetska družba (Elektro Celje Energija)	548.6	17.2%
E3	342.8	10.7%
Petrol	211.7	6.6%
Elektro Gorenjska Prodaja	159.2	5.0%
Others	27.0	0.8%
Total	**3,190**	**100.0 %**
HHI of the suppliers to household consumers		**1,671**

Sources: Companies' data

In the retail market for household consumers the medium level of market concentration with HHI value of 1671 is established, which is close to high market concentration. The market shares of the two largest suppliers in this market exceeds 40%, and the market share of the three largest suppliers is almost 60%. Of all the suppliers in 2015 the company Elektro energija had the largest share of 21.8%, in the second place was GEN-I with almost 20% of market share.

Figure 50: Changes to the market shares of the suppliers to household consumers in 2015 with respect to 2014

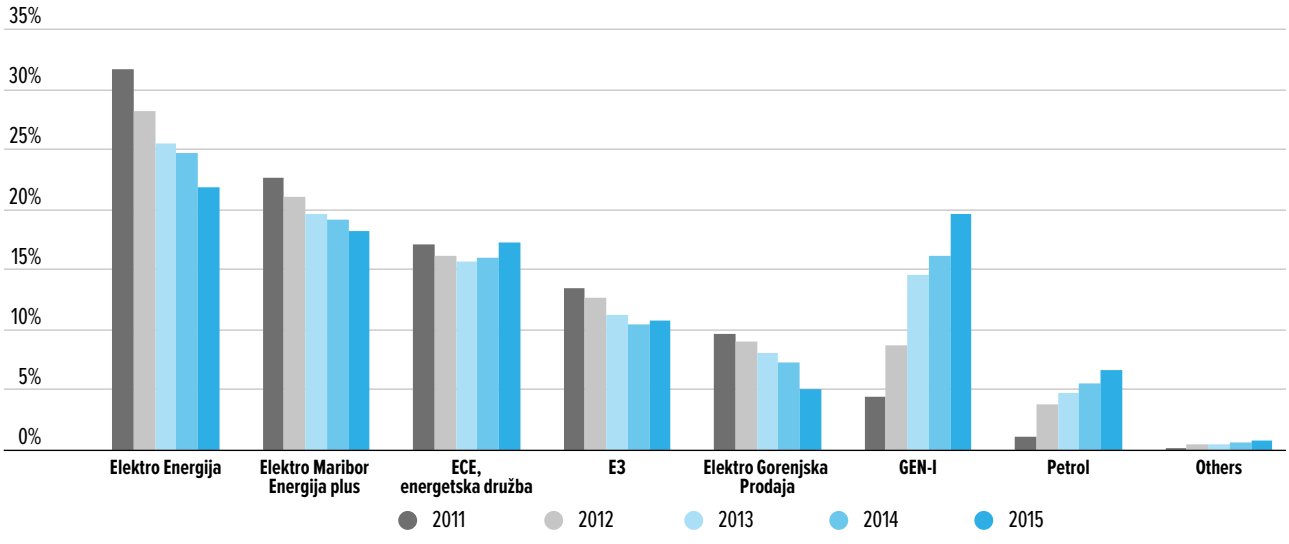


Source: Energy Agency

Figure 50 shows that GEN-I in 2015 strengthened its market share in comparison to 2014 by 3.5 percentage point. It is followed by ECE in Petrol, which increased their market shares by about one percentage point. Considering the merger of Elektro Gorenjska Prodaja the company ECE in this part of the market lost 1.2% of the market share. Elektro Maribor Energija plus, Elektro Gorenjska Prodaja in Elektro energija in 2015 decreased their market shares by more than one percentage point in comparison to the previous year.

Figure 51 shows the movements of market shares of suppliers to household consumers in the period 2011–2015.

Figure 51: Movements of market shares of electricity suppliers to household consumers in the period 2011–2015



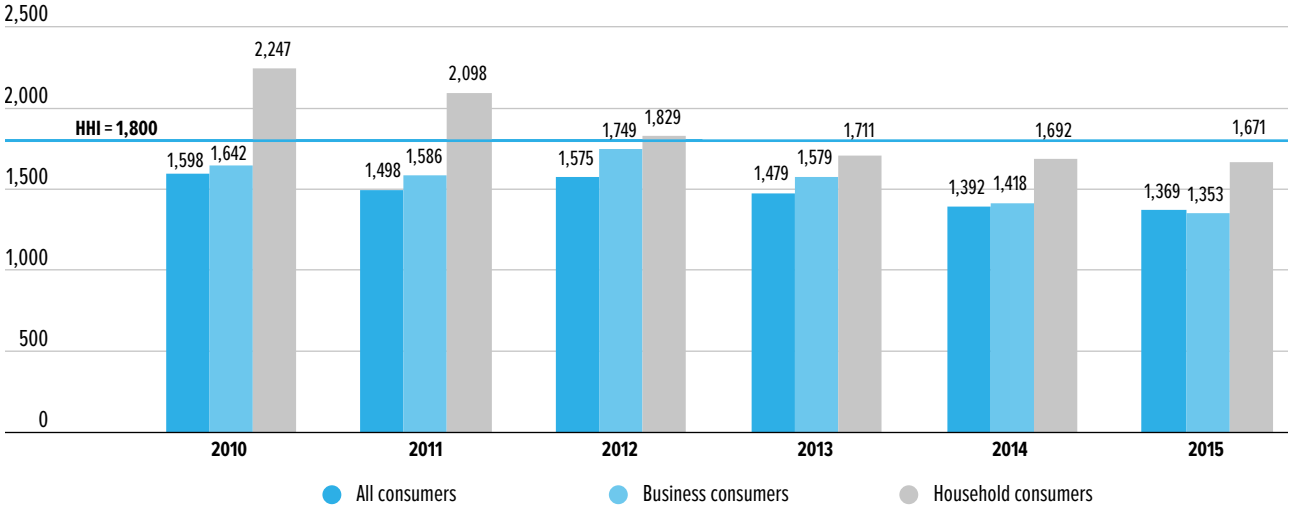
Source: Energy Agency

GEN-I, Petrol and other small suppliers in the observed period were continuously strengthening their market shares. The downward trend of their market shares stopped only the companies ECE (merger) and E3.

HHI for the period 2010-2015

Over the last years, the trend of HHI was in all observed retail markets negative, which reflects steadily strengthening competition between individual electricity suppliers. The biggest competition is in the supply of business consumers. In general, the retail electricity market in Slovenia in 2015 showed a medium level of market concentration since values of HHI were below the ceiling value of 1800.

Figure 52: Trends of the HHIs in the retail markets in the period 2010–2015

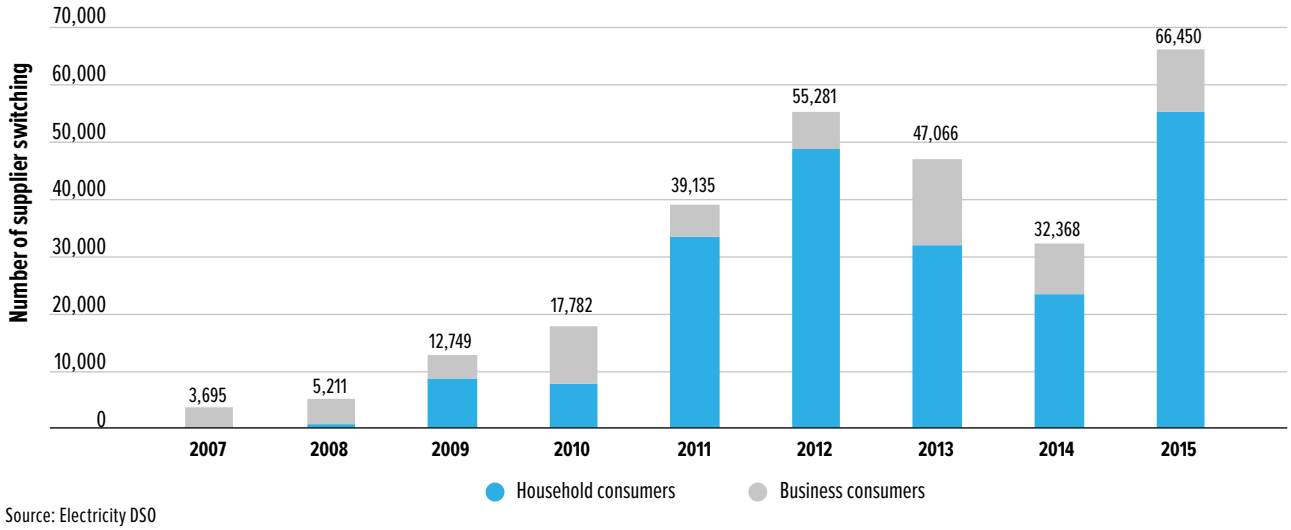


Source: Energy Agency

Supplier switching

In 2015, 66,450 consumers switched, of which 55,481 were household consumers, and 10,969 business consumers. Ad we can see from Figure 52, the number of switchings significantly increased. Negative trends from 2013 and 2014 as the results of reduced potential annual savings by switching supplier, were in 2015 stopped see the chapter 3.3.2.1). To such increased number of switchings contributed a great deal the campaign by the Slovenian Consumers' Association, which stimulated more than 12,000 households to change a supplier.

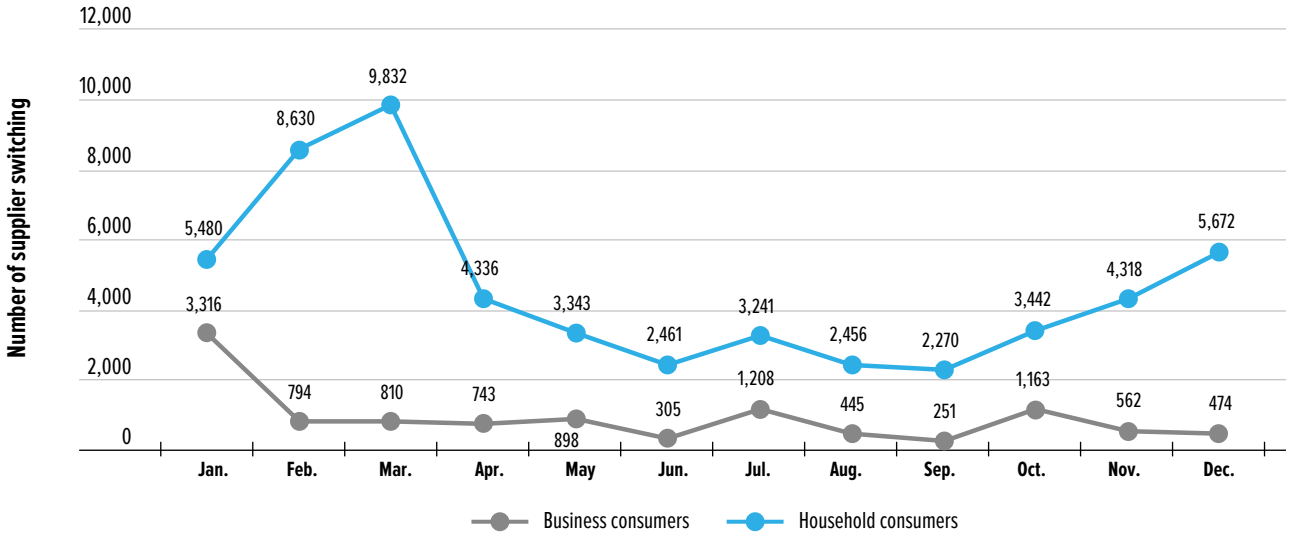
Figure 53: Number of supplier switching in the period 2007–2015



Source: Electricity DSO

The dynamics of supplier switching was in 2015 strongly linked to the campaign of consumers' association taken place in the first quarter of 2015, when actual change of balance group happened during the campaign. The number of switches by households increased in the last quarter of 2015 due to growing activity of suppliers and consequently more attractive supply offers on the market confirmed by the analysis of RPI (see 3.3.2.1).

Figure 54: Dynamics of supplier switching in 2015 with respect to the type of consumption

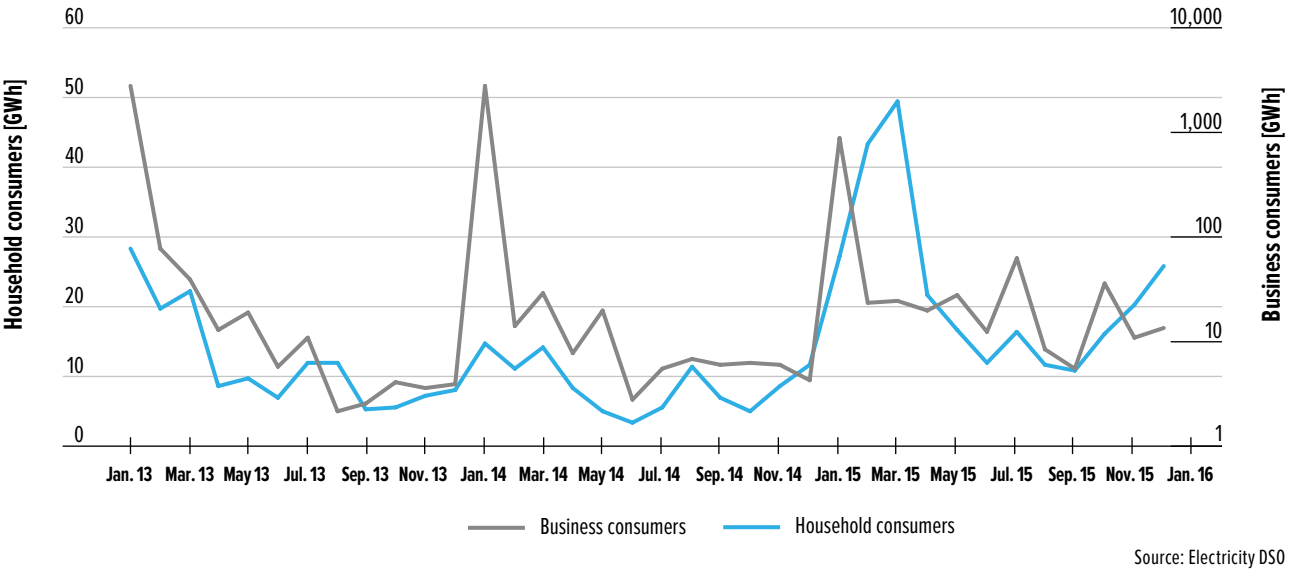


Source: Electricity DSO

Most of the business consumers decided to switch supplier at the beginning of the year when the contracts usually expire.

Figure 55 shows the dynamics of supplier switching for the last three years with respect to the amount of the supplied electricity. We can notice a close correlation between the amount of energy and number of switches. Volume of switched electricity were in 2015 in comparison to 2013 and 2014 incomparably higher.

Figure 55: Volumes of switched electricity with respect to the consumption type



Source: Electricity DSO

Complaints

Market effectiveness and competitiveness should be also monitored on the basis of consumers complaints against suppliers. In Slovenia is established Supplier centric market model, thus, it is necessary to classify complaints by the subject to those actually related to a supplier, and others related to the DSO. In more detail, this subject is presented chapter Consumers' protection.

Data exchange in key market processes

In accordance with the third package of energy legislation the Energy Agency actively participated to harmonisation of data exchange processes for electricity market operation. The use of open standards in data exchange is of utmost importance to eliminate barriers for entering new participants to the market; the use of open standards also reduce costs and enhancing market competitiveness. In the future, in accordance with the Energy Agency's general act, all key data entities in electronic data exchange will base on standardized identifiers (see 3.3.2.4.)

The development and the deployment of the advanced metering system in Slovenia are still ongoing and will be adapted to requirements of Regulation on measures and procedures for the introduction and interoperability of advanced electric power metering systems. This Regulation calls for the submission of the deployment plan, which will set out the architecture of the system, its minimum functionalities and aspects of data exchange based on appropriate standards (e.g. CIM). The Regulation requires from the DSO to establish a single point of access to validated data of the advanced metering system. The central information system will, therefore, provide data services for data exchange between business entities and network users (B2B and B2C). The Energy Agency closely monitors the compliance of the implementation with the legislation and thus ensures the harmonization and consistency of the implementation with technical requirements.

3.3.2.4 Recommendations on supply prices, investigations and measures taken to promote competition

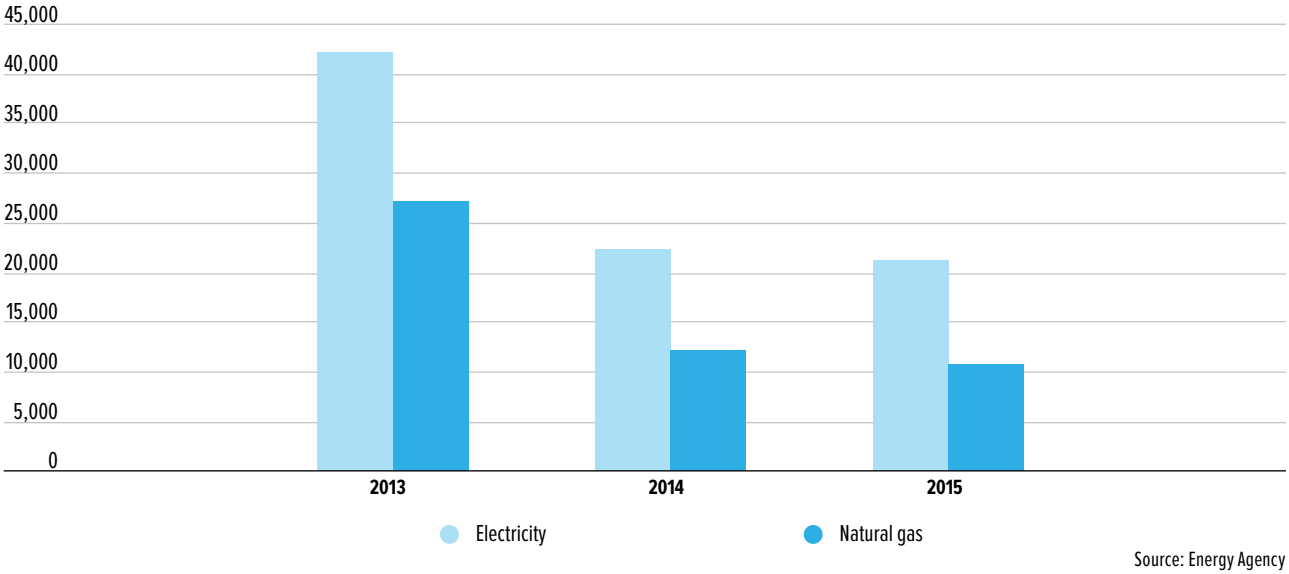
The Energy Agency monitors the retail market, cooperates with other regulatory and supervisory authorities (Market Inspectorate, Competition Protection Agency) as well as independent and non-profit organizations; it is also responsible for the updating of information on market developments, and ensures market transparency with the activities within the single point of contact. On its websites provides comparative services, which enable the comparison of supply costs based on a regular price lists[4].

There are many factors that influence on the retail market prices, such as wholesale prices, suppliers' procurement strategies, environmental requirements (e.g. efficient use of energy), etc.; the total cost of supply is also dependent on the network charges, levies (RES and CHP, for the market operator, energy efficiency, excise duty). Retail market prices are not regulated, therefore the Energy Agency does not give recommendations on retail prices. The exception is the price for last resort supply, which is regulated by the provisions of the Energy Act. The electricity DSO must automatically and without transfer windows ensure supply to final consumers connected to its system if the contract for supply is terminated because of measures resulting from the insolvency or illiquidity of a supplier, in accordance with the regulation governing the operation of the electricity market. The same acts at the request of household or small business consumer. The price of last resort supply must be made public and be higher than the market price of the supply to a comparable consumer, but it must not exceed the price by more than 25%. If the electricity DSO does not set the price of electricity for last resort supply, the price is set by the Energy Agency. In 2015, no corrective measures were taken in this area.

Also in 2015, the Energy Agency established that the majority of suppliers to the retail market did not have the supply offers based on regular price lists, which is the result of deficiencies and ambiguities of regular price list definition and its limitations. Some suppliers intentionally changed their products portfolio after the implementation of the Energy Act and introduction of a regular price list, and adapt their business in a way that they do not meet the criteria of the regular price list. The comparison also exclude all new suppliers, which had entered the market in 2015 and not yet acquired 1000 consumers. There are many supply offers in the market not covered by the web application for comparison of electricity supply costs, which negatively affects the transparency of

the retail market for household consumers since an independent comparison of all supply offers at single point is not possible. The number of comparison carried out through the web application halved since the implementation of the Energy Act and is still decreasing (Figure 56).

Figure 56: Number of comparisons carried out through the web application



Source: Energy Agency

In 2015 this issue was discussed in ACER Marketing Monitoring Report for 2014. After this publication, the responsible ministry announced appropriate changes of Article 434 of the Energy Act to remediate negative effects of the definitions of a regular price list.

In the electricity market, the same rules for the prevention, restriction, and distortion of competition apply as for other goods. Competition Protection Agency in 2015 did not take any decision or any action against electricity market participant.

In 2015, the Energy Agency carried out the monitoring related to the ensuring competition in the retail market. In one case the infringement was established regarding the provisions of data to suppliers on historical consumption, but since violation was remediated during the procedure, the Energy Agency issued a warning to the market participant in order to follow the legislation in the future. A case concerning allegedly unfair electricity prices advertising was assigned to the responsible authority. The remaining procedures dealt with the alleged infringements related to charging of flat-rate costs, dissemination of actual costs in the web application for comparison of electricity supply costs, and disclosure of the numbers of a measuring point on a single bill issued by the suppliers. In two procedures related to the informing a user of a system of his rights and obligations at supplier switching, and the process of switching itself breaches were not found.

In 2015 in the retail market for household consumers a case of bad practice should be exposed. One of the supplier on its issued bills to consumers replaced unambiguous identifier of a measuring point given by a DSO, and on which the process of switching is based, with its own internal identifier. To all consumers, who wanted to change a supplier, such practice caused difficulties in the process of switching. The process of switching may because of this took longer as set by the legislation, or even was not implemented. The Energy Agency identified bad practice, conducted an analysis of its legality and estimated its impact on the market. This practice is not expressly prohibited by the legislation in force, as well as did not have a significant impact on the number of switchings, but it caused the reaction of other suppliers and unplanned costs to the operator of the process of switching. Other suppliers demanded appropriate measures by the supervisory authorities and announced the introduction of this practice by themselves if the measures would not be effective. The activities to eliminate this practice started immediately.

In the area of measures carried out in accordance with the third package of energy legislation to harmonisation of data exchange at the national and regional level, the Energy Agency implemented the Act on the identification of entities in the data exchange among participants in the electricity and natural gas market, which binds market participants to use standardized identifiers of key data entities in electronic exchange of data in the market. The mentioned general act sets the minimum standards of identification and recommends the use of two standardized identification schemes, EIC in GS1, depending on scope of application. The Energy Agency monitored and directed the activities of the DSO in the planning phase of the transition from the use of their own identification schemes to standardized schemes. It was also very active in monitoring the use of appropriate identification of market participants in balance schemes at market operators.

In every new data exchange between market participants (B2B) the Energy Agency insists on the use of open standards and reuse of generic models of the European forum for energy Business Information eXchange (ebIX) and ENTSO-E models to the greatest extent possible. In the context of ebIX the Energy Agency significantly contributed to the fact that the key processes models are expanded by specifics required to data exchange in the natural gas market. It also participated in the preparation of proposal to the extension of harmonised electricity role model by ebIX/ENTSO-E/EFET, and in planning of strategy for the project related to the market flexibility. For this area, at the national level a professional dialogue has been carried on within the Section IPET, which operates under the Chamber of Commerce and Industry of Slovenia. The Energy Agency is still very actively involved in leading the section and preparation of the contexts under consideration. In 2015 the Energy Agency led the area of cyber security in power system, which also concerns the processes of data exchange among market participants.

3.4 Reliability of the electricity supply

The reliability of the electricity supply to the consumers depends on the capacity of the power system and the sufficiency of production sources and energy. We can speak of the two functional aspects of the reliability of supply - sufficiency of production sources and the security of the network. The sufficiency of production sources describes the ability of all available production sources to meet the demand for electricity at any time, taking into account planned and unplanned outages of the system. In a broader sense, the sufficiency means a sufficient reserve of affordable raw materials and resources for the production of electricity.

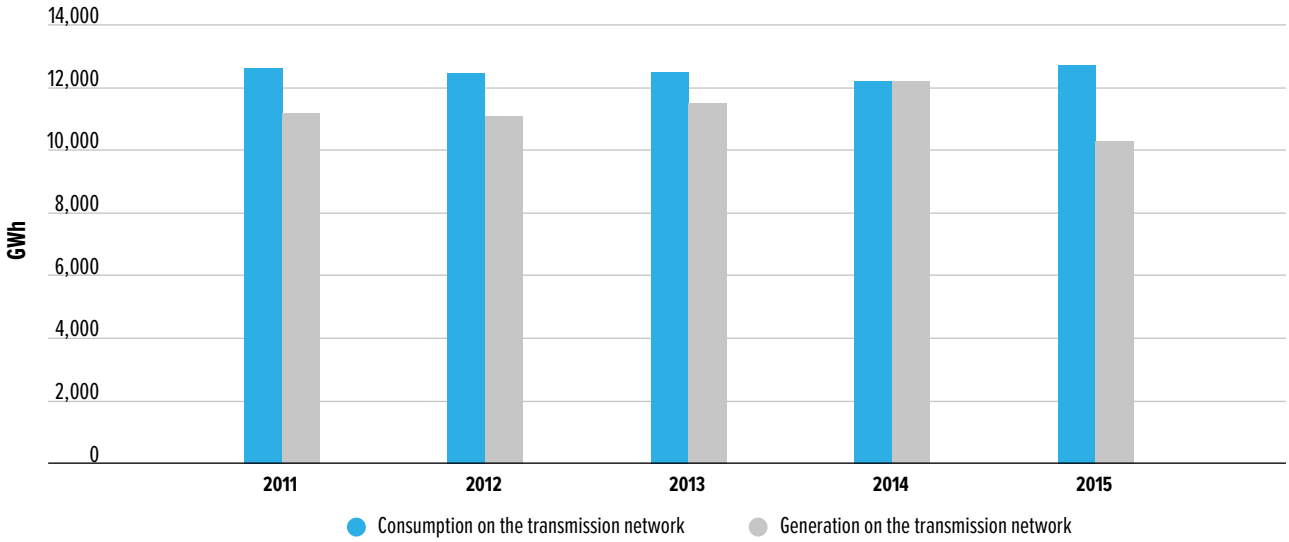
Electricity network security is the ability of the system to withstand disturbances such as outages of elements, failures, such as short circuits. In order to ensure the network security, in Slovenia the n-1 criterion is used for the transmission network, and for higher levels of the distribution networks. By using n-1 criterion, it is guaranteed that in case of an outage of any component of the system, the overloading, exceeding the limits or supply interruptions are avoided.

Under the Energy Act in the event of a sudden crisis in the energy market, and when the physical safety or security of persons, facilities or installations or electric power system integrity is threatened, the electricity TSO may impose measures to reduce the energy supply to certain categories of consumers, determine the order of reductions, lay down the method for using energy and determine obligatory energy production. The electricity TSO implements measures in cooperation with the electricity DSO, or by itself if the conditions for the introduction of the measures are limited to the distribution system. The method of implementation and the reasons for imposing the measures are set by the government by means of a decree, whereas a more detailed specification are made by electricity system operators within the framework of system operating instructions.

3.4.1 Monitoring balance of supply and demand

In the last five years, delivery of electricity from the transmission system has not change significantly; in 2015 was slightly higher than the year before, but remained at almost the same level as in previous years. The total delivery of electricity to the transmission system from generation units in Slovenia in comparison with the previous year decreased by 15.5%. In Figure 57 is taken into account half of electricity production of the nuclear power plant Krško.

Figure 57: Electricity consumption and production in Slovenia for the period 2011–2015



Source: ELES

The structure of electricity production on the transmission system has been for the last five years driven mainly by hydrological conditions and nuclear power plant outage management. In 2015 the import dependence of Slovenia significantly increased, mainly because of lower production in hydro power plants, a nuclear power plant scheduled outage, and partially because of trial operation of Unit 6 in the thermoelectric power plant in Šoštanj. Dependence on import was also a result of the higher availability of CBTCs offering the import of cheap electricity from Austria and Germany.

3.4.2 Monitoring investment in production capacities in relation to the security of supply

When planning the scenarios of future electricity consumption in Slovenia is to the greater extent possible taken in to account the ENTSO-E methodology, which defines four visions of development. Scenarios are primarily defined by macro-economic developments.

Scenarios with high objectives for the development of gross domestic product determine higher possibilities of investments related to efficient use of energy, renewable sources and other parameters that affect the scope of final electricity consumption. The results of the analysis of the system operator for the period 2015-2024 show the deficit of domestic production by all four scenarios at the similar level, which is mainly a consequence of the uneconomical operation of available domestic production. The difference will have to be compensated by the import from abroad.

Table 23 shows changes to be made by the Slovenian electricity producers as expected in the development plan of the transmission network for the period 2013–2022. The positive power values in the second column indicate new production facilities or a renovation of the existing facility, where an increase in the capacity is planned. The negative values indicate shutdowns of the concerned units. The sign in the last column presents the scenario or the development vision according to which the investment will be carried out. The investments in new production sources are set by taking into account the ENTSO-E methodology, which is also included in the forecast of electricity consumption in the coming years. According to the current situation the most realistic scenario is V2 implying that the electricity prices continue to be too low to allow investments in conventional production sources and the economic growth in Slovenia will not be high enough for large investments in RES.

Table 23: Changes to the production facilities on the transmission system

	Installed capacity (MW)	Expected year of change	Scenario
Hydroelectric power plants			
HPPs on the river Drava			
PSHPP Kozjak	403	2020	V 4
HPP on the river Mura			
Hrastje Mota	20	2019	V 4
HPPs on the river Sava			
Brežice	56	2017	V 1, 2, 3, 4
Mokrice	32	2019	V 3, 4
Moste 2, 3	48	2020	V 3, 4
Suhadol	41	2020	V 3 ,4
Trbovlje	33	2023	V 3, 4
HPP on the river Soča			
Učja	34	2021	V 4
Thermoelectric power plants			
TPP Brestanica			
TPP PB 1-3	–63	2017	
TPP PE VI-IX	80	2017	V 2, 3, 4
TE-TO Ljubljana			
Unit I, coal	–39	2020	
Unit II, coal	–29	2018	
Unit GPP	117	2018	V 2, 3, 4

Source: ELES

The Slovenian transmission system is well connected with the neighbouring power systems of Austria, Italy, and Croatia; net transfer capacities at borders in addition to the management of transit electricity flows also enable the provision of security of supply of domestic market. In the next five years is planned the connection with the transmission system of Hungary; this connection will increase the reliability of the operation of the Slovenian power system, the import transmission capacity, the reliability of the transmission system in this part of Slovenia as well as the reliability of the entire system in case of unplanned outages of larger production facilities or other unexpected events and operational difficulties when additional support through the Hungarian transmission system will be possible. The project will allow greater market integration in the region and facilitate the access to Eastern European electricity markets, which will in long term bring more favourable electricity prices for the Slovenian consumers.

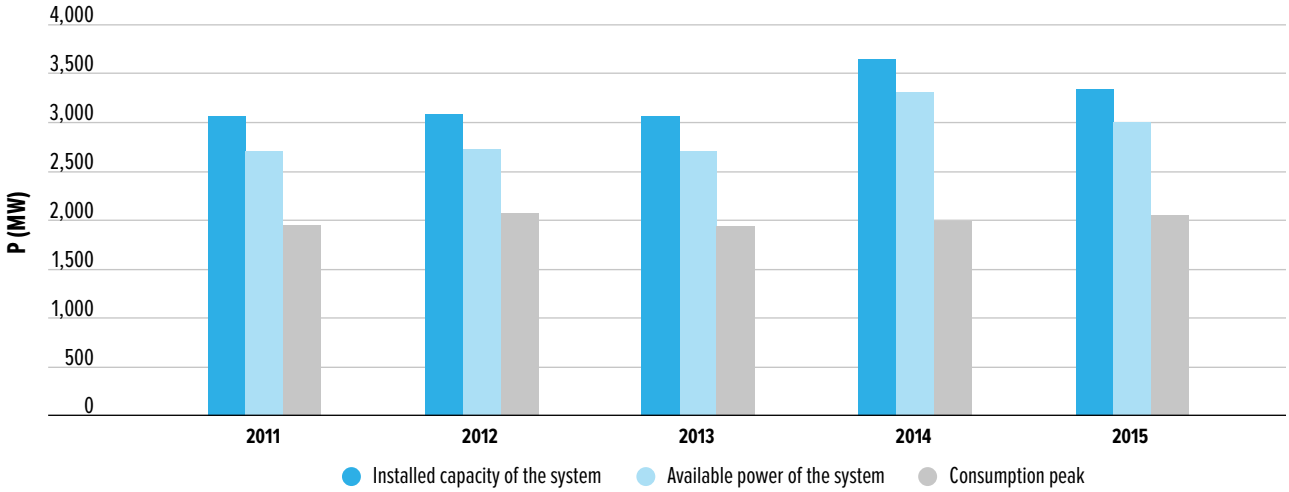
3.4.3 Measures to cover peak demand and shortages of electricity

Figure 58 presents the values of peak demand, installed capacity and available capacity for the Slovenian market in the period 2011–2015. Peak load in 2015 registered on 27 January at 20 p.m., in recent years does not change significantly; small fluctuations are among other circumstances the result of fluctuations in economic activities and meteorological deviations.

The difference between the installed capacity of the production facilities and actual available power represents one half of the power from the Krško NPP, which belongs to Croatia, in line with Article 6 of the Agreement between the Government of the Republic of Slovenia and the Government of the Republic of Croatia Regarding the Status and Other Legal Issues Relating to the Investments in

the Krško Nuclear Power Plant, its Exploitation and its Disassembly. The ratio between the installed capacity or available capacity of production sources and peak power is the indicator of availability of adequate production sources. The system must have at its disposal enough power to cover demand and reserve power at normal operation, and in the events of unforeseen circumstances. In 2015, the available capacity of production facilities on the transmission system slightly decreased, and with that the resistance of the system to interferences in case of production outages slightly decreased as well.

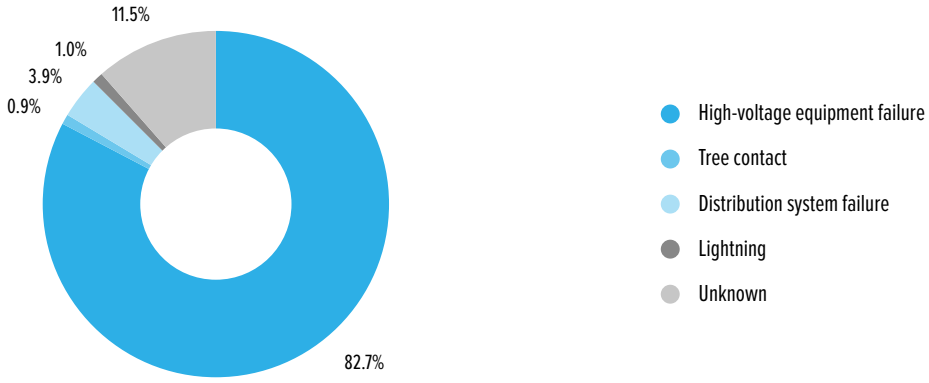
Figure 58: Installed capacity of production facilities, the power available for the Slovenian market, and the peak consumption on the transmission system in the period 2011–2015



Source: ELES

The volume of unsupplied electricity to the transmission system in 2015 amounted to 68.47 MWh. Causes, which led to the supply interruptions, are shown in Figure 59. Almost 83% of them was the result of the failure of high-voltage facility in DTS Pekre; on 8 June 2015 to the area of Koroška region and east Štajerska 56.61 MWh of electricity were not delivered because of this failure. Unsupplied electricity is calculated in accordance with Act on the rules for monitoring the quality of electricity supply, therefore it should be mentioned that actual volumes of unsupplied electricity may be lower than indicated since a significant share of consumers in the affected areas could be supplied by the medium-voltage network.

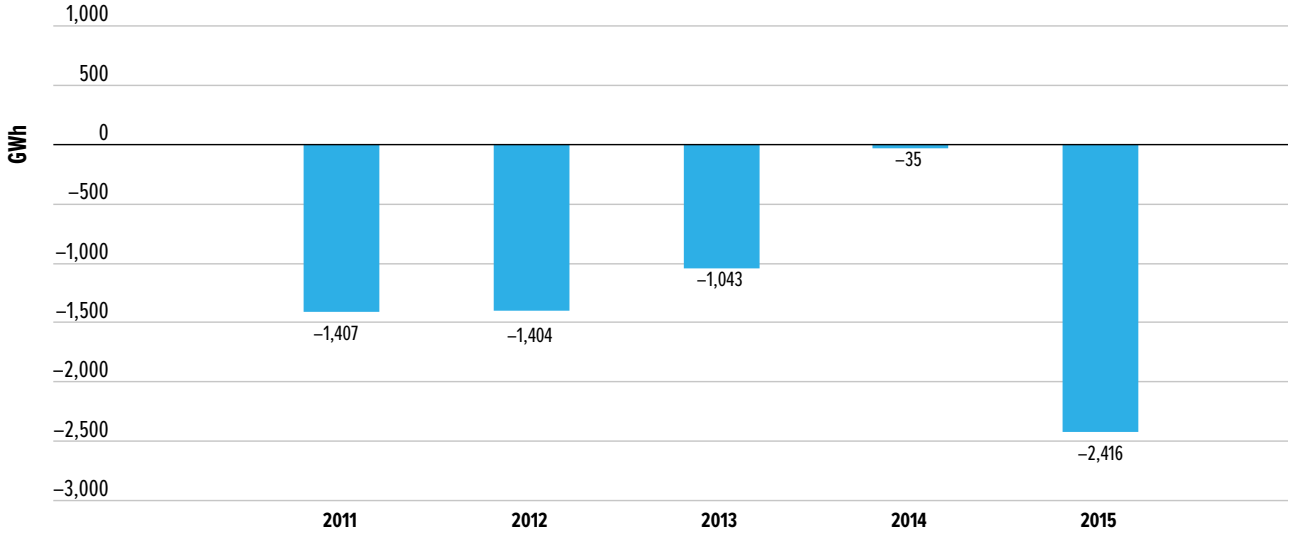
Figure 59: Unsupplied energy from the transmission system with respect to the causes



Source: ELES

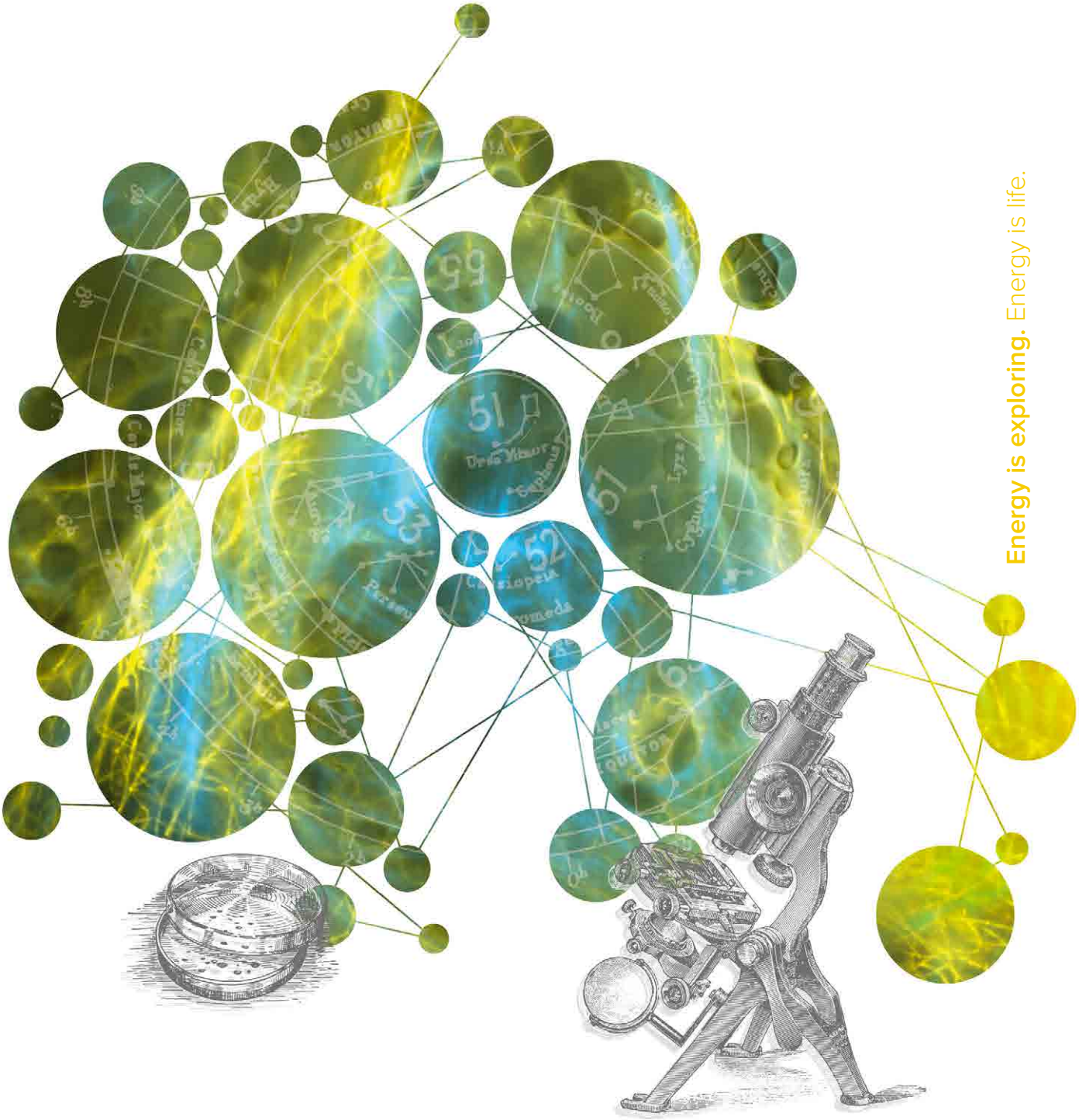
Domestic sources for electricity production in 2015 were not sufficient to cover the demand for electricity since one of the highest deficit of electricity in recent years was detected as shown in Figure 60. Nevertheless, the electricity supply was never interrupted as a result of a shortage of production sources since the Slovenian transmission system with its CBTCs enables the access to the neighbouring electricity markets.

Figure 60: Surpluses and deficits of electricity on the transmission system in the period 2011–2015



Source: ELES

4. Natural gas



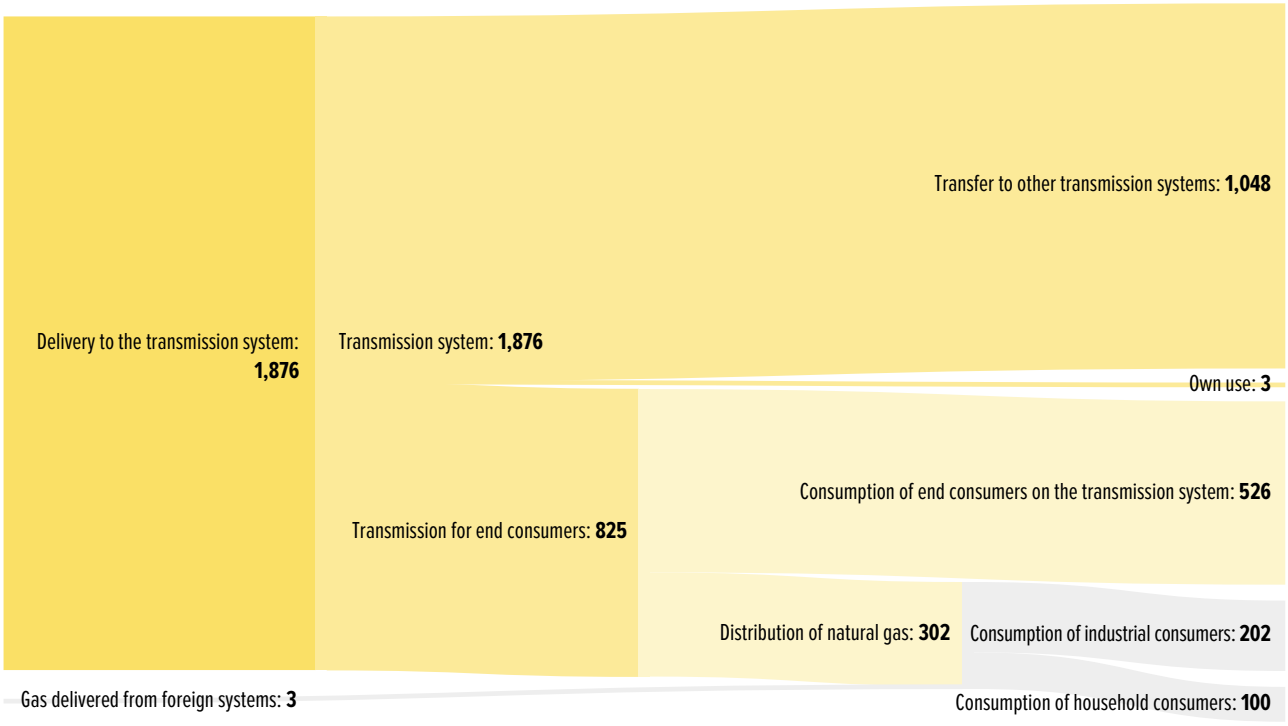
Energy is exploring. Energy is life.

4.1 The balance of natural gas supply and demand

In 2015, more gas was transferred through the transmission system than the previous year; also the consumption of this energy product was higher. More natural gas was consumed by industrial consumers, who are supplied directly from the transmission system, and also by those connected to distribution systems. Higher consumption is also recorded at household consumers.

In comparison with the previous year, slightly more gas was transmitted to other transmission systems.

Figure 61: Basic information about the transmitted, distributed and consumed amounts of natural gas



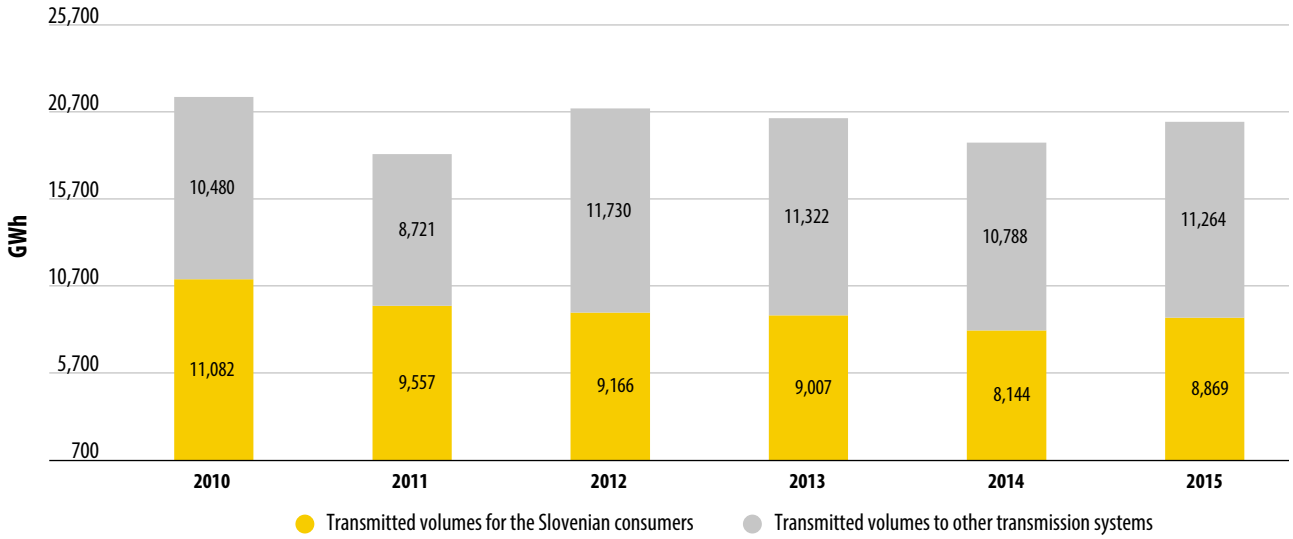
Source: Energy Agency

4.1.1 Transmission of natural gas

The transmission system is owned and operated by the TSO, the company Plinovodi, d.o.o. It consists of 946 kilometres of high-pressure pipelines with a nominal pressure of more than 16 bars and 209 kilometres of pipelines with a nominal pressure less than 16 bars. The transmission system also consists of 199 metering-regulation stations, 41 metering stations, seven reducing stations, and compressor stations in Kidričevo and Ajdovščina. The Slovenian gas transmission system is connected with the gas transmission networks of Austria (the Ceršak MRS), Italy (the Šempeter MRS) and Croatia (the Rogatec MRS). Border points are at the same time relevant points of the transmission system. The fourth relevant point is the exit point in Slovenia. The entire transmission network is one balancing area. For trading of natural gas in the wholesale market the virtual trading point was established.

In 2015, the TSO had transferred 8869 GWh of natural gas for the Slovenian consumers, which was 9% more than the year before. In that way, a multi-annual trend of decreasing consumption of natural gas stopped. The transfer of gas to the neighbouring systems also increased in comparison with the previous year. Nevertheless, the natural gas consumption was still by 25% lower than the highest consumption before the financial and economic crisis, and transfer of gas to neighbouring systems lower by 37%.

Figure 62: Transported natural gas volumes in GWh



Source: Energy Agency

4.1.2 Distribution of natural gas

In 2015, the distribution of natural gas was performed in 79 municipalities in the greater part of the urban areas in Slovenia, with the exception of Primorska region (Slovenian Littoral Region). By the end of May 2015, the distribution was carried out by 16 gas DSOs, after that the number dropped to 15. In the municipality of Škofja Loka, the Loška Komunala company at the end of May handed over the distribution system to new concessioner, Petrol company. In 64 municipalities this activity is organized with a concession act between the concessionaire and the local community, in 14 municipalities was performed by public companies, and in one municipality as an investment of public capital into the activity of private law. In the local community of Šenčur, service of general economic interest was provided by two system operators in three areas on the basis of concession contracts signed with the municipality. In individual local communities the concessions for the provision of the service of the gas DSO were awarded; however, the gas distribution was not carried out, as the distribution networks were not yet ready for use.

In 2015, there was a total of 4633 kilometres of gas distribution pipelines with different pressure levels, which was 2.2% more than the previous year. The length of the pipelines and the pressure are shown in Table 24. The distribution pipelines, together with the corresponding facilities, are mainly owned by the system operators.

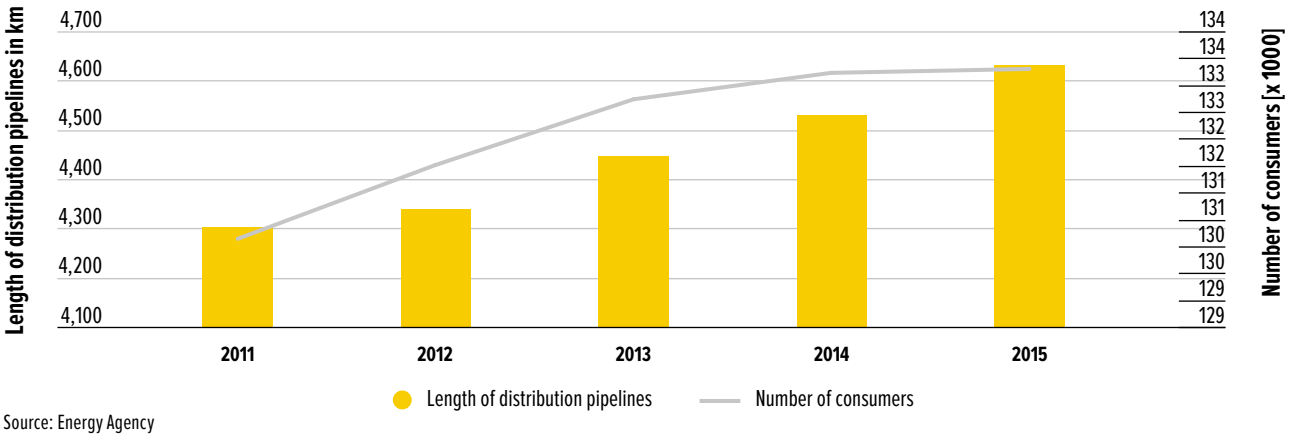
Table 24: Distribution lines, metering and metering-regulation stations

Length of the network with pressure level between 4 and 16 bar	**48 km**
Length of the network with pressure level between 1 and 4 bar	1,607 km
Length of the network with pressure level up to 1	2,977 km
Number of metering stations	19
Number of metering-regulation stations	181

Source: Energy Agency

Figure 63 shows the increasing in length of distribution pipelines together with grid connections and growth in the number of consumers in the period 2011–2015

Figure 63: Length of distribution pipelines and number of consumers in the period 2011–2015



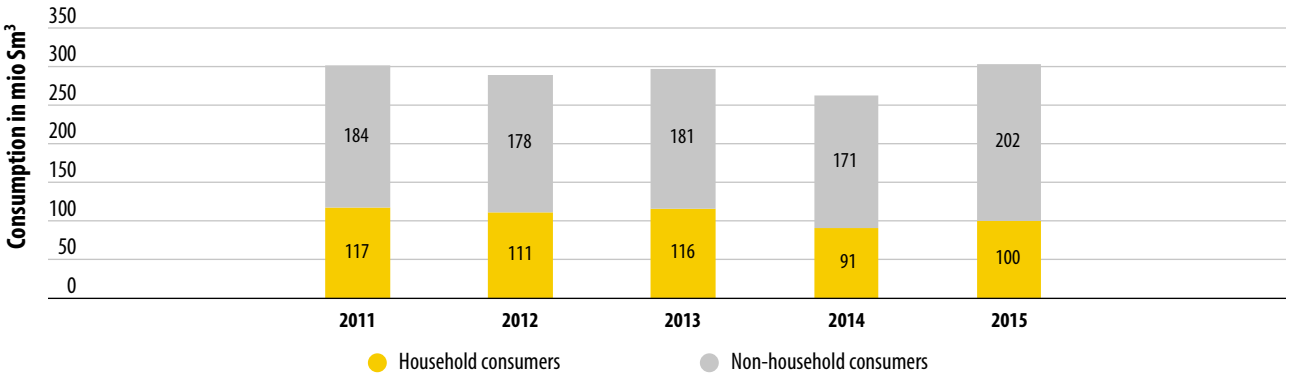
Source: Energy Agency

At the end of 2015, 133,312 end consumers were connected to the natural gas distribution networks, slightly more than in 2014. A number of consumers on the distribution networks has been rising since 2008, but yearly increment decreases. In 2015 there were only 82 new consumers, while in 2013 there were 1383 new consumers. The number of household consumers was 118.719, and compared to 2014 decreased by almost 0.3%. This was the second fall since 2008. There were 14,593 business consumers, which is about 3% more than the previous year. Since 2011 to 2015 the number of new connections almost halved, and in 2015 this number was almost equal to the number of disconnections, which in recent years has significantly increased.

Despite the fact that natural gas is cost-competitive energy source, the number of new consumers is not increasing. The reasons for not many connections to natural gas are very likely to be found in wide variety of new competitive technologies. Other obstacles are the vague local energy concepts, which allow subsidizing competing technologies in areas with organised distribution of natural gas, and ignorance of environmental impacts of each technology in individual cases. An additional problem is the fact that high efficiency innovative gas technologies presented rather long time ago is not yet known or even too expensive for general consumption and because of that cannot successfully compete with other sources.

Gas DSOs in 2015 distributed almost 302 Sm³ of natural gas, which is the third highest volume after 2004. Compared to 2014, distributed volumes increased by almost 15%. Households consumed almost 10% more, and non-household consumers almost 18% more. Part of the increased spending can be attributed to climate influences, but an addition consumption is detected on behalf of non-household consumers. The consumption of household and non-household consumers in the period from 2011 to 2015 is shown in Figure 64.

Figure 64: Consumption on the distribution network depending on the type of consumption



Source: Energy Agency

Household consumers were using gas mainly for cooking, sanitary hot water and heating. In 2015, 96.5% of all consumers used less than 4500 Sm^3 and 91% less than 2500 Sm^3 of gas. 3.5% of consumers with annual consumption more than 4500 Sm^3 used 67% of the total annual consumption of gas of consumers connected to the distribution networks.

4.2 The regulation and regulated services

4.2.1 Unbundling

In 2015 in Slovenia the service of general economic interest of gas TSO was performed by one entity. The service of general economic interest of gas DSO was carried out by 16 entities, while in the second half of the year the number was reduced to 15 due to changes in the municipality of Škofja Loka.

The gas TSO performs its activity as an independent legal person, and it is 100% owned by a domestic legal person supplying natural gas. It owns the assets with which it carries out its functions. The gas TSO is certified and designated as in independent transmission system operator.

For gas DSOs legal separation of activities is not required since the number of connected consumers does not exceed 100,000.

Natural gas companies are required to prepare annual financial statements according to the Companies Act and submit to audit and make public.

Since the operators of distribution systems were also engaged in other energy and market activities must, therefore, prepared separate accounting statements.

In the notes to the audited financial statements, the DSOs must disclose the criteria for the allocation of the activities identified by the internal company's acts and that were used in the preparation of separate financial statements. Audited annual reports have to include the rules used for the production of separate accounts by energy-related activity. The use of the listed rules for producing separate accounts has to be examined by an auditor. System operators must submit to the Energy Agency audited annual report and special report by the auditor within eight days of receipt of auditor's report or no later than six month after the end of the calendar year.

4.2.2 Technical functioning

4.2.2.1 Balancing services

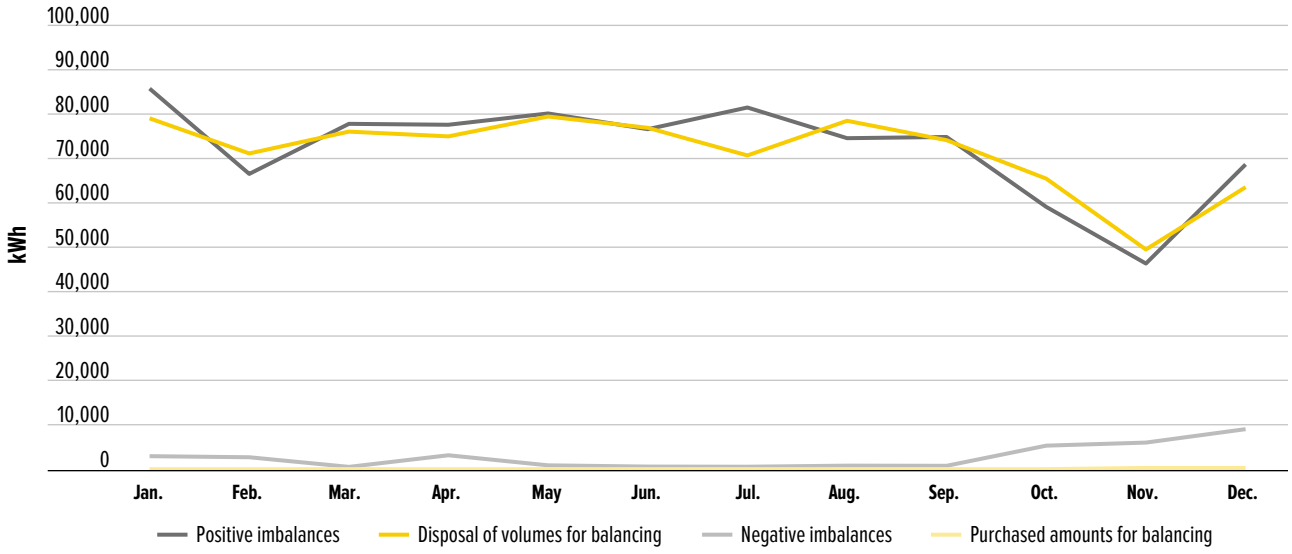
In October 2015, new rules on gas balancing entered into force; the rules are in compliance with European network code on gas balancing of transmission networks (Regulation (EU) No 312/2014). The gas TSO specified new rules in System operating instructions for natural gas. The effects of the new rules were evident in the last three months of the year 2015.

Until the new rules came into force, imbalance of the leaders of balancing group were split between positive/negative imbalance, or allowed or non-allowed daily imbalance and cumulative monthly imbalance. For allowed imbalance three limit zones that depend on the month of the year were determined. New rules introduced the following important novelties: the tolerance level are cancelled and with that also non-allowed daily and cumulative monthly imbalance; rules allow re-nomination procedure within-day, and trading of surpluses; the flow of information is improved. With the new rules, the leaders of balancing groups have much better possibilities for balancing their portfolios.

Among 15 registered holders of balancing groups six of them were regularly active, five were active for one or three months, four of them were inactive. The gas TSO charged for imbalance amounts and took care for balancing of the system by buying and selling gas in the fourth quarter of 2015 through the trading platform. The entire transmission network is one balancing zone; imbalance are charged on a daily basis.

In 2015, a sharp disparity between positive and negative daily imbalance occurred, since on annual level surplus of quantities was 26 times higher than shortage of quantities. This practice is the result of the old rules, which did not allow the necessary changes of gas prices for positive and negative imbalance as well as changes in market price for balancing of transmission system. New rules, which determine the market price of daily imbalance and for balancing the system, in the fourth quarter slightly decreased the difference between surpluses and deficit, but effectiveness of the new rules will be disclosed in 2016.

Figure 65: Amounts for imbalances and balancing services

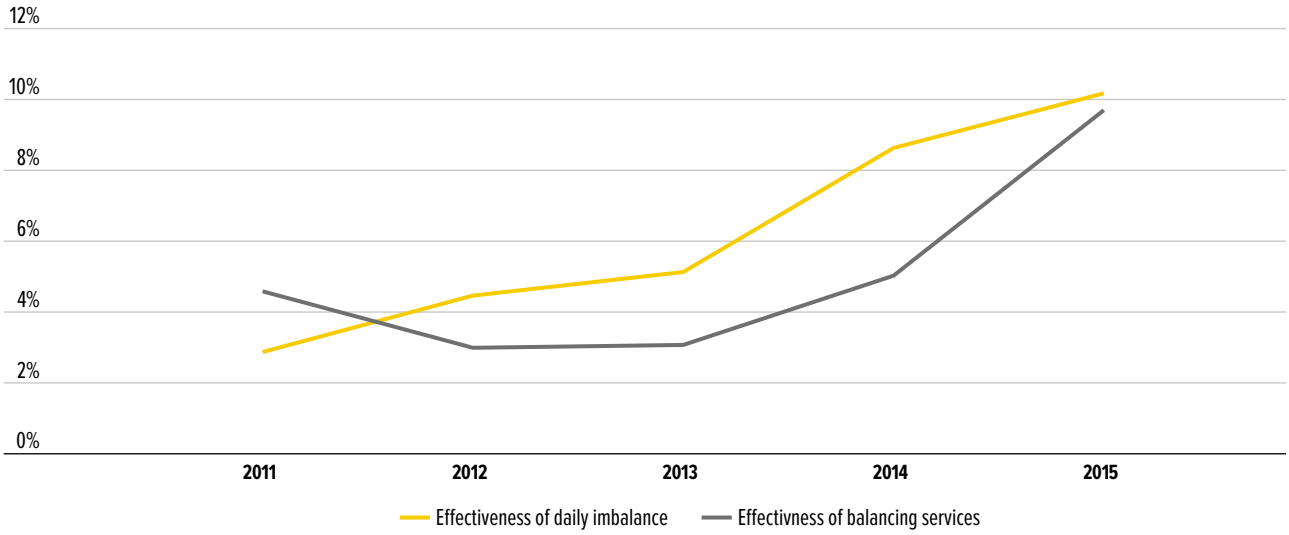


Source: Energy Agency

Until October 2015, the gas TSO was carrying out the balancing services by buying and selling the amounts in accordance with the three-year contract, which terminated at the end of 2015. With the implementation of the new rules, the gas TSO started to balance the transmission system also by trading on a trading platform. Since balance group responsible parties mostly oversupplied gas to the transmission system, the gas TSO had to dispose of excess quantities of the transmission system.

Performance of imbalance settlement (the ratio between the quantities for daily imbalance settlement and transferred quantities for consumers in Slovenia), as well as the performance of balancing services (the ratio between quantities for settlement and transferred quantities for consumers in Slovenia in 2015 even worsen (Figure 66). The reason was non-allowed positive imbalance, which were until October 2015 almost five times higher than allowed positive imbalances, while non-allowed negative imbalance were more than three times lower than allowed negative imbalances. Thus, the amounts for balancing daily imbalances in 2015 for the first time exceeded 10% of the transferred amounts of natural gas for consumers in Slovenia. Only slightly less (9.7%) totalled the amounts of gas needed for balancing the transmission system. The outcome of balancing was in comparison to quantities used by domestic consumers almost two times lower than in 2014.

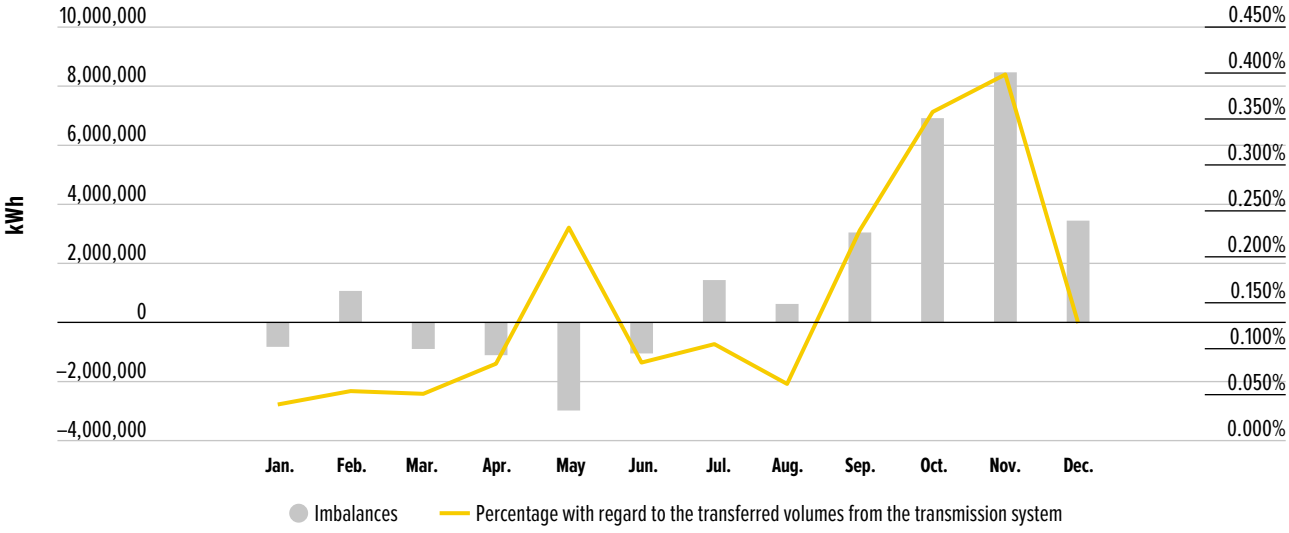
Figure 66: Effectiveness of daily imbalance and balancing services



Source: Energy Agency

Balancing differences (imbalances) in 2015 amounted to 31.9 GWh, of which 78% were positive imbalances. A marked increase of imbalances in the last quarter of the year can be noticed, when they had reached 0.4% of all transferred volumes from the transmission system.

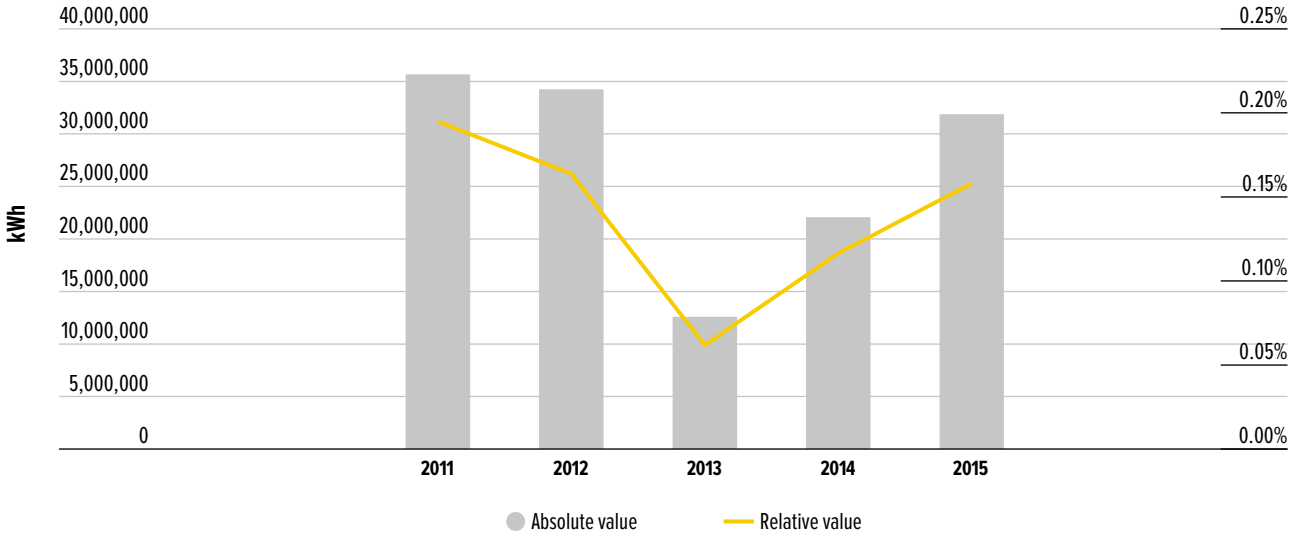
Figure 67: Imbalances in 2015 by months



Source: Energy Agency

In the observed five-year period, a trend in imbalances after 2013, when it reached its lowest point, started to increase again. In the past year, the amounts of imbalances with regard to total transmitted volumes from the transmission system almost equalized with the value in 2012.

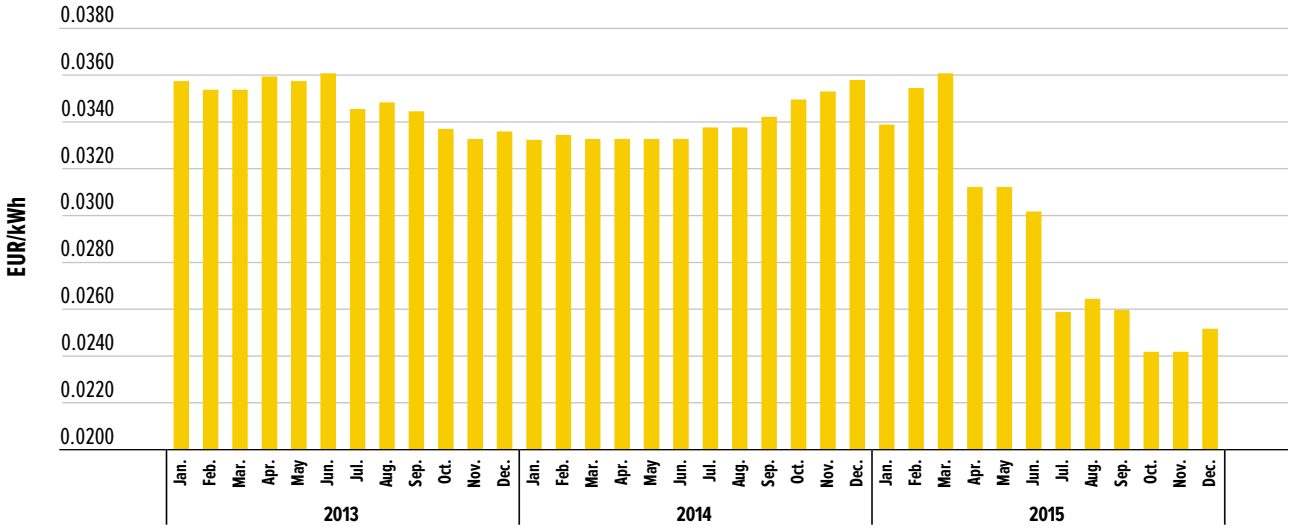
Figure 68: Fluctuations of imbalance from 2011 to 2015



Source: Energy Agency

The grounds for settlement of imbalances, the differences and own use is the basic price of natural gas CB, which was in 2015 on average 0.0292 EUR/kWh, which is about 14% less than the previous year.

Figure 69: Basic price movements C_B in the period 2013–2015



Source: Plinovodi

The gas TSO did not have an access to storage facilities or a terminal for liquefied natural gas, and did not provide flexible internal capacity.

4.2.2.2 The secondary market for transmission capacity

After changing the rules governing the functioning of the secondary market at the end of 2014, trading in the secondary market was carried out at borders entry-exit points. Trading at entry points accounted for nearly two thirds of all subleased capacity; out of that the trading at the entry point Ceršak accounted for 98% of all subleased entry capacity.

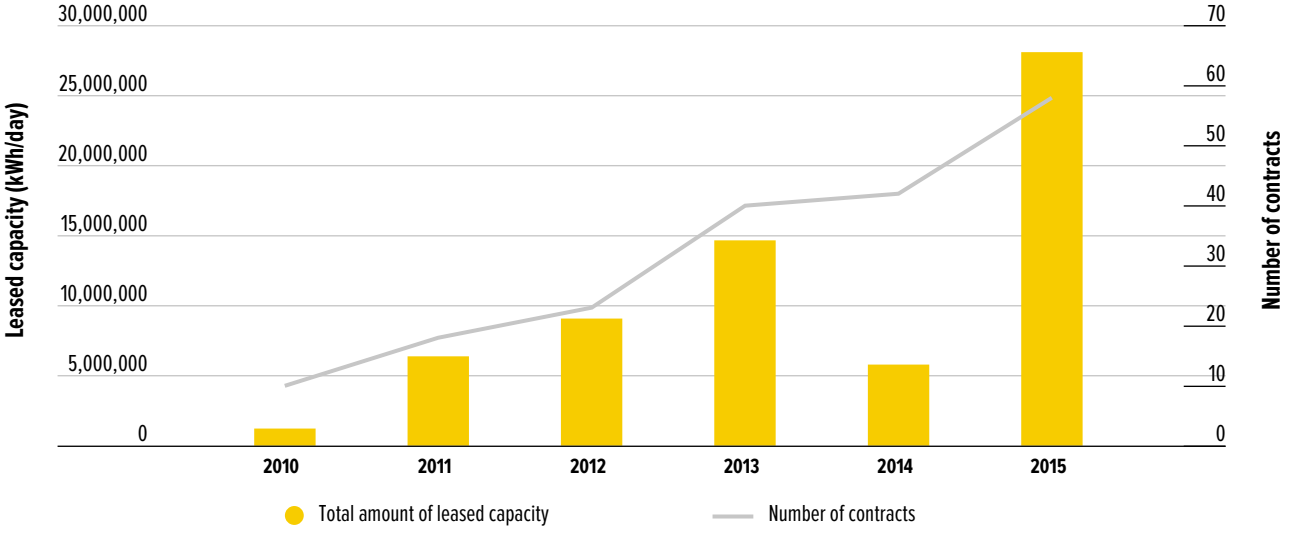
Table 25: Trading of transmission capacities in the secondary market

	Border entry points	Border exit points
Number of transmission capacity providers	25	4
Number of bids	48	12
Total amount of offered capacity in v kWh/day	17,371,097	10,852,000
Number of enquirers for capacity	24	4
Number of enquires	46	12
Total amount of enquired capacity in kWh/day	17,258,957	10,852,000
Number of providers who sold transmission capacity	24	4
Number of enquirers who leased capacity	17	5
Number of signed contracts for sublease	46	12
Total amount of subleased capacity in kWh/day	17,258,957	10,852,000
Number of refused subleases	0	0

Sources: Energy Agency, Plinovodi

In 2015, 58 sublease contracts were signed, which was 38% more than the previous year. The biggest changes happened at the exit point Rogatec, where in 2014 no trading was carried out, and in 2015 subleased capacity accounted for 10.8 GWh/day.

Figure 70: Development of the secondary capacity market



Sources: Energy Agency, Plinovodi

4.2.2.3 Planning of non daily metered off-takes

In accordance with the network codes on gas balancing of transmission networks the Energy Agency as the regulatory authority in October designated the gas TSO, company Plinovodi, as the forecasting party in balancing zone in the Republic of Slovenia.

The forecasting party is responsible for forecasting a network user's non daily metered off-takes and where appropriate its subsequent allocation, and for preparation of the forecasting methodology.

4.2.2.4 Multi-annual development of the transmission network

4.2.2.4.1 The investments in the natural gas transmission system

Investment activity of the gas TSO in 2015 slowed down; mainly the activity consisted of the preparation for the implementation of the projects from the development plan in the next few years. Thus, the gas TSO in 2015 for the construction and reconstruction of the transmission system allocated only € 4.4 million, which is 14% of the amount from 2014. All required funds were provided by the depreciation of fixed assets.

The Energy Agency issued an approval to the development plan (Ten-Year Network Development Plan of the gas transmission network for the period 2016–2025). This development plan is in compliance with the Ten-Year Network Development Plan by ENTSOG.

In 2015, the gas TSO for the first time submitted also an investment plan (The investment plan for the period 2016–2018), which was prepared in accordance with the methodology for the preparation and assessment of the investment plan. The Energy Agency approved the investment plan, and at the same time issued an approval to the development plan.

Table 26: More important investments activities in the period 2016–2018

Project	Activities
Management centre	Technical upgrade and integration of management systems
M5 Vodice–Jarše, R51 Jarše–TE-TOL	Connection of thermal power plant
MRP Godovič	Connection of DSO in the Municipality of Idrija
MMRP Rogatec – upgrading	Provision of bi-directional capacity with reverse flow
CNG	Connection of compressed natural gas filling stations

Sources: Energy Agency, Plinovodi

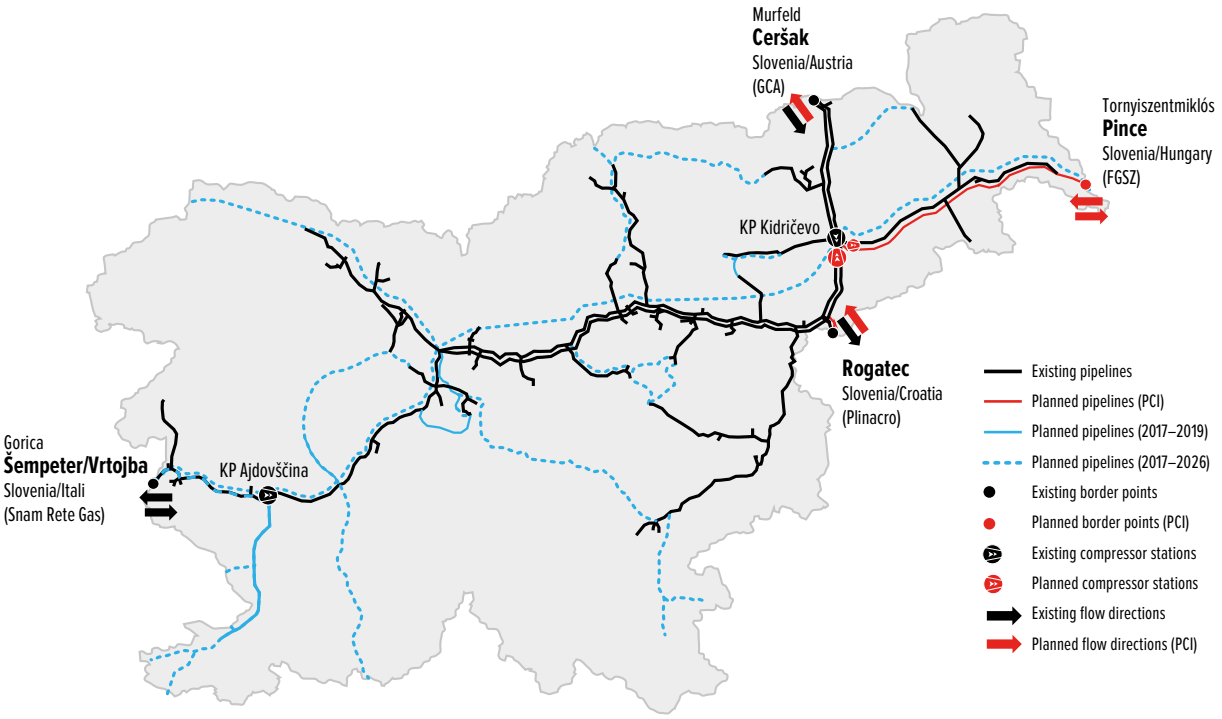
Among the projects, which the gas TSO proposed for obtaining the status of projects of common interest (PCI), the Annex to Commission Delegated Regulation on guidelines for trans-European energy infrastructure as regards the Union list of projects of common interest from the end of 2015 approved the following projects:

- Slovenia–Hungary interconnection (R15/1 Pince–Lendava–Kidričevo);
- Cluster Croatia–Hungary–Slovenia; among which are three Slovenian projects (2nd phase of the extension of Kidričevo compressor station, reconstruction of border point Ceršak and border point Rogatec).

The implementation of approved PCI projects is to large extent tied to the building of LNG terminal on island Krk, as well as terminal capacity and expressed interest for the transportation of gas from this terminal.

The gas TSO among large projects in the future also foresees a connection between the municipalities of Ajdovščina and Lucija, which would allow gasification of Primorska Region.

Figure 71: Existing and planned facilities of the transmission network in coming years



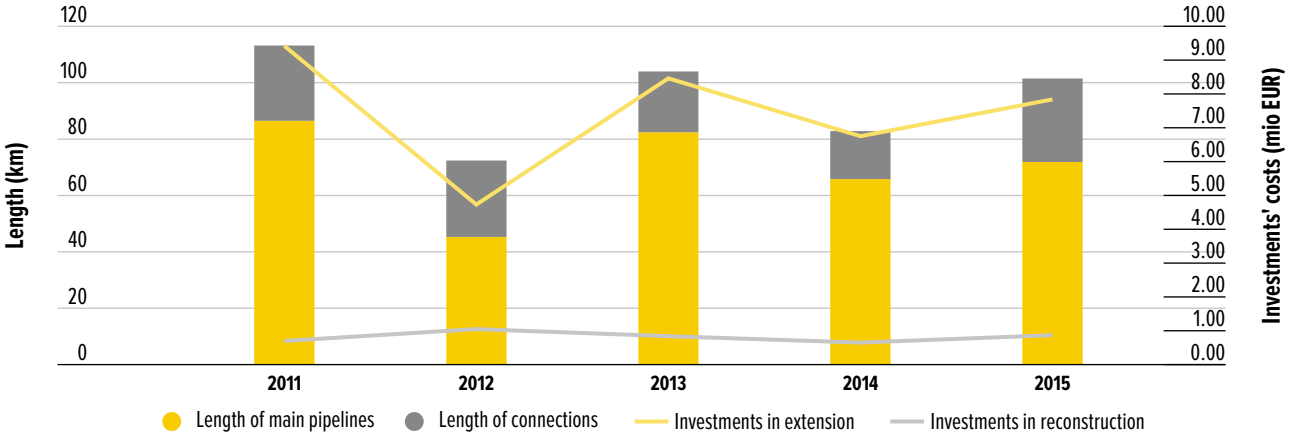
Source: Plinovodi

4.2.2.4.2 The investments in the natural gas distribution systems

For the extension of the systems the gas DSOs built 101 kilometres of new pipelines, which is 22% more than the previous year. In the last three years, the downward trend in the construction of new pipelines, which started with the economic and financial crisis, is slowly ending, however, the annual increment of new pipelines in relation to the total length of pipelines is small since it amounted to only 2%.

Four kilometres of pipelines were reconstructed. The total value of investment was € 8.7 million, of which investments in the extension of distribution systems amounted to € 7.8 million, or 90% of all investments.

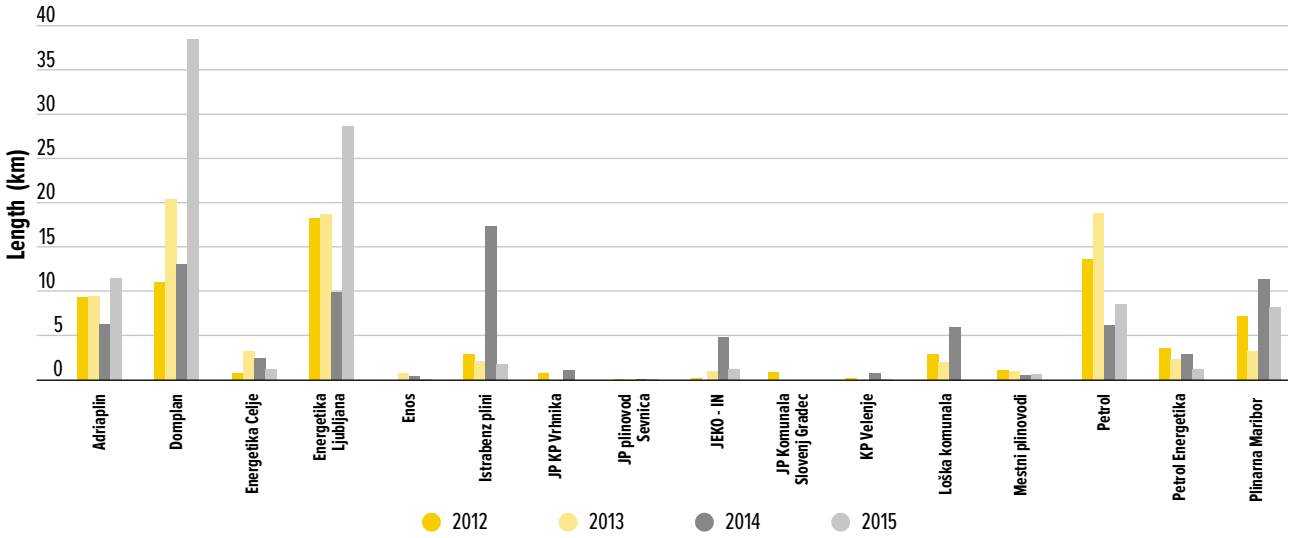
Figure 72: Trend of building new pipelines and investments costs



Source: Energy Agency

Figure 72 shows the intensity of the construction of new pipelines by individual DSO. Five DSOs is more active in building new pipelines. On average, each DSO in 2015 built 6.3 kilometres of new pipelines.

Figure 73: Length of new distribution pipelines in the period 2012–2015

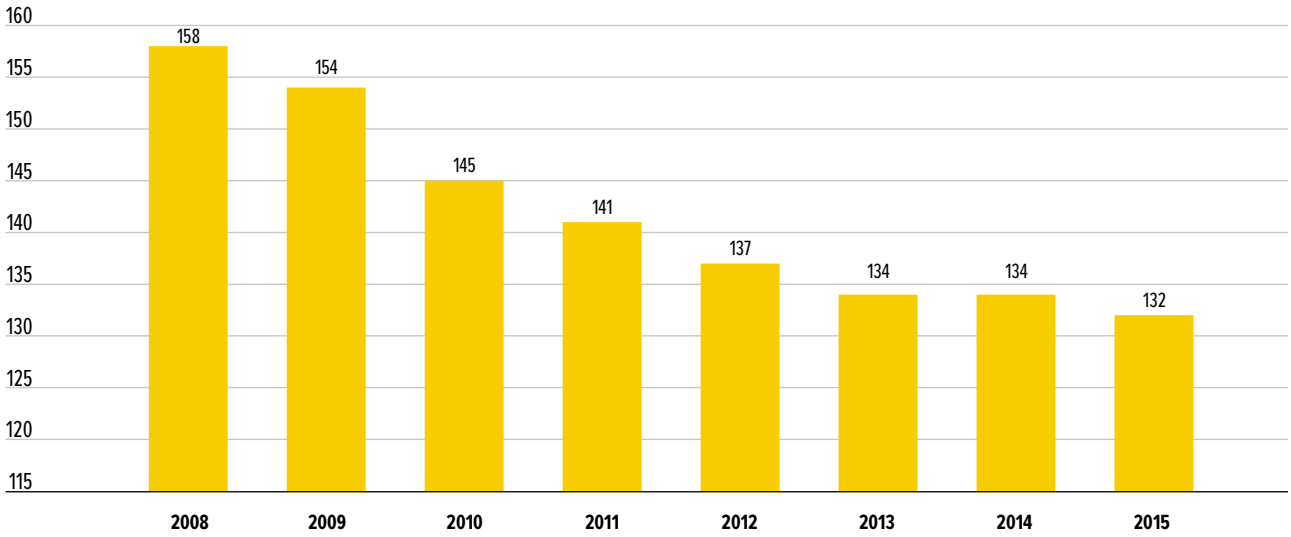


Source: Energy Agency

4.2.2.5 Security and reliability of operation and quality of supply

In 2015, two industrial consumers were disconnected from the transmission system, one industrial customer went bankrupt. The number of final consumers, connected directly to the transmission system, is continuing to fall.

Figure 74: Number of end consumers on the transmission system



Source: Energy Agency

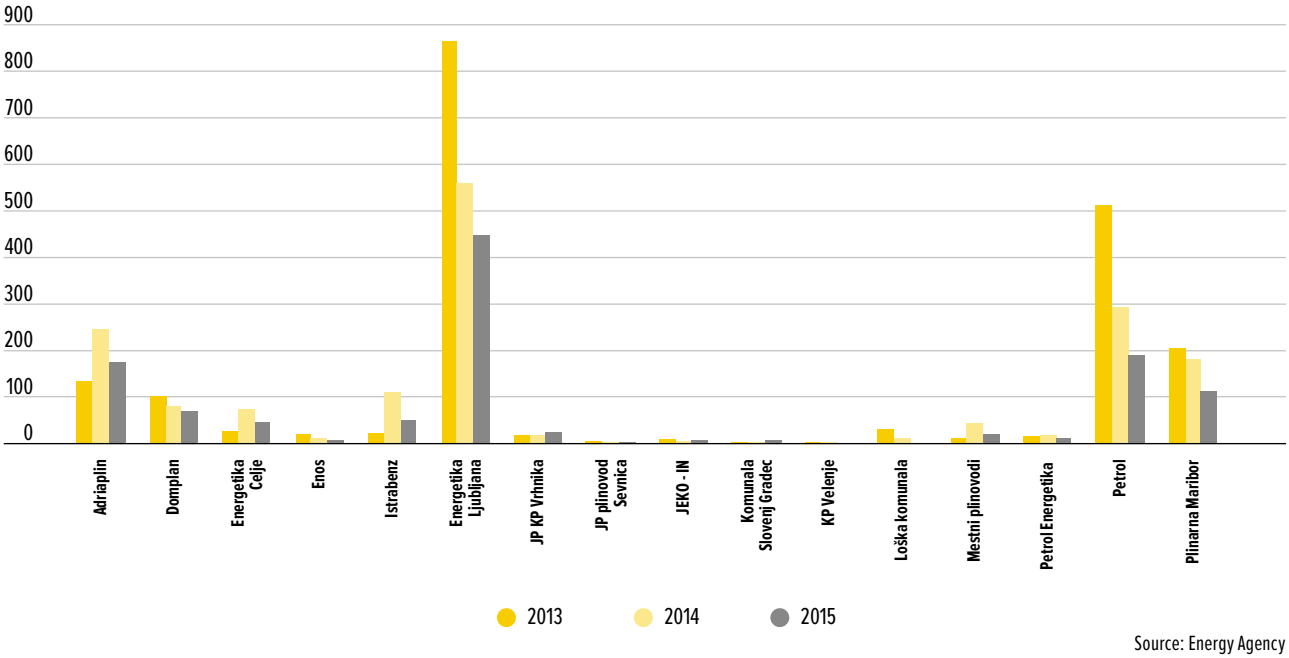
The maximum daily peak load of the transmission system was detected on 9 February 2015 and was 1,788,832 kWh/h. The transmission was carried out in accordance with plans and without any operational disruptions.

Like the previous year, the direction M1-Rogatec towards Croatia was the most heavily used transmission path. In this point, the highest daily technical utilisation of capacity was measured, reaching 79.3%, which was for 12% less than in the previous year. The highest monthly technical utilisation of capacity, 78.1%, occurred in the exit point Rogatec, and was 9.1% higher than the year before. Average annual utilisation of transmission capacities was the highest in the direction to Croatia, amounted to 44.3%.

The gas TSO carried out 12 pre-planned works on the transmission system and 320 unplanned works. Due to planned works, in one case the delivery was suspended for 48 hours. Because of unplanned works in duration of 789 hours, there were no interruptions of supply.

In 2015, the gas DSO connected 1168 new customers, almost 30% less than the previous year. The number of new consumers in period 2013–2015 is shown in Figure 75.

Figure 75: The number of new consumers on the distribution systems from 2013 to 2015



Source: Energy Agency

The connection procedure for new consumers lasted on average 25 days after the submission of application for connection to the distribution system. The DSO that need the longest time to connect consumers the whole procedure took on average 60 days. The physical connection to the network was made on average less than seven days, and by11 DSOs the connection was made in less than three days.

The gas TSO in 2015 issued 13 approvals for connection, and carried out six connections to the transmission network. The average duration of physical connection was 49 days, together with the administrative procedure 63 days.

By performing regular and unplanned maintenance the gas DSOs provided reliable and safe operation of the networks. DSOs carried out more than 4100 different works, which lasted almost 110,000 hours. In comparison with the previous year, the number of planned works, which were carried out, decreased by 9%, and the time altogether was reduced by almost 7%.

Planned works resulted in 1368 hours of gas supply interruptions to consumers; seven operators did not have any interruptions, and four operators had less than 20 hours of disruptions. The recorded time of individual interruption was at least one hour and not more than 72 hours.

There were 425 unplanned interventions, or almost 10% less than the previous year. The average duration of interruptions ranged from less than two and up to 38 hours. Interventions on the network as a result of force majeure or third-parties caused 83 gas supply interruptions of 12 operators, in a total duration of 482 hours. The duration of such interruptions increased by almost 30% compared to the previous year. According to the collected data, three DSOs did not have such interruptions.

4.2.3 The network charges for gas transmission and distribution systems

4.2.3.1 Setting the network charge

The network charge for the transmission and distribution systems is set by the system operators within the regulatory framework with the approval given by the Energy Agency. The foundations for setting the network charge for 2015 for the transmission system were in 2015 provided by Act Determining the Methodology for Setting the Network Charge and the Criteria for Establishing Eligible Costs for the Gas Transmission Network, and the Act Determining the Methodology for Charging for the Network Charge for the Gas Transmission System, and for the distribution systems Act Determining the Methodology for Setting the Network Charge and the Criteria for Establishing Eligible Costs for a Gas Distribution Network, and the Act Determining the Methodology for Charging for the Network Charge for a Gas Distribution Network. All four legislative documents were prepared and adopted by the Energy Agency.

In the methodologies for setting the network charge the mode, conditions and method of setting the network charge, and the criteria for establishing the eligible costs of the system operator, which include also incentives for more efficient operation of the system operator.

When setting the network charge the method of regulated network charge is used, which determines a causal relationship between the eligible costs and the revenues of the system operator. Network charge, which was 2015 a part of the price for the use of the network is an annual revenue of the system operator, used for covering the eligible costs of a system operator as a provider of service of general economic interest.

System operators for the regulatory period, which is determined on the basis of the methodology setting the network charge, establish the regulatory framework in a way that with the network charge the costs for carrying out the activities of the system operator. These includes costs of the operation and maintenance, depreciation costs and regulated return on revenues. In setting the network charge, the system operators take into account also other incomes from operating activities as well as surpluses and deficits of the network charge from previous years. For 2015, the gas TSO in the regulatory framework set the eligible costs in the amount of € 49.8 million, and gas DSOs all together in the amount of € 57.5 million. System operators must after each calendar year identified the deviation from the regulatory framework for relevant calendar year. Derogations from the regulatory framework are determined as the difference between planned and actual eligible costs of the system operator and difference between planned and actual financing sources for covering eligible costs. The Energy Agency must issue a separate decision if it concludes that derogations were not calculated in accordance with the methodology.

In 2015, the Energy Agency issued two general acts, separately for the transmission and for the distribution systems, which determine the methodologies for establishing the regulatory framework for the period 1 January 2016 – 31 December 2018 and which set the criteria for establishing the regulatory framework and the method of determination. The Energy Agency approved the gas TSO regulatory framework, in which the gas TSO set the eligible costs for the three-year period in the amount of € 181.6 million as well as approved the regulatory frameworks of the gas DSOs, in which a total of € 163.4 million eligible costs for the three-year period were set.

4.2.3.2 The network charge for the natural gas transmission system

The network charge for the gas transmission system depends on the leased contractual transmission capacity, the transported volumes of natural gas, the type of metering device used, and taking into account other parameters of the methodology for charging the network charge. The users of the transmission system are charged for the following:

- network charge for entry points;
- network charge for exit points;
- network charge for own use;
- network charge for measurements.

The network charge tariffs are determined by the gas TSO before the start of the regulatory period of each year of the period and with the Energy Agency's prior consent to the regulatory framework.

The method for setting the network charge for entry and exit points is based on the method of entry-exit points, which means a system of uniform tariffs for individual entry or exit point. Calculation of the network charge for entry and exit points takes into account the leased contractual capacity.

In accounting the network charge for standard capacity products, which determine daily, monthly and quarterly lease of capacity, is in addition of the network charge also considered the network charge factor. The charging for the interruptible capacity is conducted in way that in the event of termination or reduction of the contractual capacity the gas TSO charges the system user the network charge with the corresponding amount of discount.

The entry and exit network charges for 2015 increased by 2.1% in comparison with 2014. Entry tariffs are charged for the purchase of entry capacity. In 2015, entry tariffs for border points (Rogatec, Šempeter in Ceršak) were determined and ranged from 0.07809 to 0.10737 EUR/kWh/day. Entry tariff for points in Slovenia was not set since natural gas did not enter the transmission system in Slovenia. Exit tariffs for border points were between 0.08616 in 0.09663 EUR/kWh/day. Exit tariff for the exit points in Slovenia amounted to 0.39976 EUR/kWh/day.

4.2.3.3 The network charges for the natural gas distribution systems

Consumers connected to the distribution systems pay the network charge to the system operators; the network charge includes the costs related to the use of the transmission system at the exit points in Slovenia. When setting the network charge the method of regulated network charge is used, which determines a causal relationship between the eligible costs and the revenues of the system operator.

Tariffs for the distribution networks are unified for individual consumers groups for individual geographical areas, where a DSO carries out the distribution activity. Tariffs of the same DSO may differ only in cases where the systems are not comparable. Prices for all typical customers in different areas are not the same as the prices reflect different costs of DSOs in the individual geographical area. Individual consumers groups are defined in line with the methodology for charging for the network charge.

Tariffs for the distribution networks were determined by the individual acts on setting the network charge for the distribution system and for individual areas. The acts were published in the Official Gazette of the Republic of Slovenia after obtaining the approval by the Energy Agency.

In 2015, in 79 municipalities 24 acts on setting the network charge for the distribution system were used.

The network charge for the distribution depends on the leased distribution capacity and power, distributed volumes of natural gas, the metering device and other parameters under the methodology for calculation of the network charge.

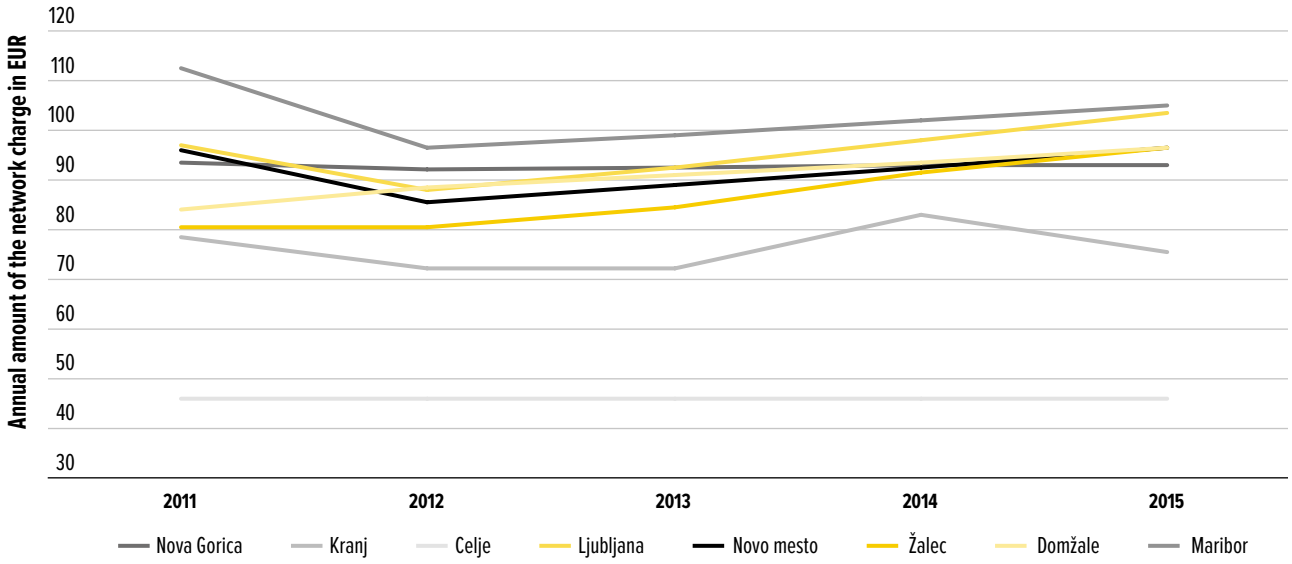
DSOs charged for the network charge by disclosing separately:

- the amount of natural gas distribution;
- the amount of measurements, which were carried out.

In 2015, all gas DSOs provided a separate disclosure of the network charge and the amount supply and taxes.

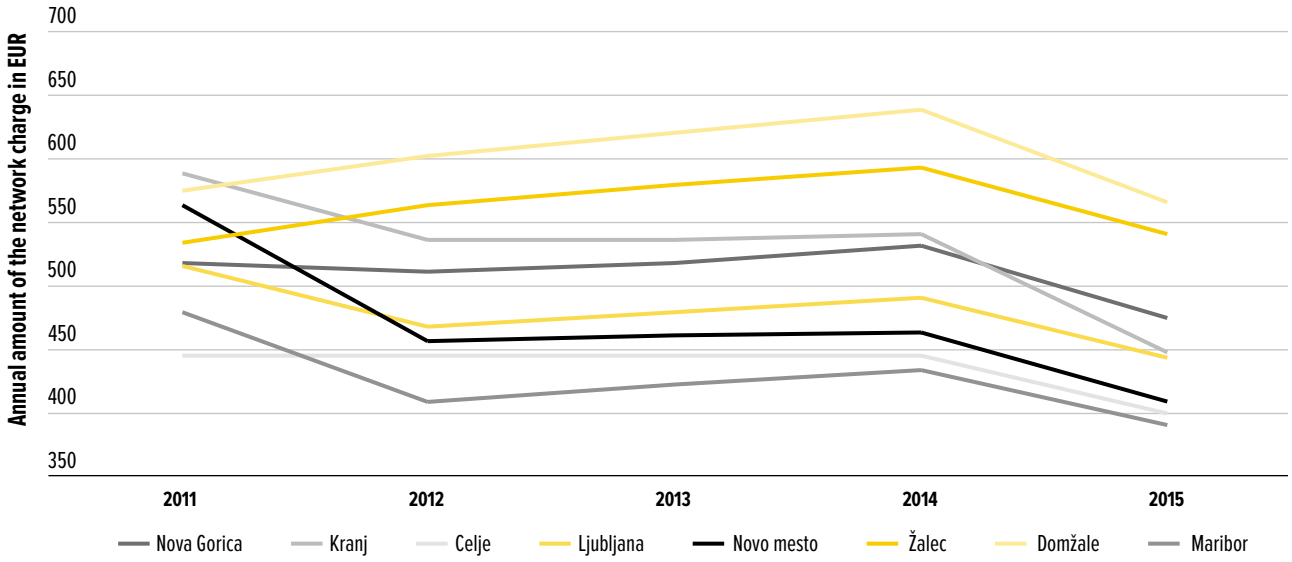
In Figures from 76 to 79 the distribution network charges for a typical household consumer and medium-sized industrial consumers in the period from 2011 to 2015 in the eight largest municipalities are presented; in these municipalities more than 72% of all consumers are supplied with gas. Movements of charges show relative costs stability. In this area of distribution, on average the network charge for small household consumers (consumer group D1, annual consumption 350 Sm^3) on annual level increased by almost 4%, and decreased by around 13% for medium-sized household consumers (group D2, annual consumption 3000 Sm^3) and large household consumers (group D3, annual consumption 20.000 Sm^3) by around 3%. In the same period, the network charge for medium-sized industrial consumers (group I3, annual consumption 800.000 Sm^3) on average level increased by around one per cent. The changes in annual costs are related to all eight largest municipalities, while in the five-year period the annual amounts of network charges varied depending on economic and technical criteria of the operation of the distribution system in an individual municipality. Differences in annual amounts of the network charge by individual municipalities are an indication of incomparable structure of consumers and their consumption as well as age and extent of the distribution system.

Figure 76: The annual amount of the network charge for small household consumers – D1 [350 Sm^3]



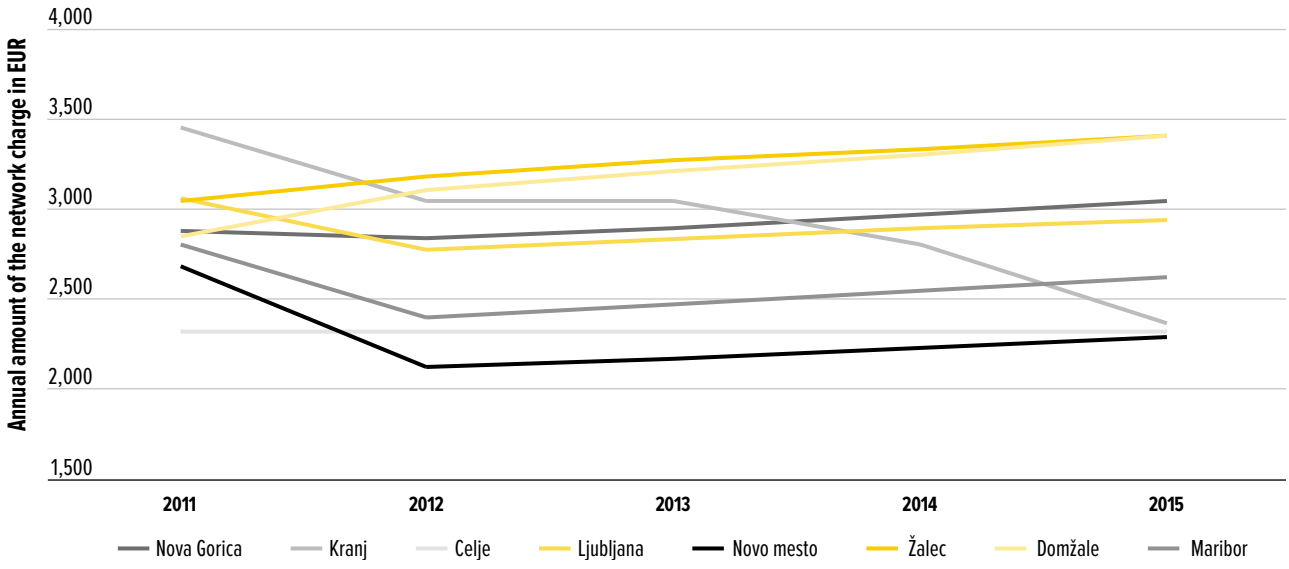
Source: Energy Agency

Figure 77: The annual amount of the network charge for medium-sized household consumers – D2 [3,000 Sm^3]



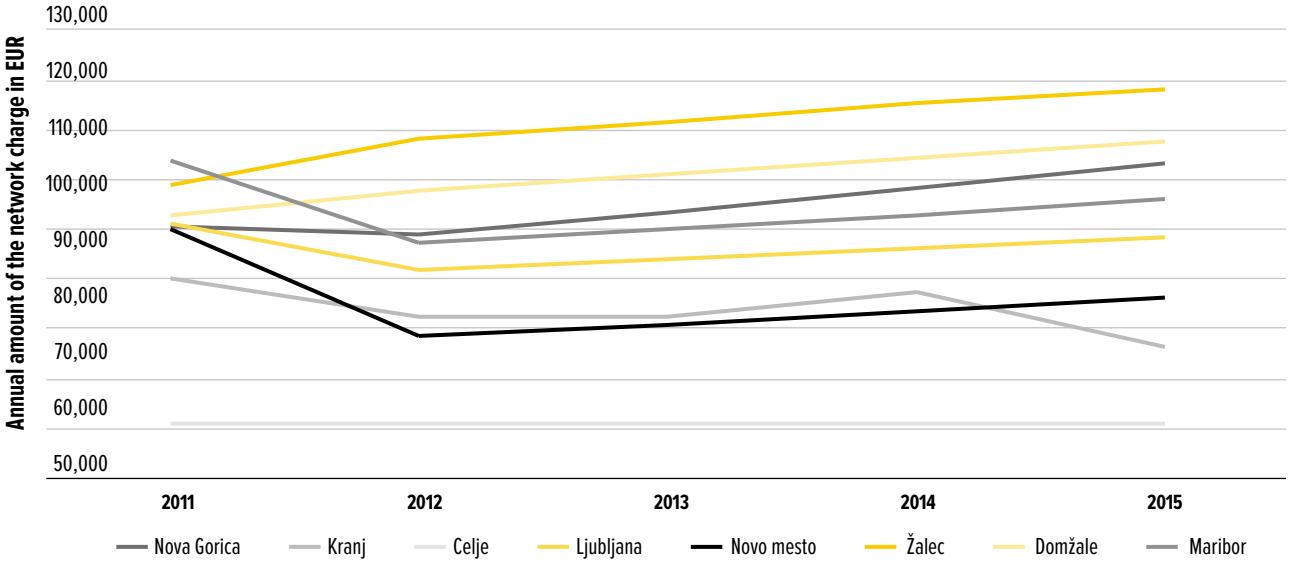
Source: Energy Agency

Figure 78: The annual amount of the network charge for large household – D3 [20,000 Sm^3]



Source: Energy Agency

Figure 79: The annual amount of the network charge for medium-sized industrial consumers – I3 [800,000 Sm^3]



Source: Energy Agency

4.2.4 Capacity at border points

The Slovenian transmission system is connected with neighbouring transmission systems in three border points, that is in Ceršak, Rogatec and Šempeter. The transmission of natural gas through the border point Ceršak is enabled only in direction from Austria to Slovenia, and through the border point Rogatec the transmission is possible in the direction from Slovenia to Croatia. At the borders points Rogatec and Šempter the gas TSO has been granted an exemption from enabling bi-directional capacity. The transmission of natural gas through the border point Šempeter is possible in both directions, in 2015 the natural gas had for the first time flowed from Slovenia to Italy. The transmission of natural gas to Italy is now possible due to upgrading the transmission system from

Ceršak to Vodice, power increase of the compressor station in Kidričevo and reconstruction of border metering-regulation station in Šempeter. Gas from Slovenia to Italy ran for more than 40 days.

The capacities were allocated on the basis of market methods. A market method of capacity allocation are transmission capacity auctions, which take place at several booking platforms. Users, who want to lease capacity at border's entry or exit points, can do so since November 2014 through the online booking platform PRISMA.

In 2014, auctions of monthly and daily standard capacity products were carried out, while in 2015 in accordance with the auction calendar in addition to auctions of monthly and daily capacities also the auctions of annually and quarterly standard capacity products and intraday capacity were carried out. There were more than 4190 auctions announced; average daily lease of capacity at the borders' entry points amounted to 95,071 MWh/day.

Table 27: Transmission capacity auctions in 2015

2015	Number
All announced auctions	4,191
Successful auctions	
annual	4
quarterly	10
monthly	21
daily	74
within-day	4
Successful auctions of bundled capacity	5
Successful auctions of interruptible capacity	10

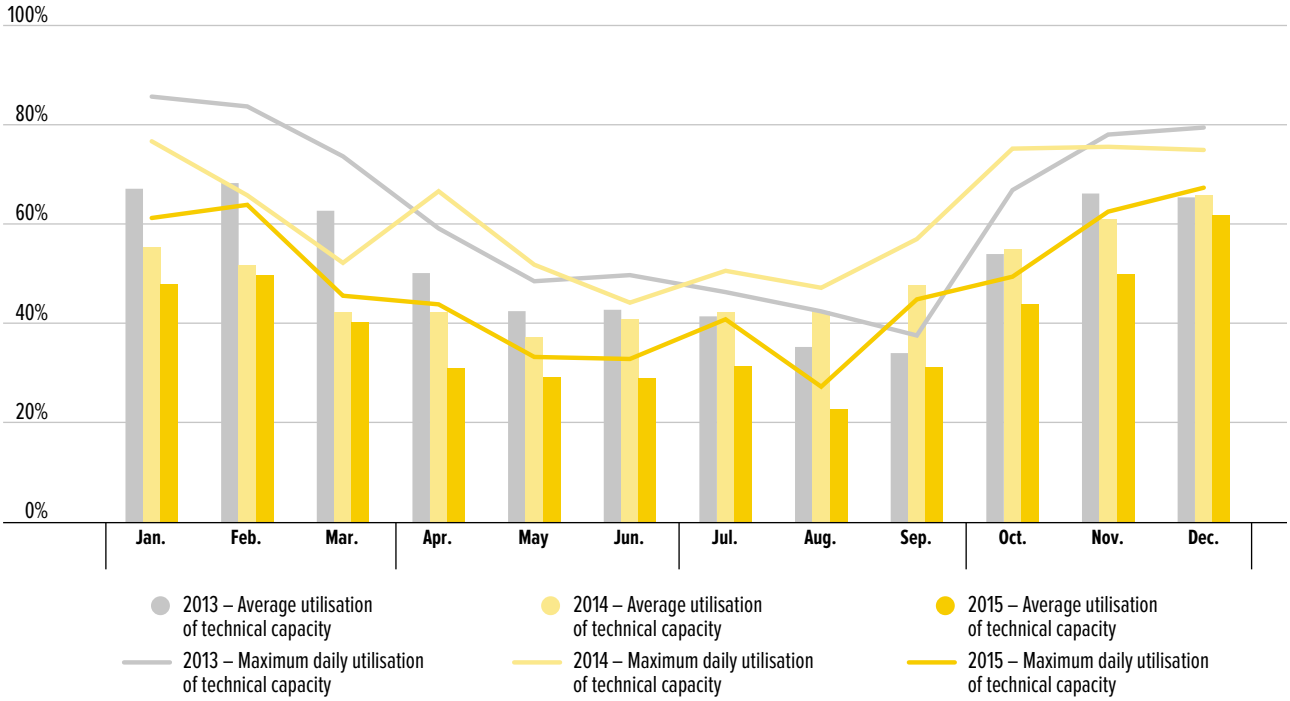
Source: Plinovodi

In accordance with the provisions of System operating instructions for the transmission of natural gas and Regulation No 984/2013 establishing a Network Code on Capacity Allocation Mechanisms in Gas Transmission Systems, the gas TSO together with the neighbouring TSOs at the border points Ceršak and Šempeter on 1 November 2015 enabled allocation of bundled capacity. Auctions of bundled capacity allow the users of the system the simultaneous lease of entry and exit capacity, where the tariff for bundled capacity is determined as a sum of entry and exit tariffs.

Bundled capacity was in 2015 not available at the border point Rogatec, since the Croatian gas TSO only in October 2015 decided to use online booking platform PRISMA for capacity allocation at this border point.

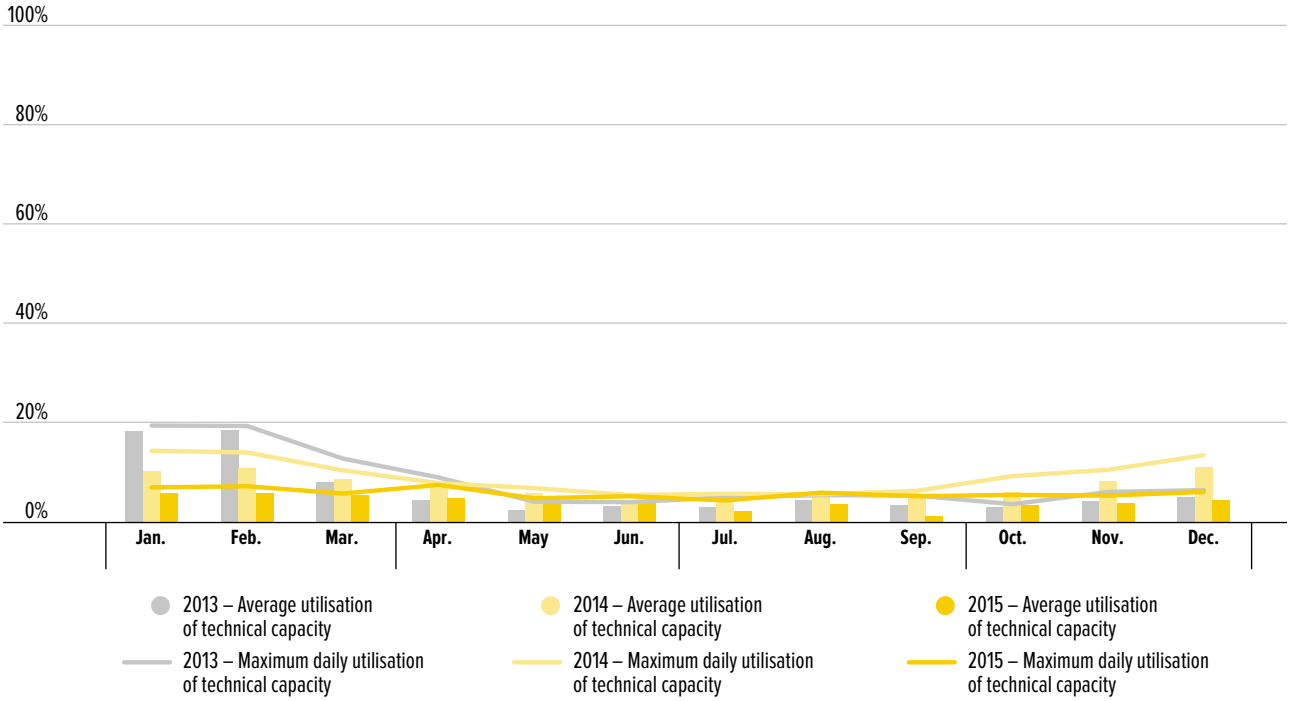
The gas TSO charged for the standard capacity products in accordance with the Energy Agency's general act governing the charging the network charge, and tariffs item determined by the gas TSO. The network charge tariffs items represent the reserve price under the Regulation 984/2013.

Figure 80: Maximum daily and average monthly capacity utilisation of the border-entry point Ceršak (MRS Ceršak)



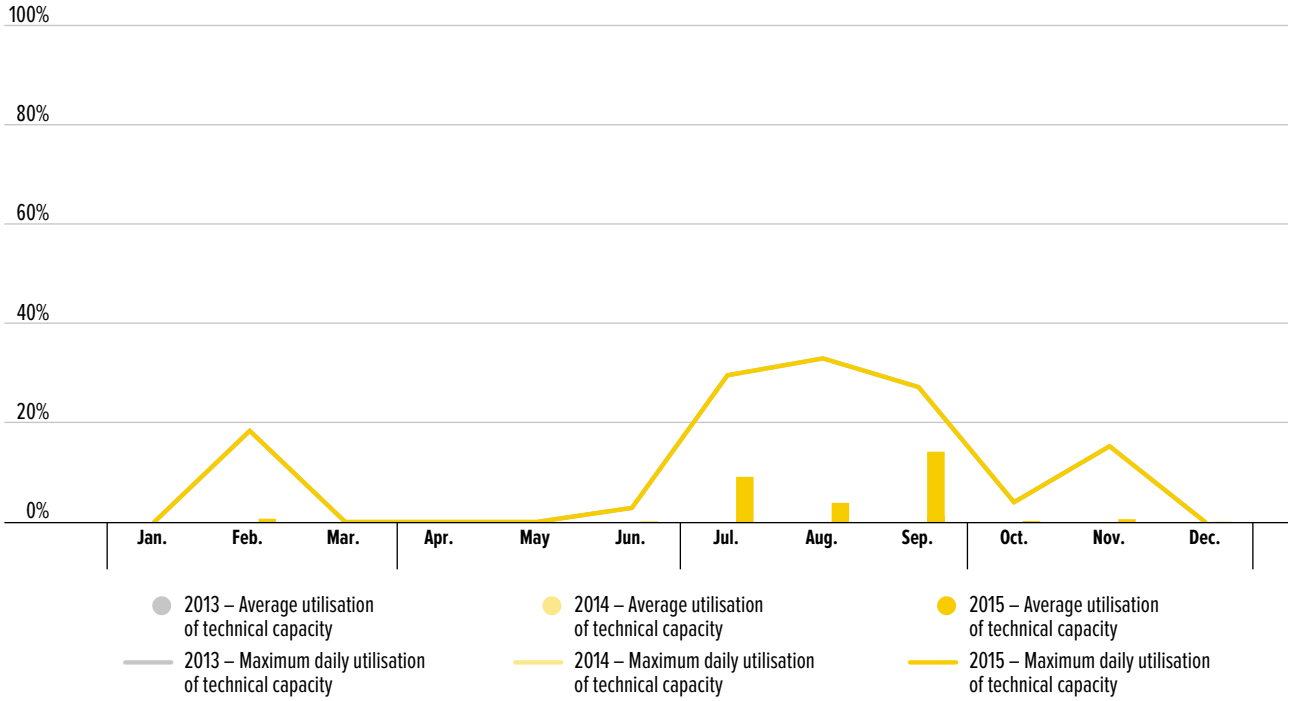
Source: Plinovodi

Figure 81: Maximum daily and average monthly utilisation of entry capacity at the border point Šempeter (MRS Šempeter)



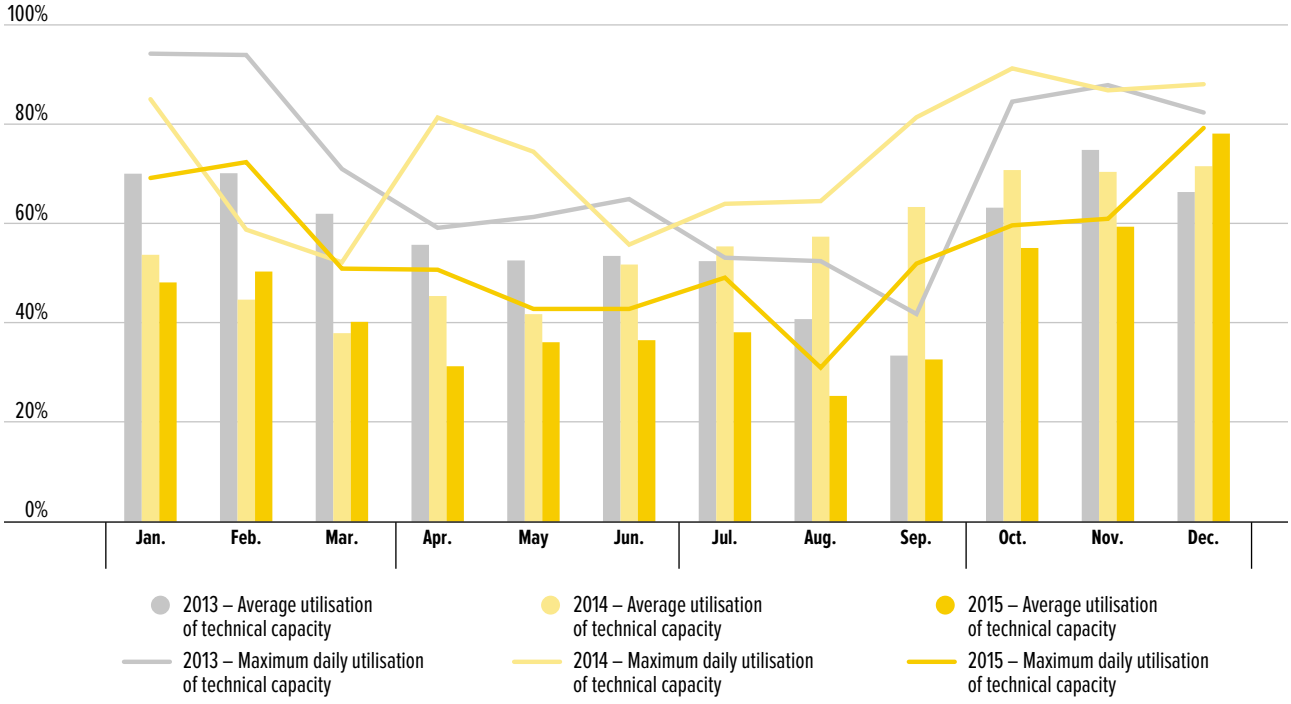
Source: Plinovodi

Figure 82: Maximum daily and average monthly utilisation of exit capacity at the border point Šempeter (MRS Šempeter)



Source: Plinovodi

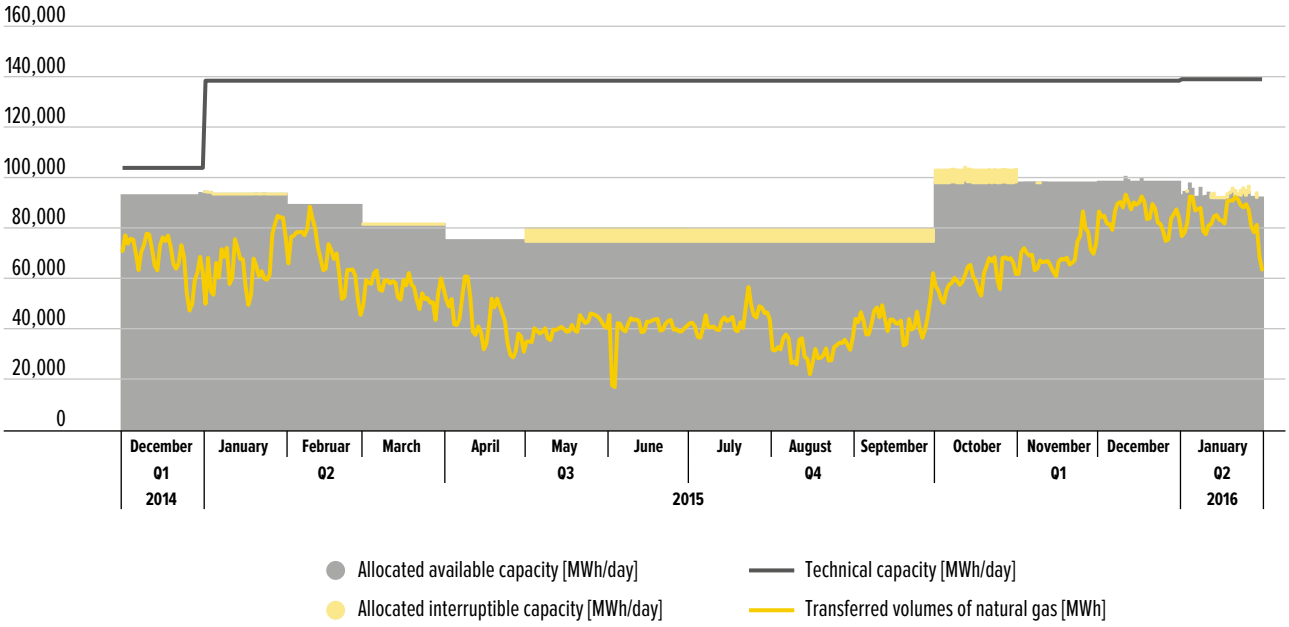
Figure 83: Maximum daily and average monthly utilisation of exit capacity at the border point Rogatec (MRS Rogatec)



Source: Plinovodi

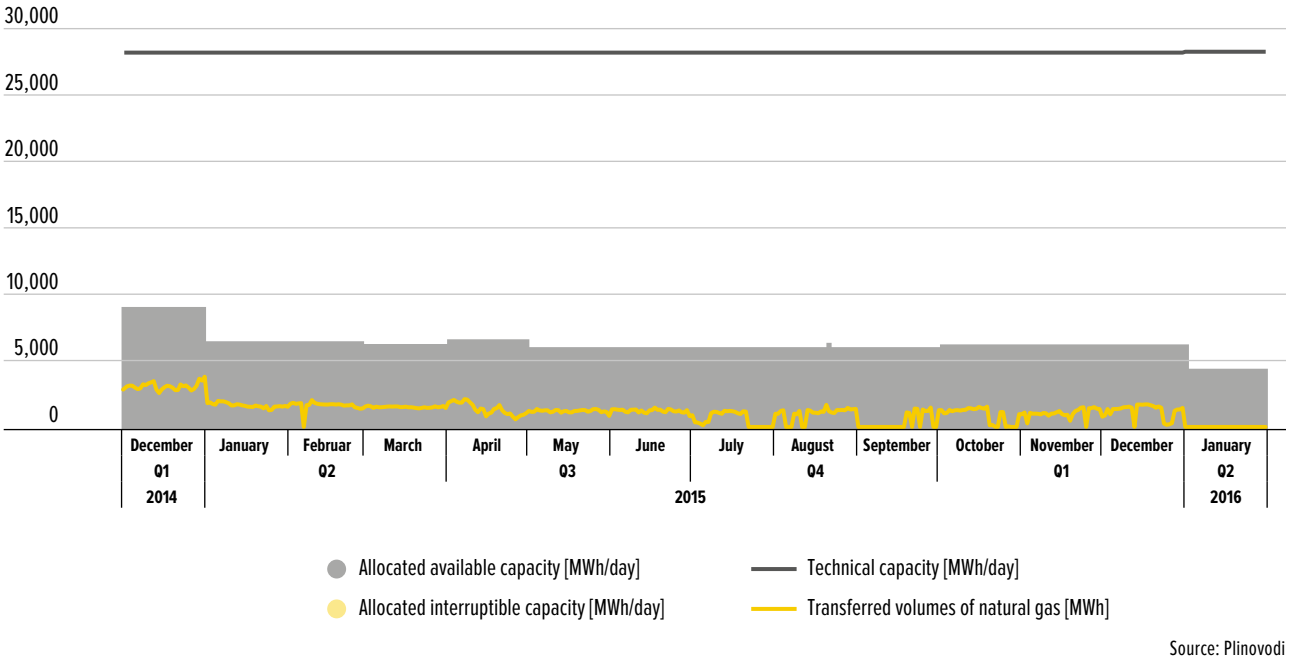
In the Slovenian transmission system there are no restrictions of the access to the transmission system. In 2015, also there were no restriction of the access to border entry-exit points since the demand for capacity was within the available capacity.

Figure 84: Dynamics of daily transferred volumes of natural gas, technical, available and interruptible allocated entry capacity at the border point Ceršak



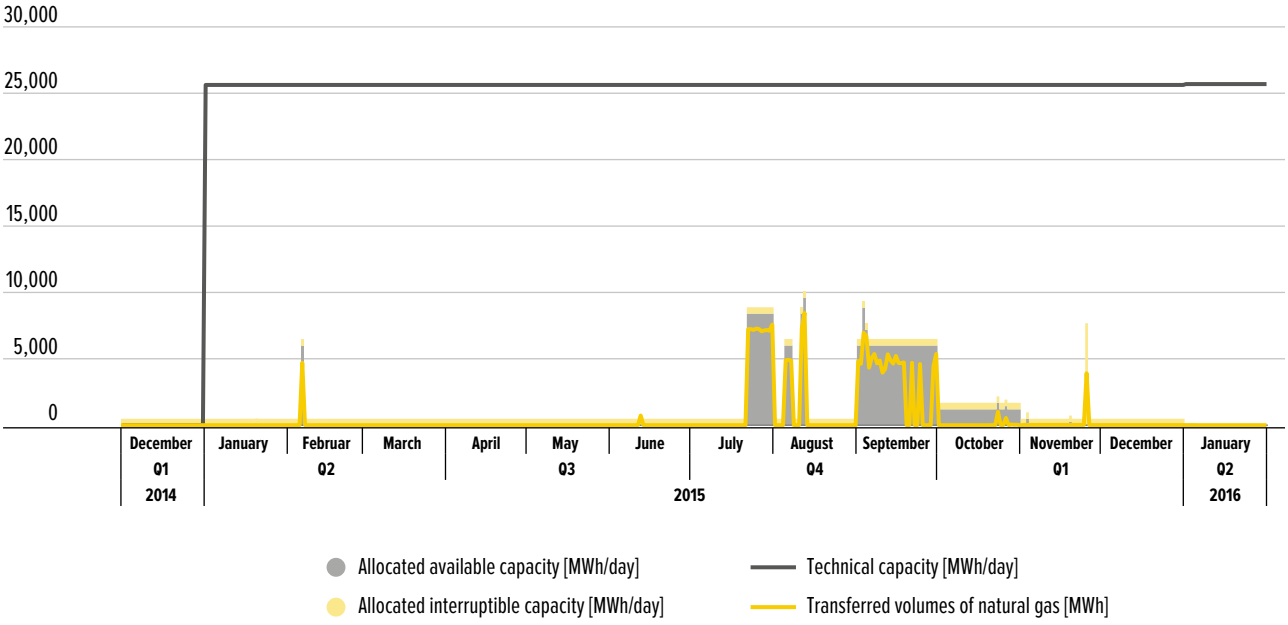
Source: Plinovodi

Figure 85: Dynamics of daily transferred volumes of natural gas, technical, available, and interruptible allocated entry capacity at the border point Šempeter



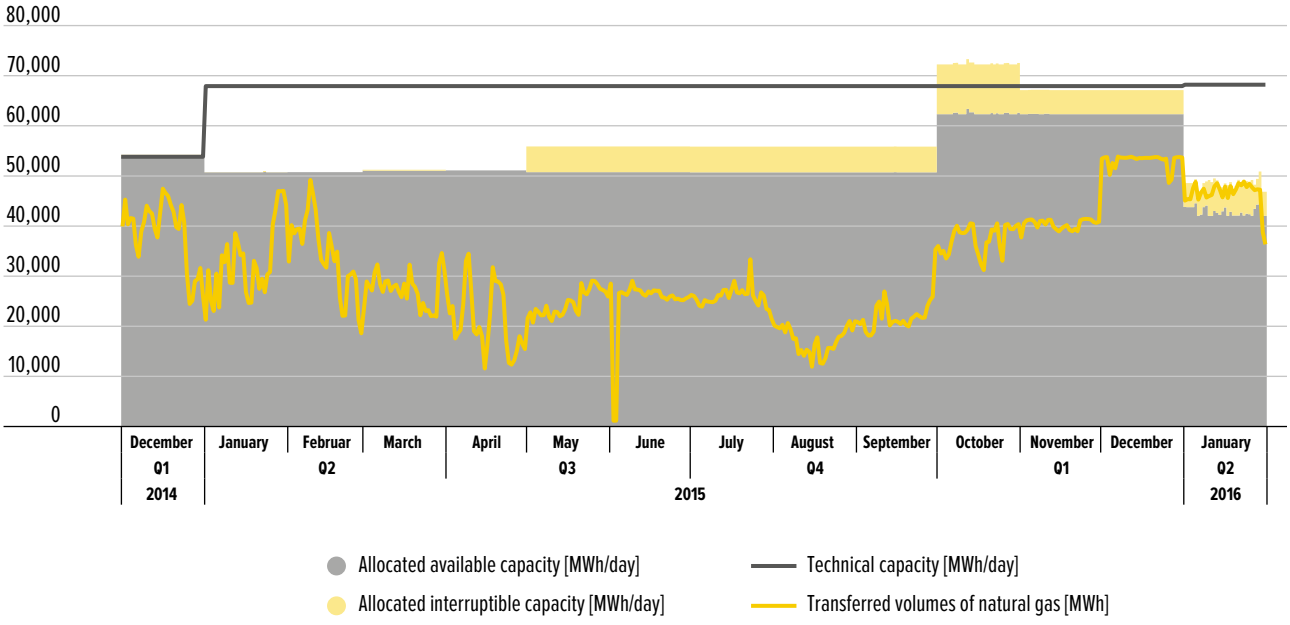
Source: Plinovodi

Figure 86: Dynamics of daily transferred volumes of natural gas, technical, available, and interruptible allocated exit capacity at the border point Šempeter



Source: Plinovodi

Figure 87: Dynamics of daily transferred volumes of natural gas, technical, available, and interruptible allocated exit capacity at the border point Rogatec



Source: Plinovodi

The maximum technical transmission capacity is the one that is physically available for the transmission of natural gas from a selected entry point to an exit point. When setting the maximum technical capacity of relevant border point the gas TSO has to consider the technical capacities of all the transmission components of the pipeline system, the configuration and the operational characteristics of the entire system, and its operational boundary conditions have to be considered.

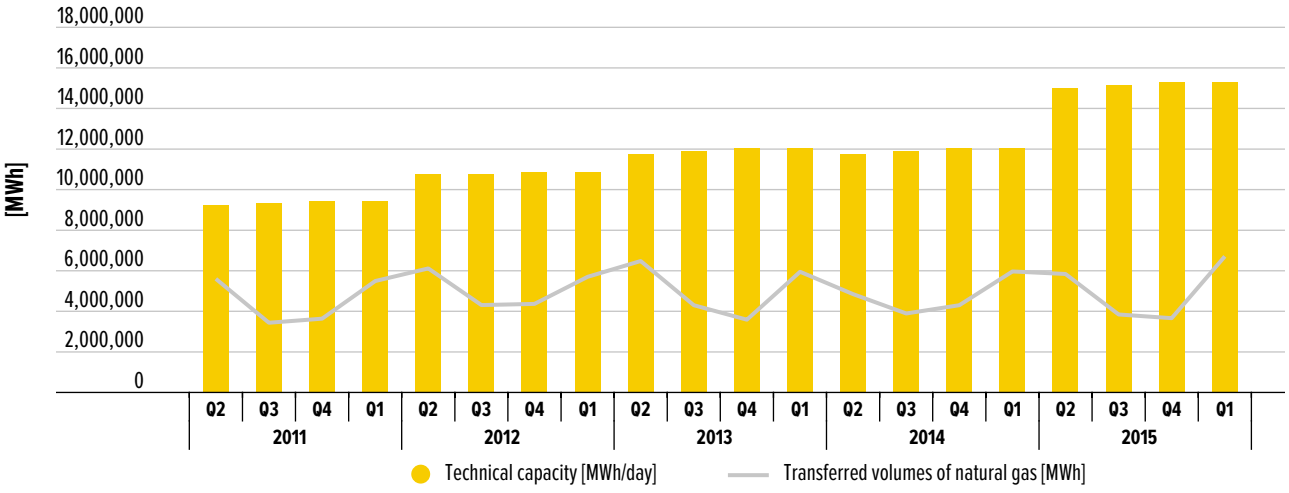
The maximum technical capacity of the individual entry-exit point the gas TSO determines with the help of special software packages based on the model for the calculation of transmission capacity and by taking into account the possible combination of supply, gas consumption and statistical model for forecasting domestic gas consumption. The gas TSO also carries out the analysis of the capacity of the transmission system within the upgrading of the pipeline system, calculations for the work on the system, analysis of operating conditions and transitional events in the transmission of gas.

The forecasting of the daily gas consumption is based on the model of forecasting by way of auto-learning, which activates historical data on gas consumption in different operational conditions. The expected daily consumption is calculated on the basis of this data, the forecasted operational conditions, and the daily forecasts of individual gas consumers. It is also possible to analyse the quality of gas (gas composition) in the system, both geographically and in time.

Together with the neighbouring gas TSOs the Slovenian gas TSO started the procedures to establish joint methods for achieving optimization of the technical capacity in order to maximise the offer of bundled capacity at individual interconnection points.

Due to upgrading of the transmission system the technical capacity of all interconnection points from 1 January 2015 is increased. The maximum utilisation of capacity was reaches at border point Rogatec (in direction to Croatia), where in the last three months ranged between 60 and 80% of the technical capacity. The utilisation of the technical capacity is due to the increased technical capacity as the basis for the calculations in 2015 lower than in 2014, but in 2015, on the day of the highest utilisation of capacity transmitted around 5 GWh more than in 2014.

Figure 88: Quarterly entry technical capacity of border entry/exit points and the transferred volumes of natural gas to Slovenia in the period 2011–2015



Source: Plinovodi

The technical characteristics and configuration of the transmission system determine its technical capacity or the maximum firm capacity in individual points of the transmission system, which system operator can provide to the users of the transmission system.

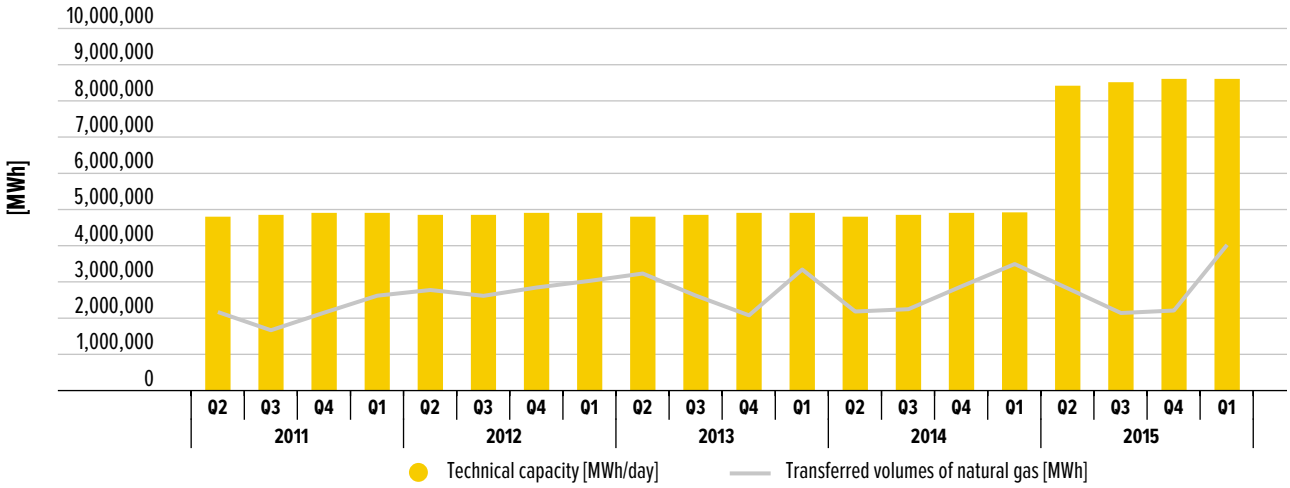
If demand for firm capacity at each border entry or exit point exceeds its available technical capacity, we talk about contractual congestion of a border point.

If case of contractual congestion the gas TSO at each border point initiates the following congestion management mechanisms:

- Capacity surrender;
- Long-term UIOLI (Use-It-Or-Lose-It);
- Oversubscription & Buy-back.

In case of the contractual congestion in a border point, the gas TSO allocates additional capacity on the basis of congestion management mechanisms, in the listed order of mechanisms.

Figure 89: Quarterly exit technical capacity of border entry/exit points and the transferred volumes of natural gas from Slovenia in the period 2011–2015



Source: Plinovodi

4.2.5 Ensuring compliance with energy legislation

The Energy Agency must in accordance with Directive 2009/73/EC comply with and carry out all relevant legal binding decisions of the European Commission and ACER to ensure the compliance with this Directive and Regulation (EC) No 715/2009 on conditions for access to the natural gas transmission networks.

In 2015, the Energy Agency in the process of monitoring the gas TSO and vertically integrated undertaking, the company Geoplin d.o.o. Ljubljana established that the Supervisory Board of Geoplin is not composed in compliance with paragraph 7 of Article 195 of the Energy Act. The company Geoplin followed the decision issued by the Energy Agency and corrected the irregularities in due time. In accordance with paragraph 5 of Article 203 of the Energy Act the Energy Agency gave an approval to the gas TSO to the commercial and financial agreements with the vertically integrated undertaking. The Energy Agency also decided on the dispute concerning balancing settlement between the gas TSO and the company Geoplin, but the violations of the provisions of Regulation 715/2009 were not detected.

The compliance with Regulation (EC) No 715/2009 and other relevant European legislation was monitored in the procedures of issuing approvals and among other gave approval to the System operating instructions for the natural gas transmission system.

In 2015, the Energy Agency in accordance with Regulation 994/2010 concerning measures to safeguard the security of gas supply received the opinion of the European Commission on the Preventive Plan and Emergency Plan. On the basis of the received opinion, an explanatory document was prepared, in which additional explanations of individual provisions and calculations of plans were revealed. The explanatory document was also published, and the European Commission was informed about it.

The Energy Agency monitored the compliance with Regulation (EC) No 715/2009 and guidelines adopted under this Regulation and supervised whether the gas undertakings were fulfilling the obligation arising from the European legislation.

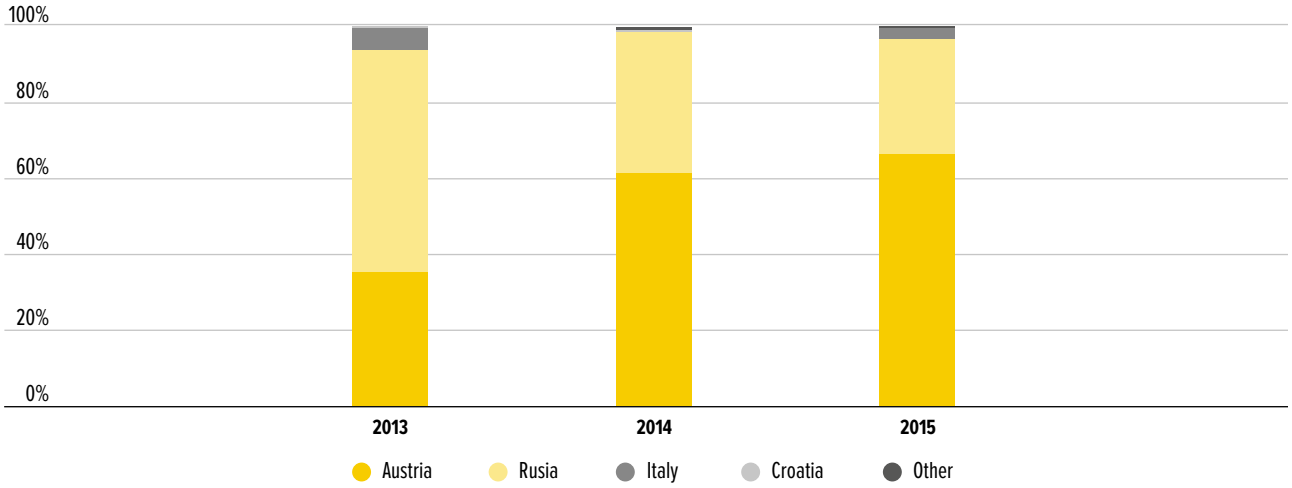
No special breaches of the European legislation were identified. Thus, no penalties were imposed in 2015.

4.3 Promoting competition

4.3.1 Wholesale market

Slovenia does not have its own sources of natural gas, storages of natural gas or LNG terminals, therefore, the wholesale natural gas market is limited by imports of gas through neighbouring transmission systems. We do not have an organized natural gas market, where organized trading among sellers and buyers of natural gas standard products would be carried out. Slovenian wholesale market is direct sale and purchase of natural gas between traders and suppliers. Traders, who are also importers of gas, deliver gas through neighbouring transmission systems to the Slovenian transmission system. Natural gas traded on the wholesale market comes from transmission systems of neighbouring countries with their own gas sources. The wholesale market is supplied by gas from Austria and Italy, the supply from Croatia is possible only through the virtual flows. From the chart in Figure 90 we see that Slovenian suppliers among the options described mostly use the supply through Austria, where in the Baumgarten gas hub and Austrian storages most of the gas is purchased. The traditionally largest source of natural gas until 2013 was the Russian Federation with more than 50%, but due to market liberalization, this source was replaced by Austria. Because of price differences the share of gas from Italy significantly decreased.

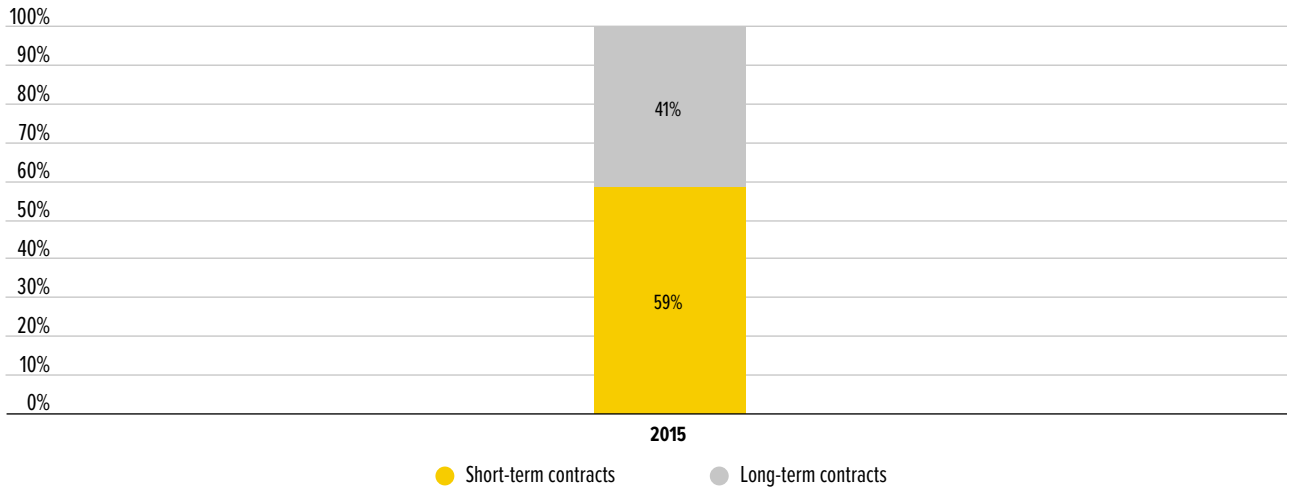
Figure 90: Natural gas sources from 2013 to 2015



Source: Energy Agency

In search of new opportunities for the competitiveness of the offers market liberalization lead to changes in the natural gas supply structure. Long-term contracts signed directly with natural gas producers from the Russian Federation were replaced by short-term contracts concluded at gas hubs, power exchanges and other points in EU where the supply and demand meet. In 2015, to Slovenian wholesale market, almost 60% of gas was delivered on the basis of short-term contracts, which is presented in Figure 91. The maturity of contracts or the ratio between short-term and long-term contracts can affect the security of supply since in case of shortage of gas the supply based on short-term contracts may be insufficient. In the coming years, this ratio will have to be monitored, as well as evaluation the impacts of these changes to the security of supply.

Figure 91: Structure of imported gas in relation to contracts maturity



Source: Energy Agency

In the wholesale market only those volumes of gas are registered that are sold by traders to other traders or suppliers. These volumes exclude the volumes that are imported for the supply of the consumers on the retail market when a supplier of the retail market is at the same time also an importer of natural gas. Table 28 shows the market shares and HHI of the wholesale market. By taking into account the distribution of the market share, displayed data indicate that important suppliers to the retail market purchase gas independently on the foreign markets.

Table 28: Market shares and the HHI of the natural gas wholesale market

Company	Share
Geoplin	75,50%
Petrol Energetika	24,15%
ENOS	0,23%
Istrabenz Plini	0,11%
Total	100%
HHI of the wholesale market	**6,284**

Source: Energy Agency

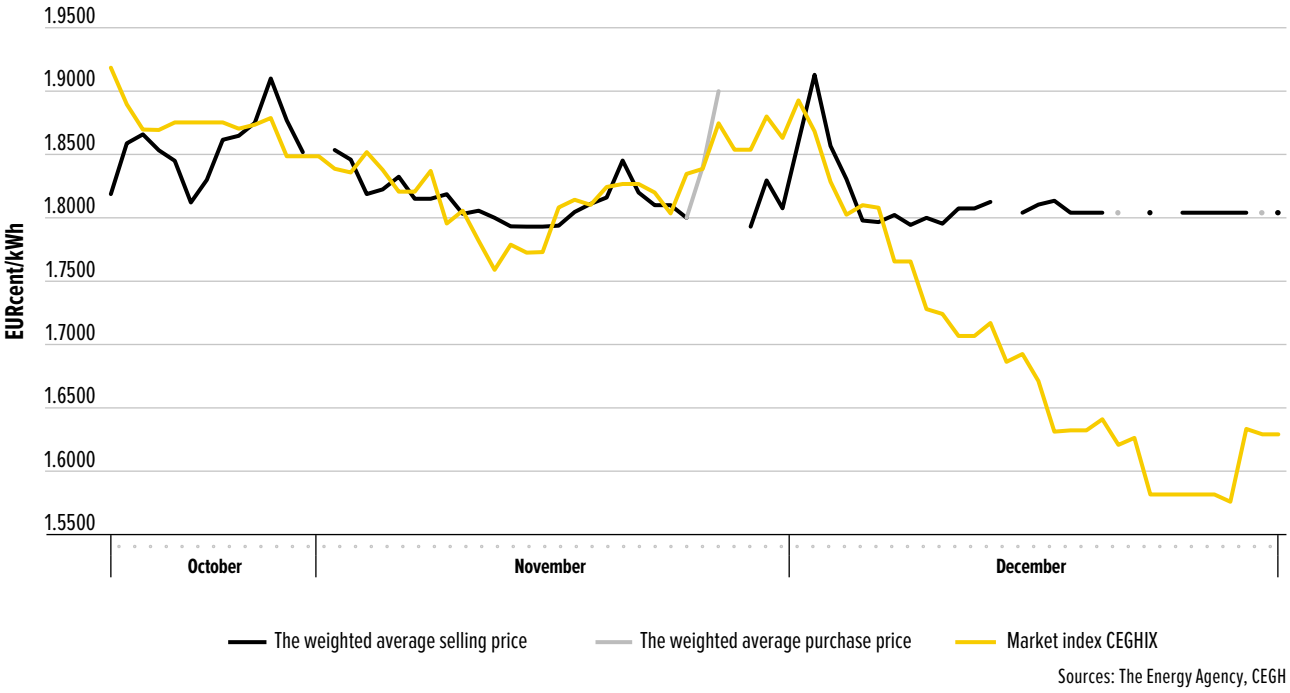
In October 2015, the gas TSO set up a virtual trading point, which will be in the future very important for the operation of the natural gas wholesale market. The virtual point enables transactions of natural gas and serves as a bulletin board for trading of gas. In the virtual point all transactions of natural gas in the transmission system are registered, wherein a transaction is each legal transaction signed by a natural gas market participant, on the basis of which the right to use the certain volume of gas in the transmission system is changed.

As a service of virtual point the trading platform was introduced, which enables the balancing group holders trading within a day and day ahead for balancing of deviations. The gas TSO carries out all the tasks related to the trading platform operator, and at the same time equally with other market participants trades with volumes for balancing of deviations. If the operator by trading in the trading platform at the end of accounting day cannot effectively set the imbalances of the transmission system, the balancing services can be used, which are based on the annual contract with the best service provider.

4.3.1.1 Wholesale natural gas prices

In October and November the selling price on a trading platform followed the value of the stock market index CEGHIX of gas hub CEGH in Vienna. In December the CEGHIX value fell, and the selling price on a trading platform stabilized at around 1.8 EURcent/kWh and did not follow stock index.

Figure 92: The selling and purchase price on the trading platform and values of CEGHIX



Sources: The Energy Agency, CEGH

4.3.1.2 The level of market transparency

REMIT and implementing regulation together with the Energy Act represent a comprehensive legal framework for ensuring the transparency of the wholesale electricity and natural gas market. This issue is in more details addressed in the Chapter 3.3.1.2.

4.3.1.3 The level of market effectiveness

In the last quarter of 2015, when a virtual trading point started to operate, no transactions were carried out in it; no bids or enquires were announced on bulletin board. In October trading began on the trading platform. Three balancing groups holders in the period from October to December done five sales in a total value of 0.53 GWh, and purchases in a total value of 104 GWh. The most of gas purchases were done for a day ahead (80 GWh), while sellings were done only within-day.

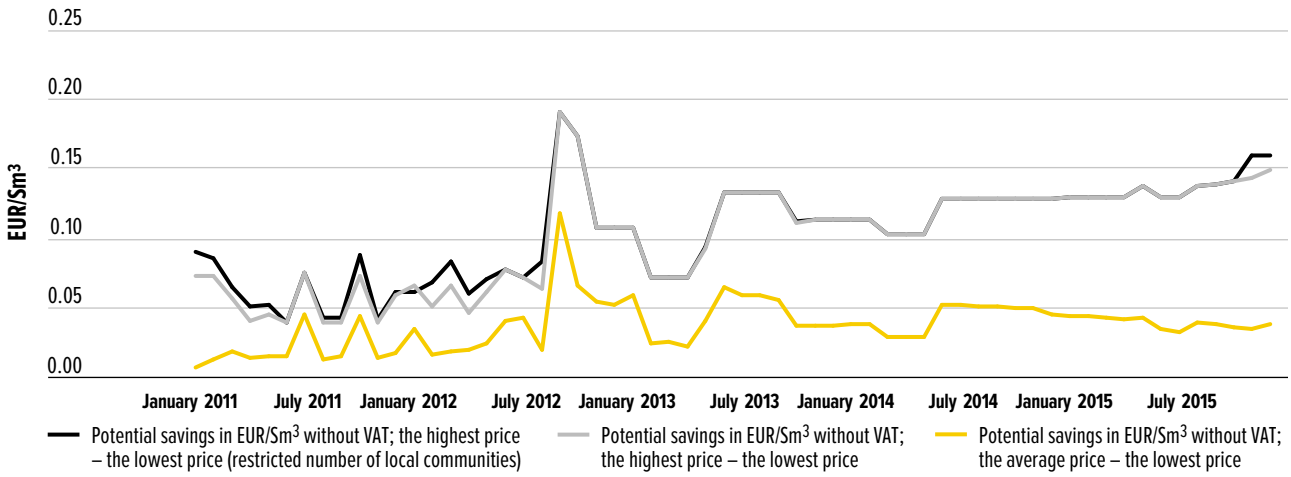
The gas TSO provides an access to important information to different users of the system via the web portal NUS (Network User Services). This portal ensures equal and non-discriminatory treatment of all system users since information are available at the same time and in the same shape to all.

4.3.2 Retail market

4.3.2.1 Retail natural gas prices

In 2015, the trend of falling prices of gas continued. Prices of gas as an energy source have been decreasing for the fourth year in a row. Reasons for lower prices are changes in international markets, decrease in prices for supply under long-term contracts and competitive offers from suppliers. Prices started to fall in September 2012, when new suppliers recognized the potential of the difference between then high retail gas prices and low wholesale gas prices and offer household consumers a supply at significantly lower price. In the next five years the supply of household and small business consumers was carried out by five new suppliers; the supply conditions became much more favourable. Collected data show that the difference between the highest and lowest price in 2015 was increasing, thereby the potential savings increased as well. In case of switching from the supplier with the highest price to the supplier with the lowest price, it was possible at the end of the year 2015 at each spent cubic meter save nearly € 0.2. Individual medium-sized household consumers with annual consumption between 2000 and 3000 Sm³ could by switching the supplier save between € 330 and € 550 of savings per year considering an average annual value of the difference between the highest and lowest gas price, which including VAT amounted around € 0.17. Potential savings for gas supply between 2011 and 2015 are shown in Figure 93.

Figure 93: Potential savings by switching supplier for a household consumer



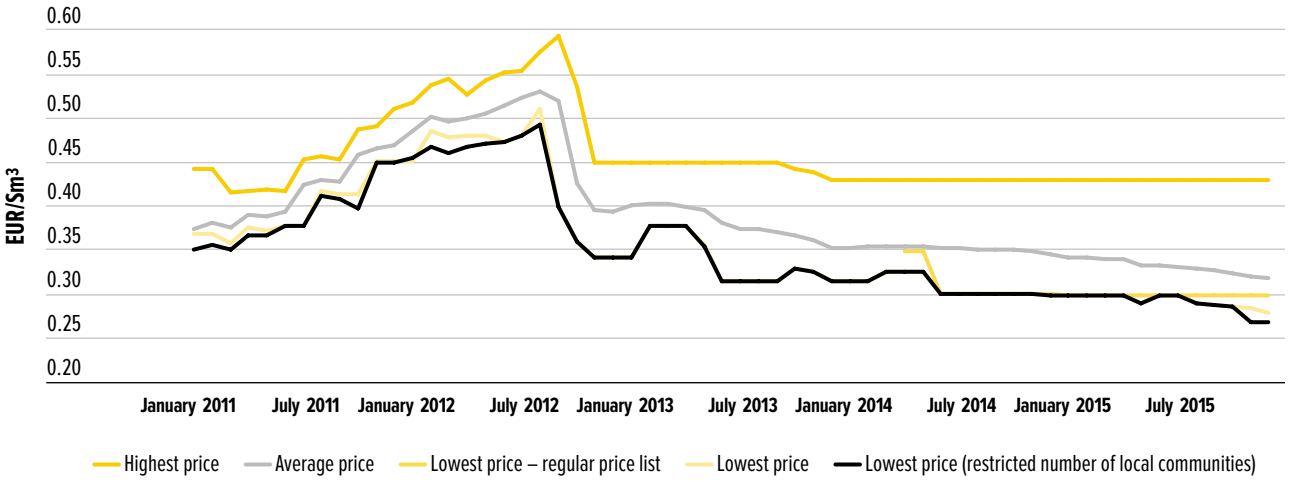
Source: Energy Agency

The potential of savings on an annual level in case if a medium-sized household consumer with annual consumption between 2000 and 3000 Sm³, which had been previously supplied at an average price, chose a supplier offering the lowest price offered in most local communities, would be between € 95 and € 150. The annual savings of small business consumers with annual consumption up to 10,000 Sm³ was because of higher consumption significantly bigger, despite, in some cases, higher gas price. Some suppliers offer small business consumers the supply of gas at the same price as to household consumers; among them was also a supplier with lowest gas price in the market, while individual suppliers offer gas to these consumers at a slightly higher price.

The growing gap between the highest and the lowest gas indicates the fact that a certain group of consumers is still not aware of the possibility of changing a supplier, and thus, cheaper supply, while others use the benefits of the competitive market, choose favourable offers and with this achieve significant savings at supply costs. The lowest price for the supplied gas by the regular price list for almost entire Slovenia in the greater part of the year was not significantly higher than the lowest price, and because of that most of consumers had the opportunity to be supplied and additional contractual obligations. Larger business consumers had with regard to the scope of supply the possibility to be supplied at more favourable prices, which were agreed through negotiations with individual suppliers.

Movements of prices in published lists for the supply of natural gas for household and small business consumers in the period from 2011 to 2015 are shown in Figure 94.

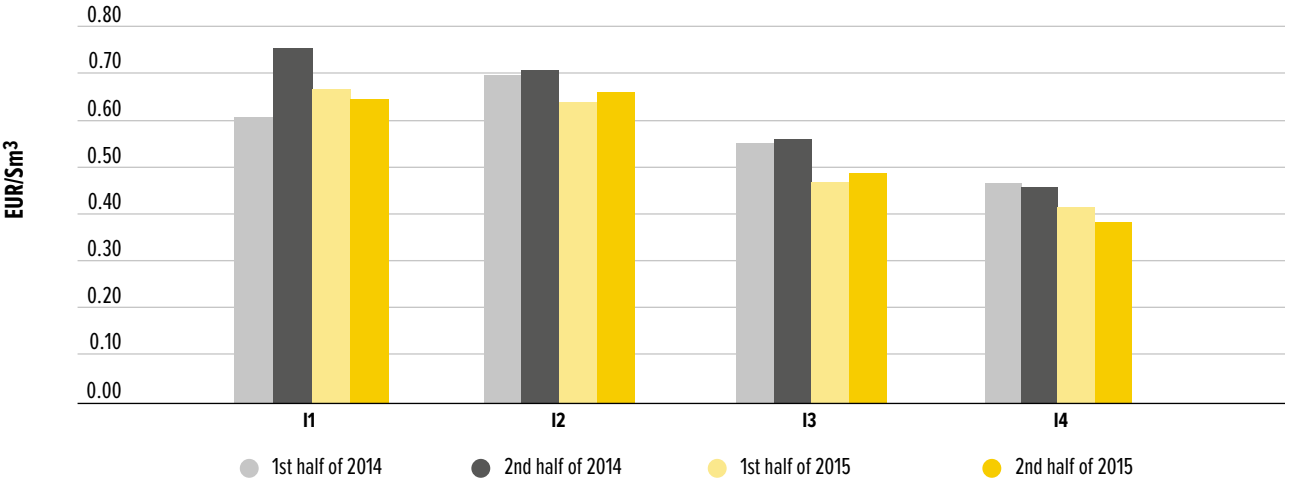
Figure 94: Retail price index of natural gas excluding network charge, duties and VAT



Source: Energy Agency

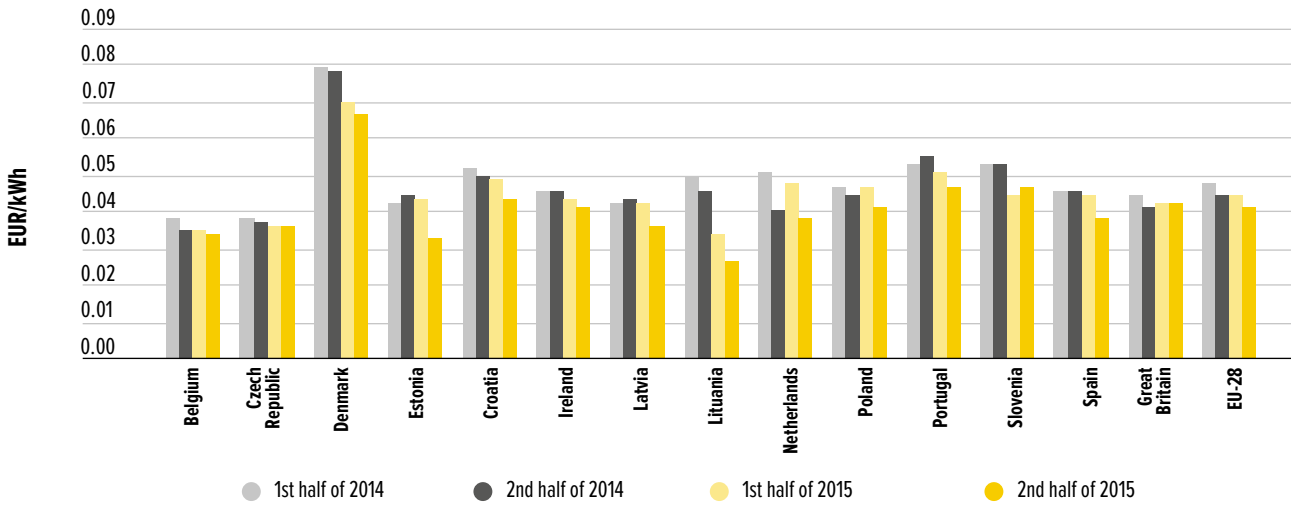
In 2015, for groups I2 and I3 with lower natural gas the pattern of slightly increase in prices between the first and second half of the year repeated. For the largest consumer group the lowest prices are expected, and the downward trend in prices has been steady throughout the period of the last three years. The lowest final price for industrial consumers already fell below 0.4 EUR/Sm³. Prices for the group of the smallest industrial consumers after bid jump in the second half of 2014 started to fall again and became the same as for the group I2. The described movement of natural gas prices for industrial consumers is shown in Figure 95.

Figure 95: Final natural gas prices including all taxes and levies for industrial consumers in Slovenia



Source: Statistical office of the Republic of Slovenia

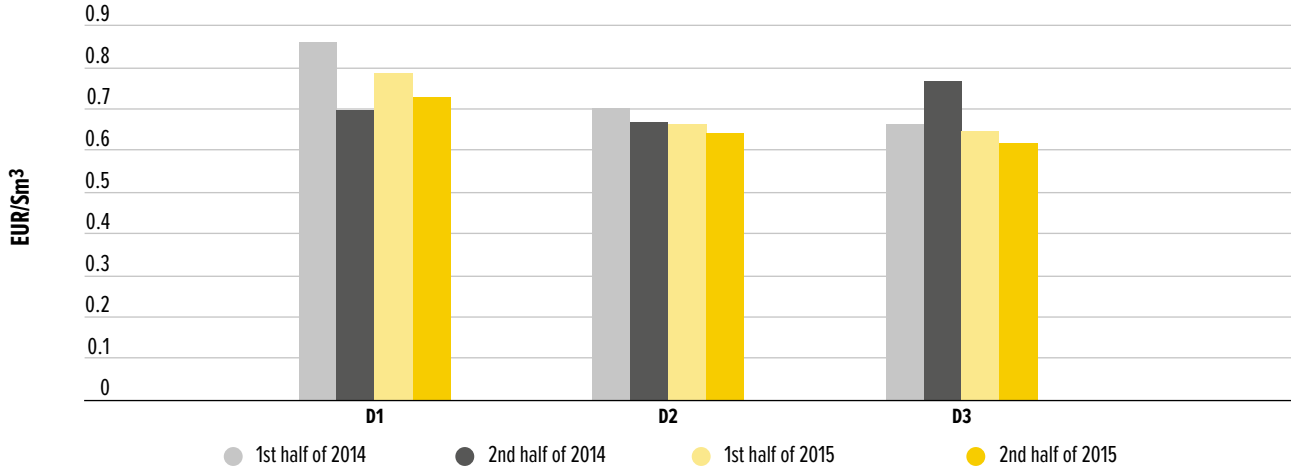
Figure 96: Final natural gas prices including all taxes and levies for typical industrial consumers (I3) in Slovenia and individual EU countries



Source: Eurostat

Figure 96 shows semi-annual natural gas price movements including all taxes and levies in 2014 and 2015 in Slovenia and EU countries for large industrial consumers (group I3) with annual consumption between 264,349 and 2,643,489 Sm^3. In most EU countries, prices for this consumer group slightly decreased, which is reflected in the movement of the average price for EU-28. However, despite decrease in price in Slovenia, the price is still higher than the average price of the EU-28.

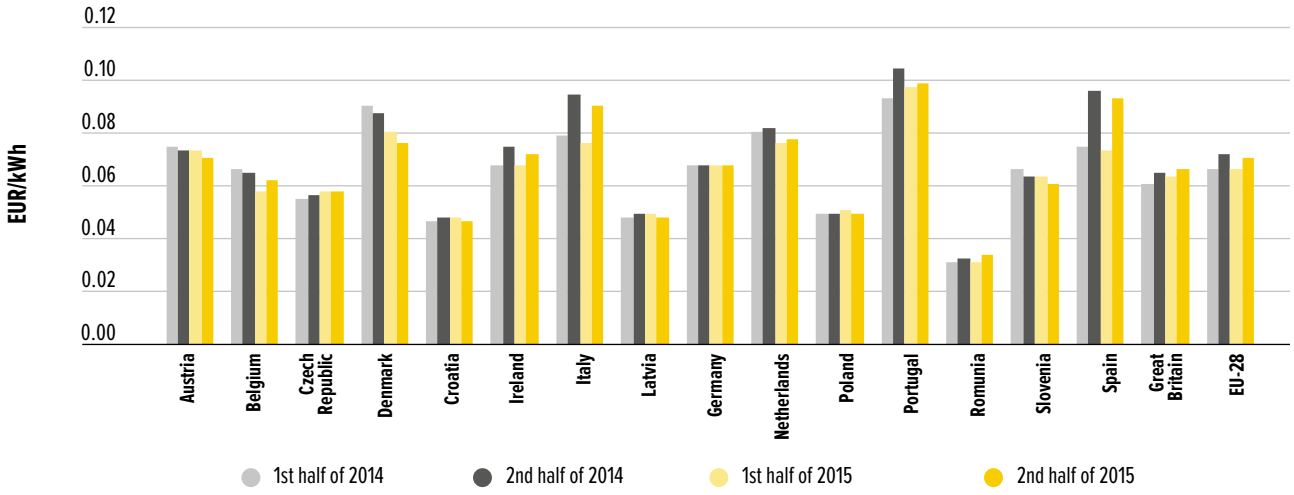
Figure 97: Final natural gas price including all taxes and levies for household consumers in Slovenia



Source: Statistical office of the Republic of Slovenia

Figure 97 shows the movement of natural gas price with all taxes and levies for household consumers from the first half of 2014 to second half of 2015. Prices for group D1 are the highest, and they repeated the pattern from the past. In the first half of the year were far more higher than in the second half of the year, when prices for this group decrease a lot. For groups D2 and D3, a slight decline in prices was noticed.

Figure 98: Final natural gas prices including all taxes and levies for typical household consumers (D2) in Slovenia and individual EU countries



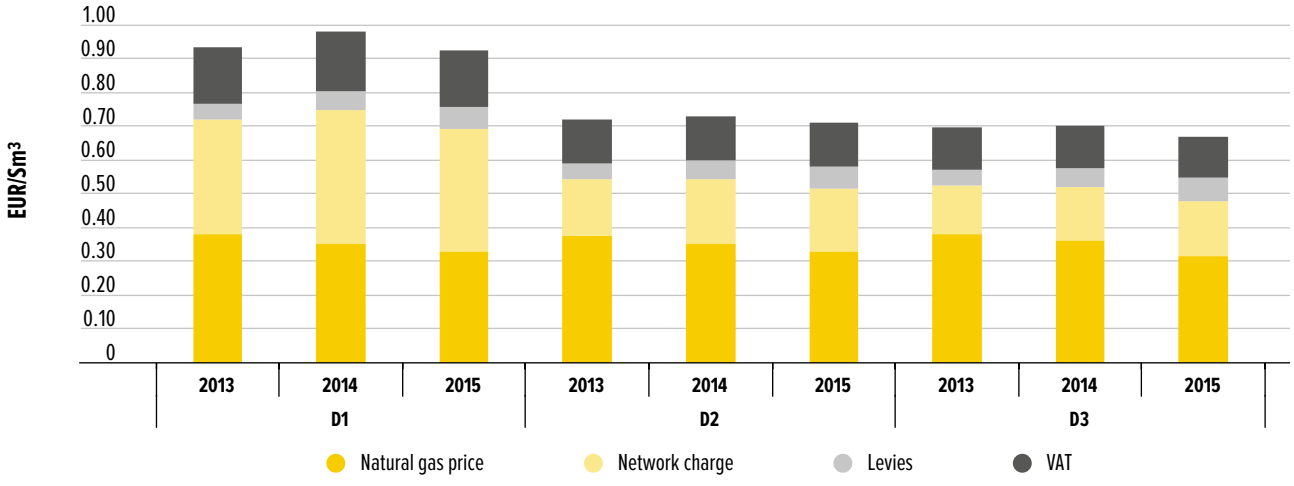
Source: Eurostat

Prices for natural gas for typical household consumers (group D2) with annual consumption from 529 to 5287 Sm³ in Slovenia and most EU countries are shown in Figure 98. The trends are quite different. In some countries the price of natural gas in this period increased, and in others slightly decreased. In Slovenia, the prices for this group are since the second half of 2014 lower the average price of the EU-28.

Figures 99 and 100 show the structure of final price for a typical household and business consumers, connected to the distribution systems in the period from 2013 to 2015. The structure of final price in recent years changed a lot due to lower prices for the supplied gas and higher levies.

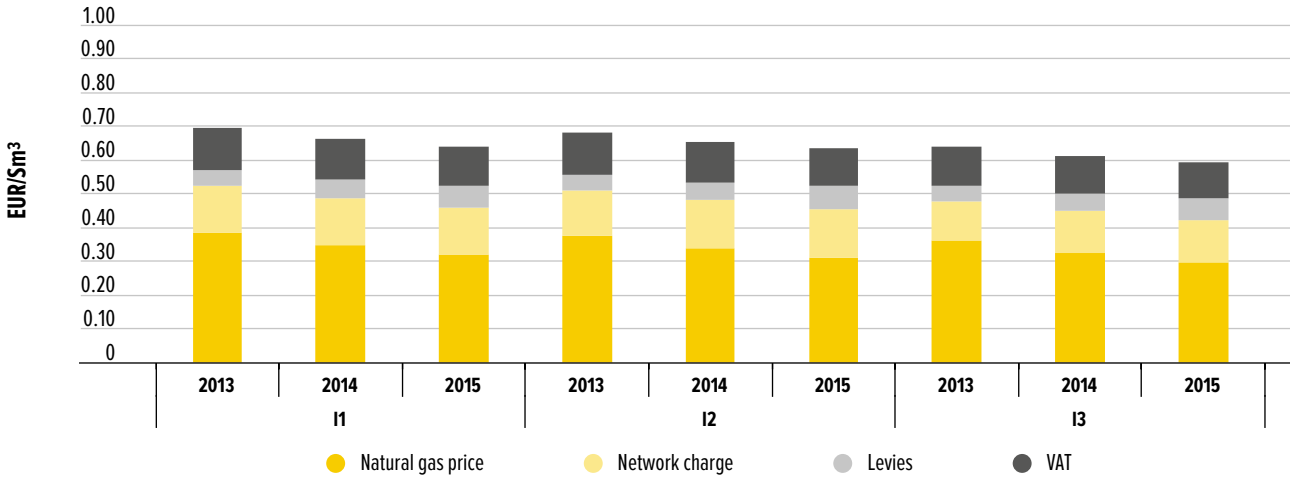
A breakdown of final prices for the natural gas supply on the distribution systems show that the supply costs are reducing, mainly because of lower price for gas as an energy source; at the same time the network charge and levies were slightly increasing but the lower price of gas had a dominant influence on the final price.

Figure 99: Structure of final natural gas price for household consumers in the period 2013–2015



Source: Energy Agency

Figure 100: Structure of final natural gas price for business consumers in the period 2013–2015



Source: Energy Agency

For the supply of natural gas the suppliers provide the payment for gas consumption and for the network charge with one bill even if a supplier and a DSO are not the same legal entity (single bill), while all were disclosed on the invoice separately.

The collected data show that positive shifts in the natural gas retail market happened in terms of more competitive offers, which is reflected in lower costs for the supply of natural gas.

4.3.2.2 Market transparency

The Energy Agency regularly carries out the monitoring of the natural gas retail market, meaning monitoring price movements, number and characteristics of offers with an emphasis on possible rapid actions in case of malpractice. The information on current tenders and any modification of their characteristics are by liable entities every month sent to the Energy Agency, which in the single point of contact uses this information to inform all stakeholders.

In order to ensure transparency of the natural gas retail market, the e-services are available on the Energy Agency's websites, among which is a web application for comparison the gas supply offers. The application allows the calculation and comparison of the costs for the gas supply for individual type of consumption according to price lists entered in the application by suppliers.

The web application for comparison of gas supply also includes the service "Check the bill", which allows a consumer to check the accuracy of a bill for supplied gas, according to the supply and consumption profile. Billing on a monthly basis is shown separately in line with legal components.

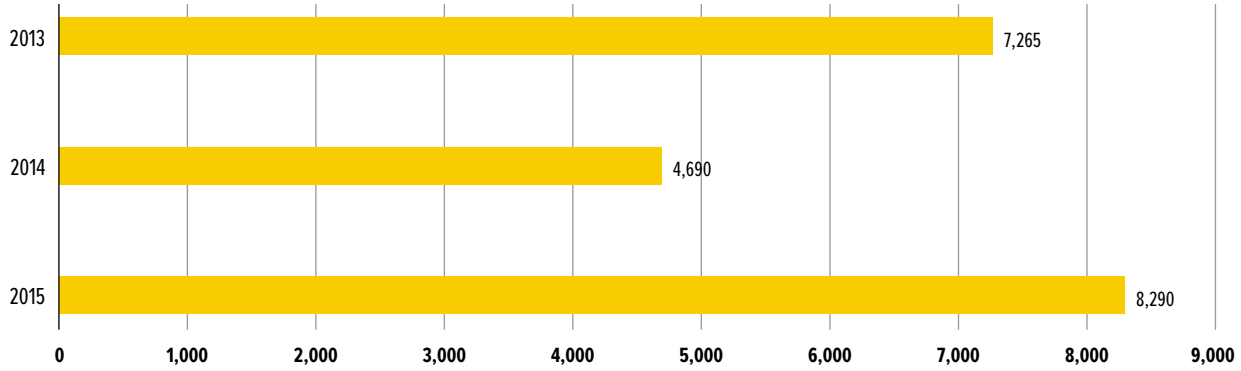
The web application for comparison of gas supply enables monthly and annual calculation and display of individual elements of the bill, which together form a final amount to be paid.

A comparison of the costs is in the publicly available part of the comparative services from the implementation of the Energy Act-1 onward restricted to regular price lists. This means that consumers no longer have the single access to all price lists and offers and that they have to search for this information at individual supplier. Nevertheless, by using the application comparison the gas supply offers the users have the quick access to websites of all suppliers and their price lists.

4.3.2.3 The level of market effectiveness

Operation of the market in 2015 again resulted in high number of switching suppliers. The number of switchings was almost doubled in comparison to 2014. Such development indicates an increased competition between suppliers and better market liquidity. These facts are also reflected in changes in the shares of the suppliers to the retail market.

Figure 101: Supplier switchings in the period 2013–2015



Source: Energy Agency

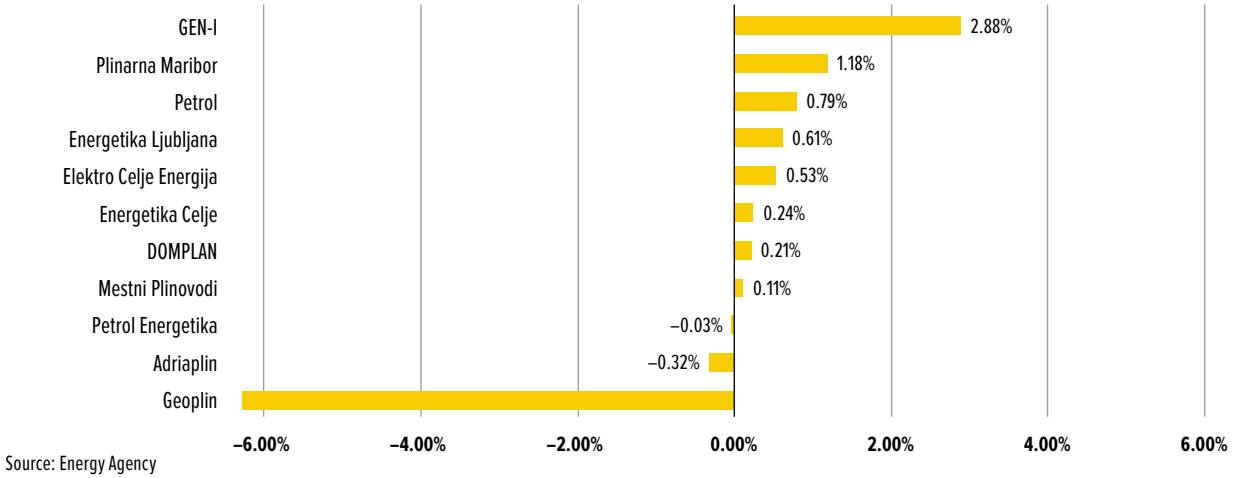
Market shares in their values and consequently with calculated HHI show that the competitiveness of the Slovenian retail market is steadily increasing. In 2015, the increased competitiveness was achieved primarily because of higher market shares of the companies GEN-I and Plinarna Maribor. Both undertakings gained one place on the list of the largest natural gas suppliers in comparison to 2014. Increase in market shares of some companies led to a decrease of others. The largest decrease in the market share in 2015 happened to Geoplin, which was already in 2014 among the companies that lost the largest market share. In 2015, among the companies with more than one percent of market share ended up the company Elektro Celje Energija. On the list of the companies with more than one percent of market share, in 2014 six companies decreased their market share, while in 2015 this happened only to three companies. Table 29 shows market shares of individual companies, and changes in market shares in comparison to 2014 are presented in Figure 102.

Table 29: Market shares and the HHI of the natural gas retail market

Company	Share
Geoplin	50.48%
GEN-I	10.72%
Adriaplin	10.09%
Plinarna Maribor	6.38%
Energetika Ljubljana	6,29%
Petrol	4.20%
Petrol Energetika	3.70%
DOMPLAN	1.89%
Energetika Celje	1.53%
Mestni Plinovodi	1.27%
Elektro Celje Energija	1.02%
Others	2.42%
Total	**100.00%**
HHI of the retail market	**2,887**

Source: Energy Agency

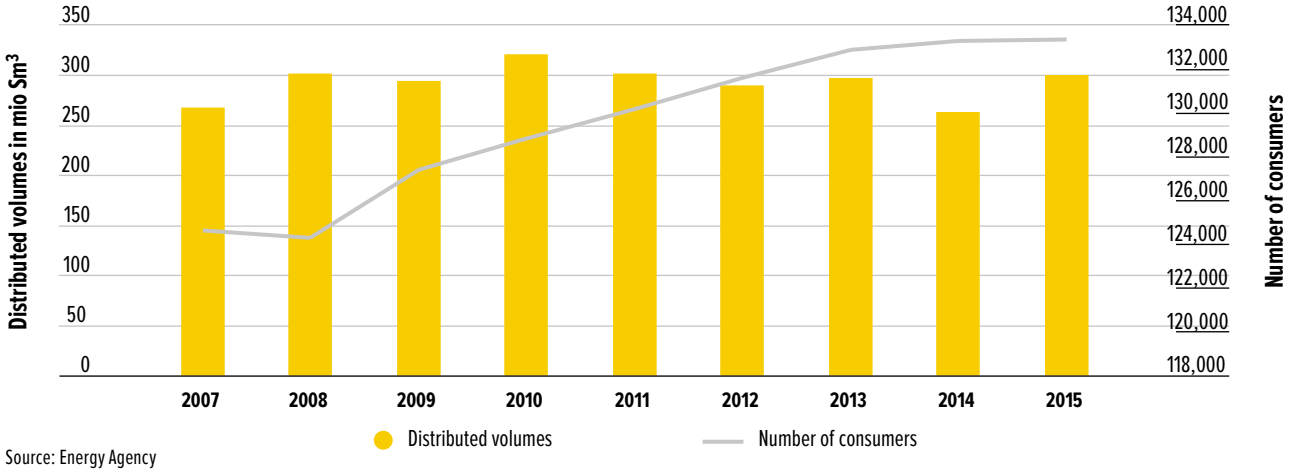
Figure 102: Changes in market shares between 2015 and 2014



Source: Energy Agency

The increasing activity of the natural gas retail market functioning indicate also the volumes of gas sold to the final consumers in the retail market. Despite the fact that the number of consumers supplied directly from the transmission system decreased from 134 to 132 consumers and the fact that an increase of consumers on distribution system is negligible, the final customers consumed almost 7% more gas than in 2014. Final consumers on the transmission system consumed slightly less gas, but consumers on distribution system increased their consumption by almost 12%. Higher consumption of natural gas not driven by more consumers had probably presented additional encouragement to suppliers for their activities aimed at increasing their market shares. The number of consumers increased by 82 (to 133,312) in comparison to 2014. Distributed volumes of natural gas in relation to the number of consumers are shown in Figure 103.

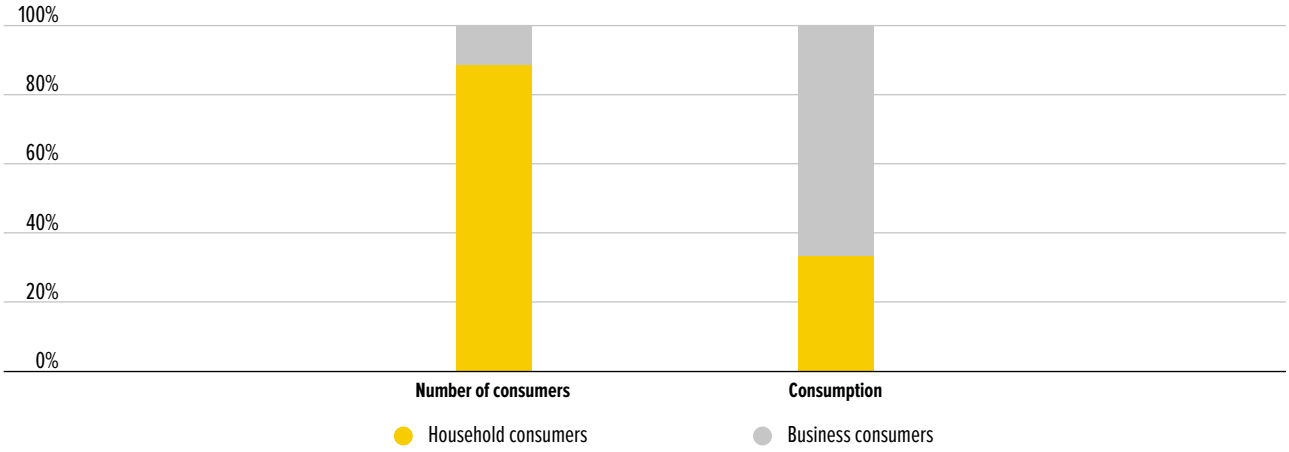
Figure 103: Distributed volumes and number of connected consumers



Source: Energy Agency

There is virtually no change in the structure of the retail market on the demand side since the change in the number of final consumers is too small. However, due to increased consumption slightly changed the ratio of it. In 2015, the consumption of business consumers increased to 67%, while the consumption of household consumers fell to 33% of all natural gas consumption. Figure 104 shows the described ratio between the number of consumers on the distribution networks and their consumption.

Figure 104: Number of consumers on the distribution networks and their consumption



Source: Energy Agency

4.3.2.4 Recommendations on supply prices, investigations and measures to promote effective competition

All prices in the wholesale and retail market are set freely. The natural gas retail market price is made up of the costs for energy source, network charge for the distribution and measurements, contributions, taxes, levies and VAT. The price for natural gas as an energy source largely depends on business strategies of an individual supplier and supply conditions on the wholesale market. Purchase price is influenced by several factors, which are characteristics of signed contracts, movements of prices of oil and oil products, foreign exchange rates, weather conditions, supply offers on international power exchanges and competition on the market.

Natural gas retail market prices are not regulated, therefore, the Energy Agency does not give any recommendations on prices.

One of the Energy Agency's task is consumers protection. The Energy Agency continuously monitors the retail market, cooperates with regulatory and supervisory authorities on the national level (Market Inspectorate, Competition Protection Agency) and with independent and non-profit consumers organizations. It is also responsible for updating of information on market developments, and ensures market transparency with activities and services that are provide in single point of contact.

For the natural gas market the same rules on prohibition of restriction of competition and abuse of a dominant position are applied as for other types of commodities.

In 2015, the Energy Agency detected that in the wholesale natural gas market could come to distortions of competition and abuse of dominant position. The case was handed over to the Slovenian Competition Protection Agency, but no decision was taken nor any action against any of the natural gas market participants in the market.

In the area of measures carried out in accordance with the third package of energy legislation to harmonisation of data exchange at the national and regional level, the Energy Agency implemented the Act on the identification of entities in the data exchange among participants in the electricity and natural gas market, which binds market participants to use standard identifiers of key data entities in electronic exchange of data in the market. As a part of its activities in ebIX, the Energy Agency actively contributed to the implementation of standard models of data exchange in the natural gas market (see 3.3.2.4).

4.4 Security of supply

The activities, undertaken by the Energy Agency as the competent authority for the implementation of the provisions of Regulation (EU) No 994/2010 (hereinafter referred to as the Regulation 994/2010) are divided into three areas.

The first one is related to the introduction of two acts by which in accordance with the Energy Act the Energy Agency implemented the provisions of the Regulation 994/2010. Preventive Action Plan and Emergency Plan for the natural gas supply the Energy Agency in accordance with the rules set in legislation sent to the European Commission at the end of 2014 for evaluation.

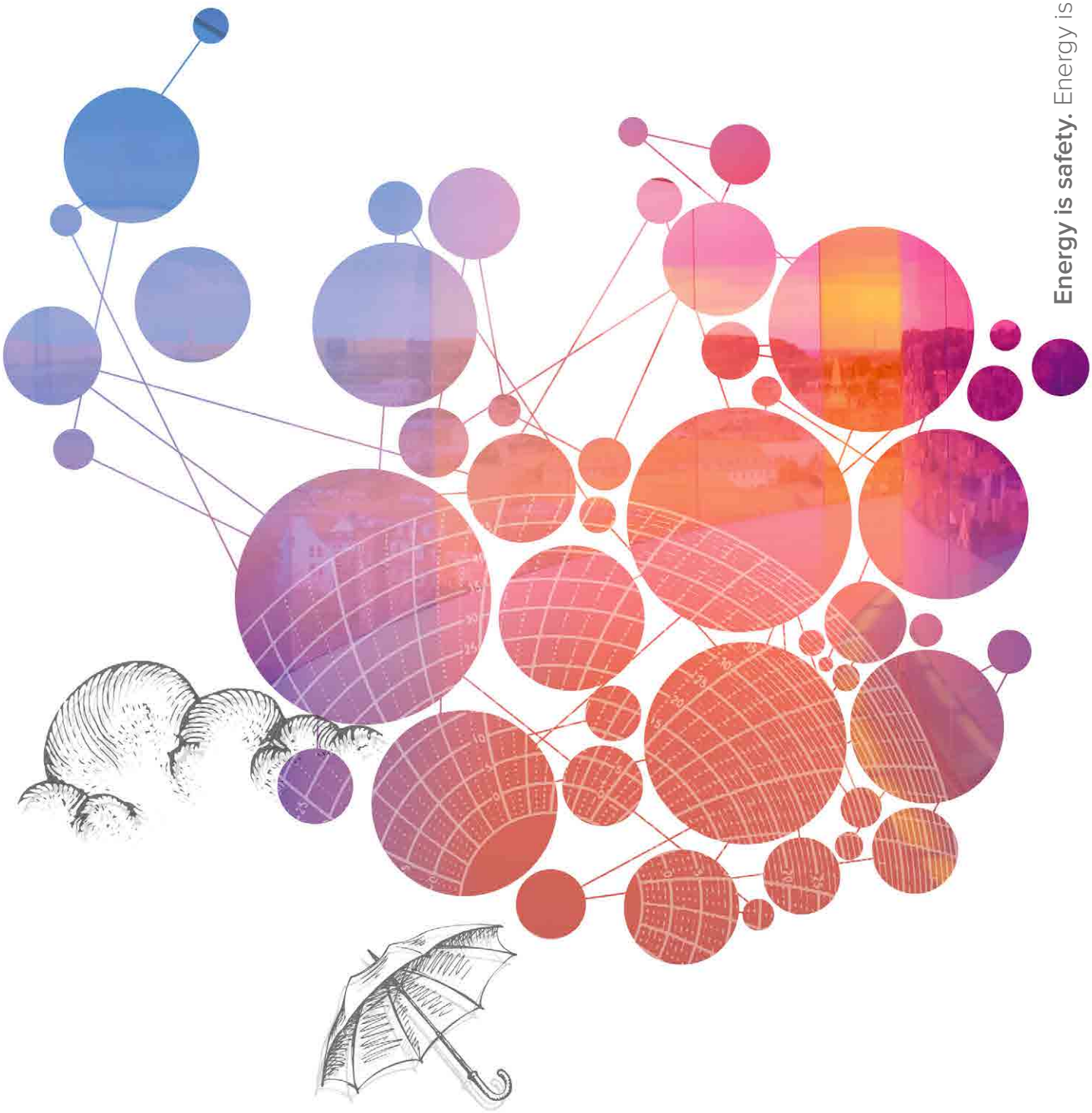
In 2015, the Commission sent to the Energy Agency its opinion, in which some doubts about the correctness of the model envisaged for verifying the compliance of supply standard were expressed; the Commission also gave some suggestions for amendments to both acts, with which the Energy Agency could improve the management of the security of supply in the natural gas market in Slovenia.

After reviewing the opinion, the Energy Agency sent additional explanations and justifications. It was agreed what has to be amend and correct in the next risk assessment, which will be carried out in 2016; the changes will be made to both documents on the basis of the renew risk assessment.

During the process of annual examination of ensuring reliable supply, the Energy Agency in order to evaluate the supply standard under the methodology in force, provided adequate data on temperatures and the required volumes of gas in accordance with circumstances. For determination of additional volumes of gas for the supply of protected consumers in case of extreme temperatures during a 7-day peak period, on a basis of low temperatures the correction factor was set, which amounted to 31.04%. For determination of additional volumes of gas for the supply of protected consumers in case of a period of at least 30 days in case of the disruption the correction factor amounted to 25.11%. At all natural gas suppliers the sufficient quantity of gas required to meet the supply standard was determined. Apart from favourable weather condition also relatively calm political relations between Europe, Ukraine and Russian Federation ensured favourable solutions to the security of supply.

The Energy Agency started the process of verification of the implementation of Regulation 994/2010 and the assessment of needs for its change. For this purpose, the first inquiry about the perception of its requirements was conducted through a consultation document. The Energy Agency examined the document and replied to by using gained experiences. The amendments to Regulation 994/2010 will continue in 2016.

5. Consumers protection



Energy is safety. Energy is life.

5.1 Protection of electricity and natural gas consumers

The household consumer means a customer purchasing electricity or natural gas for his own household consumption, excluding consumption for performing commercial or professional activities. His rights are protected with the regulations regulating the energy market and also with Consumer Protection Act, which as a fundamental legal act regulates the rights of consumers in relation to companies, and against unfair commercial practices and the scopes of fair business of companies in relation to consumers.

The companies and other organizations providing public service and commodities to the customers in Slovenia are obliged to ensure a regular and high-quality provision of services and strive to appropriately develop and improve the service quality. Contractual terms and conditions imposed by companies engaged in gainful activity must be clear and understandable, and not unfair to the household consumer.

The Energy Agency on its website provides for household consumers a single point of access to information on their rights, valid regulations and general acts for the exercise of public authority and the methods for handling complaints in the event of a dispute with a supplier or electricity or gas DSO.

Prior to connection to the system, the electricity or gas DSO must inform the consumer of his rights and obligations in connection with the choice of supplier and about the last resort or emergency supply.

A household consumer has the right to free periodic information about his consumption of electricity and gas consumption characteristics; information should be as often as necessary that consumer can manage his own consumption. The right to be informed has also a household gas consumer, who must be informed about his consumption by gas DSO.

A household consumer has also a right to quality supply of electricity or to the supply of quality gas.

5.1.1 Supply contract and general terms and conditions

A household consumers enters into contract for the supply of electricity or natural gas, which can be freely chosen. A supplier has to provide for household consumers on its website information on applicable prices and tariffs, and on standard terms and conditions on supply. An integral part of the supply contract are the contractual terms, which may not be unfair; a supplier has to inform a household consumer, prior to signing a supply contract, even if the contract is concluded through an intermediary. Supply contract must include information on consumer's rights, including information on handling the complaints relating to the system of reimbursement and compensation, if the level of quality of services under the contract is not achieved; in the of case a contract on gas supply also a notice that a household consumer is a protected consumer must be involved.

A household electricity consumer has the right to free periodic information about his consumption of electricity, consumption characteristics and possibilities of efficient use of electricity; information should be as often as necessary that end consumer can manage his own consumption. The right to free periodic information about his consumption has also a household gas consumer, who must be informed about his consumption by gas DSO.

A supplier must inform a household consumer at least one month prior to their taking effect, about any intended changes to the contractual terms and conditions. At the same time, due to a modification of the standard terms and conditions, a consumer has to be informed about the right to withdraw from a supply contract within one month following the entry into force of modified general terms and conditions without notice and without being subject to a penalty payment.

A supplier must also inform a household consumer about the electricity price increase at least a month before the introduction of higher price, or about an increase in natural gas price on time, which is before the end of the accounting period following the price increase.

Suppliers must offer household consumers a choice of payment methods for electricity or gas, including prepayment systems. Household consumers may not be charged for flat-rate operating costs on the basis of a regular price list; they may be charged for in action or bundled offers.

A household consumer may withdraw from a supply contract without paying a penalty, damages, compensation or any other form of payment for reasons of withdrawal from the contract prior to the expiry of the set time limit, provided that such withdrawal takes effect at least one year following the conclusion of the contract

A household consumer has a right to choose and switch an electricity or gas supplier. Switching a supplier must be carried out within 21 days of a completed request being submitted. A consumer may not be charged for changing supplier. If a household consumer terminates a supply contract at least one year after the conclusion of a contract due to supplier switching, he can withdraw from a contract without a notice period. If a consumer withdraws from a supply contract prior to one year following the conclusion of the contract, may be obliged to bear the consequences of early withdrawal laid down in the supply contract.

On the electricity bills electricity suppliers must indicate the shares of individual energy production sources in the whole structure of the electricity of individual supplier in the preceding year as well as information on the environmental impact in terms of CO_2 emissions and the quantity of radioactive waste resulting from the electricity generated by the overall structure of electricity production sources used by the supplier over the preceding year. In that way, a reasonable comparison of different suppliers at the national level is possible.

5.1.2 Disconnection of a household consumer

A DSO may disconnect a household consumer at individual delivery point upon prior notice if the system user fails to comply with its obligations within the time limit specified in the notice. A household consumer must be informed at least 15 days in advance. A DSO may not disconnect a vulnerable consumer if he is eligible for an emergency supply. If the disconnection exceeds a period of three years, a household consumer, prior to the reconnection, must obtain a new approval for connection to the system as any other system user, and conclude a new contract for connection.

In 2015, due to non-payment of the network charge for the use of the system 5949 household consumers of electricity were disconnected. This number represents for 0.24 percentage point lower number of disconnections of all household consumers than the year before, when there were 7926 disconnections. The number of disconnections due to non-payment was in 2015 in comparison with 2011 lower by 0.27 percentage point since 8037 household consumers were disconnected in Slovenia that year.

Table 30: Number of disconnections of electricity household consumers due to non-payment from 2011 to 2015

	2011	2012	2013	2014	2015
Elektro Celje	866	753	1,058	2,640	575
Elektro Gorenjska	708	747	192	782	477
Elektro Ljubljana	2,307	1,698	2,628	1,791	2,256
Elektro Maribor	1,246	1,344	1,237	1,766	1,367
Elektro Primorska	2,910	2,035	1,762	947	1,274
Total	**8,037**	**6,577**	**6,877**	**7,926**	**5,949**

Sources: Electricity suppliers, SODO d.o.o, Energy Agency

In 2015, gas DSO disconnected 758 natural gas household consumers, 711 of them due to non-payment the network charge for the use of the system. This number represents for 0.12 percentage point lower number of disconnections of all household consumers than the year before, when 861 households were disconnected. The number of disconnections in 2015 was lower by 0.49 percentage point compared to 2011, when 1281 households were disconnected. Because of invalid supply contract or withdrawal of the contract six consumers were disconnected, and because of other reason 41 household consumers. The supply was stopped permanently to 1285 users, of which 1108 were households; that is 239 more than in 2014. Gas DSOs from 30 April to 1 October did not disconnect 159 household consumers despite non-payment of bills. 25 of them were referring to the rights of not being disconnecting because their lives and health would be endangered.

Table 31: Number of disconnections of natural gas household consumers due to non-payment from 2011 to 2015

	2011	2012	2013	2014	2015
Number of disconnections	**1,281**	**1,167**	**1,207**	**861**	**711**

Sources: Natural gas suppliers, gas DSOs, Energy Agency

5.1.3 Protection of vulnerable consumers and emergency supply

Protection of vulnerable consumers is one of the most important forms of consumers protection. Energy Act governs the protection of household electricity consumers in its Article 51 and in Article 176 the protection of household natural gas consumer. A vulnerable consumer is a household consumer who, due to his financial circumstances, income and other social circumstances and living conditions, is unable to obtain an alternative source of energy for household use that would incur the same or smaller costs for essential household use. An electricity or a gas DSO may not disconnect a vulnerable consumer from supply or restrict his consumption before it reaches a quantity that is absolutely necessary in view of the circumstances (season, temperatures, place of residence, health condition and other similar circumstances) in order not to jeopardise life and health of the customer and persons living in his household. Prior to disconnection, a DSO must inform the consumer of the possibilities of emergency supply and of the evidence to be provided by the consumer in order to be approved for emergency supply by the operator.

The eligibility for the electricity supply of vulnerable customers is assessed by DSO, on the basis of evidences submitted (a decision of the competent social service on the financial situation of the household, and medical examination that the person living with the customer uses medical devices, which for its functioning need electricity and disconnection of electricity would threatened the person's life. All the supplier's costs arising from such a situation are covered by eligible revenues of the DSO.

According to the provision of the Decree on functioning of the natural gas market, a household consumer who has no means of subsistence and therefore his life and health or life and health of persons living with him, exercising the right to maintain the energy supply, if he is the recipient of social welfare. This right can be exercised between 1 October to 30 April, but only for a time when bad finance situation can be proved. Costs of supply are covered by a gas DSO until they are paid by the vulnerable consumer.

In 2015, no consumer was provided by the emergency supply, the same as the year before.

The right of vulnerable natural gas household consumer in 2105 exercised 25 consumers, that is 21 more than in 2014.

5.1.4 Last resort supply

In accordance with the legislation governing the operation of the electricity market the electricity DSO automatically and without time limits ensure supply to final consumers connected to its system if the contract for supply is terminated because of measures resulting from the insolvency or illiquidity of a supplier. The electricity DSO must immediately inform the consumer of the termination of the contract for the supply and of the beginning of the provision of last resort supply. At the request of a consumer, the electricity DSO must provide a supply to each household consumer. The electricity DSO must inform consumers of the possibilities and conditions of last resort supply. In line with the provisions of General Conditions for the Connection to the Electricity Distribution Network last resort supply is time-limited to a maximum of 60 days, but may be extended at the request of a consumer. The price of last resort supply is set by the electricity DSO and is made public. The price must be higher than the market price of the supply to a comparable consumer but must not exceed the price by more than 25%.

The electricity DSO was publishing the conditions and prices for last resort supply. Under the terms of last resort supply, six consumers were served while in the year before 21 consumers need this service.

5.1.5 Consumers' complaints and dispute settlement

One of the key elements of the supply contract concluded with a household consumer is an agreement on how to handle the complaints relating to electricity or gas supply. Household consumers have the right to transparent, simple and inexpensive procedures for dealing with complaints on gas supply. For this purpose, the supplier alone or with other suppliers within the Association shall appoint an independent and impartial person or several persons responsible for the treatment of complaints and to whom household customers shall address their complaints in relation to alleged violations of the supplier in implementing a natural gas supply contract.

A supplier must provide the household consumer with the following information, in writing or any other suitable form:

- a precise description of the types of complaint to be decided upon by the person appointed, as well as any existing restrictions and the value of the disputed claim;
- the rules governing the referral of the matter to the person appointed, including any requirements that the household consumer may have to meet, as well as other procedural rules, notably those concerning the written or oral nature of the procedure, attendance in person and the languages of the procedure;
- the rules serving as the basis for decisions;
- the types of a decision to be taken in the procedure.

The person appointed must decide on complaints within two months following their receipt. The decision must be binding on the supplier if the consumer confirms it using a written statement within eight days of its receipt. If the consumer disagrees with the decision, he may bring an action before the court.

More detailed rules on the appointment of persons for handling complaints, information to household consumers on complaint handling, the system of reimbursement and compensation and the procedure for complaint handling must be disclosed by the supplier or association of suppliers and published on its website.

The supplier or association may determine a system of reimbursement and compensation for consumers which must apply to individual breaches of their obligations relating to supply, provided this is justifiable given the amount of damage, gravity of the breach and level of responsibility.

Of all 834,664 electricity household consumers, suppliers in 2105 received 9535 complaints, disagreements and arguments, which is around one percent (1.14%) of complaints of all household consumers (in 2014 it was 0.77%). Most of complaints were related to the issued bill, that is 64% of all received complaints of household consumers. Of all the complaints received, 42% were unjustified. More detailed presentation of household consumers complaints against suppliers in the period 2013–2015 and the reasons is shown in Table 32 and decisions taken on complaints in Table 33.

Table 32: Household electricity consumers complaints against suppliers by reasons in the period 2013–2015

The reason for complaint	2013	2014	2015
Terms of sale	35	65	115
Contract terms	406	294	1,271
Electricity price	311	179	150
Bill	4,313	3,386	6,114
Disconnection due to non-payment	187	86	96
Supplier switching	16	728	75
Technical reasons, which limit the supply	0	3	34
Other	2,056	1,189	1,279
Technical reasons, which limit the supply	**7,877**	**6,410**	**9,535**
Unjustified complaints	**2,559**	**1,820**	**4,013**

Sources: Electricity suppliers, Energy Agency

Table 33: Decisions on complaints by electricity household consumers against electricity suppliers in the period 2013–2015

Number of complaints	2013	2014	2015
- received	7,877	6,410	9,535
- rejected	552	480	401
Number of complaints dealt with	**7,325**	**5,930**	**9,134**
- granted	4,765	4,110	5,121
- rejected	2,559	1,820	4,013

Sources: Electricity suppliers, Energy Agency

In 2015, the person appointed received four complaints, one was granted and three were rejected. In one case the customer went to the court. In comparison with 2014, these are complaints more.

The natural gas suppliers in 2015 received 3278 complaints, disagreements and arguments of consumers, out of which 2922 complaints were from household natural gas consumers. Most of the complaints were related to billing, namely 84%. Of all complaints, 47% were unjustified.

More detailed presentation of household consumers complaints against suppliers in the period 2013–2015 and the reasons is shown in Table 34, and decisions taken on complaints in Table 35.

Table 34: Household natural gas consumers complaints against suppliers by reasons in the period 2013–2015

The reason for complaint:	2013	2014	2015
Terms of sale	163	27	55
Contract terms	438	67	181
Gas price	170	90	93
Bill	2,482	2,212	2,455
Disconnection due to non-payment	31	29	10
Supplier switching	1,202	27	34
Technical reasons, which limit the supply	46	73	77
Other	4	159	17
Number of complaints	4,536	2,684	2,922
Unjustified complaints	1,099	979	1,384

Sources: Suppliers of natural gas, Energy Agency

Table 35: Decisions on complaints by natural gas household consumers against gas suppliers in the period 2013–2015

Number of complaints:	2013	2014	2015
- received	4,536	2,684	2,922
-rejected	0	0	0
Number of complaints dealt with	**4,536**	**2,684**	**2,922**
- granted	3,437	979	1,538
- rejected	1,099	1,705	1,384

Sources: Suppliers of natural gas, Energy Agency

Appointed persons received all together 13 complaints by household consumers; all of them were granted In comparison with 2014, appointed persons received 11 complaints more.

A household consumer may submit a request to the Energy Agency to decide on a dispute with a gas DSO. A request may be submitted to the Energy Agency if prior a preliminary procedure was carried out with a gas DSO. In the area of gas, all DSOs received 2250 complaints of consumers. Household consumers in 2015 filed 241 complaints more than in 2014 and 892 less than in 2013. Most of the complaints were related to billing, namely 62%, the same as in 2014. 52% of complaints were unjustified. The details are shown in Table 36.

Table 36: Complaints of natural gas household consumers against gas DSOs in the period 2013–2015

The reason of complaint:	2013	2014	2015
Connection procedure	6	4	3
Planned interruption of supply	0	1	0
Unplanned interruption of supply	10	0	12
Network charge	59	8	31
Metering	752	446	569
General conditions	13	18	11
Bill	798	1,017	1,151
Supplier switching	1,060	25	40
Other	61	107	50
All complaints received	**2,759**	**1,626**	**1,867**
Unjustified complaints	**899**	**603**	**982**

Sources: Gas DSOs, Energy Agency

Possible violations of the general rules for the protection of household consumers in Slovenia are monitored and appropriately sanctioned also by the Market Inspectorate.

5.1.6 Publication of prices

Household consumers have the right to be informed of electricity and natural gas prices in a comprehensible manner, and to have possibility to compare these prices. All suppliers were publishing prices for households on their websites. Households could also use the Energy Agency's web application for comparison of electricity and gas supply costs, which are based on regular price lists and enable the comparison and calculation of the costs of supply on a monthly or annual level.

5.2 Consumer protection in administrative procedures

The Energy Agency, acting under public authorisation, decides on disputes between the electricity and gas system users, operators or the electricity market operator in the following cases:

- access to the system;
- amount charged for the use of the system;
- violations of the system operating instructions;
- establishing imbalances and amounts for covering the costs of imbalance settlement and violations of general acts governing imbalances and their settlement;
- other issues where stipulated by the EA-1.

In resolution of disputes an additional criteria is taken into account, namely that contested subject of these disputes relates to the rights and obligations arising from directly applicable regulation of the European Union, EA-1 or executive regulations issued on its basis or the act on exercise of public authority.

The Energy Agency resolves disputes by administrative procedure, and issues individual acts with which decides on the rights, obligations and legal benefits of individuals; EA-1 provides also some special features.

When a party requests that the Energy Agency decides on a dispute with another party, such a request is allowed only if the first party provides evidence that it has requested in writing from the party against which it is filing a request that said party accede to its request that is the subject of the dispute and has set an appropriate time limit for the opposing party to respond to the request. This time limit may not be shorter than 15 days.

The Energy Agency has in relation to the final decision in the decision-making process on a dispute between the parties extensive powers since it can:

- decide on a request of a party;
- order the party to carry out an action or prohibit to carry out an action;
- repeal, partially or in full, a contract or any other act;
- decide on a claim concerning an overpaid or under paid network charge or price for the operator service;
- decide on other matter if so provided by the legislation.

Against a decision of the Energy Agency only judicial protection in front of the Administrative Court is possible.

The Energy Agency in an administrative procedure decides in the second instance on an appeal against a system operator's decision on issuing or rejecting a connection approval.

Procedures related to consumer protection conducted by the Energy Agency are free of charge since no administrative fees are charged for final decisions; all these procedures are short due to tight legal framework. The Energy Agency must decide on appeal within two months of receiving a full application; this deadline may be extended only with the consent of the applicant.

In comparison with 2014, when 53 requests were filed, this number was in 2015 significantly reduced. The Energy Agency received altogether 20 requests, 10 appeals for deciding on appeals at first instance and 10 at second instance, that is applications against a decision on granting or rejecting a connection approval. From the previous year, the Energy Agency decided on eight disputes. Most of the disputes were related to electricity, only one to natural gas. During this period, three administrative disputes were filed in the Administrative Court. One request was dismissed for lack of jurisdiction; one was assigned to the competent authority, and one procedure was suspended since the party withdrew its request. At the end of the reporting period, 24 applications were resolved, and four cases remained open.

In comparison with the last five years, when most of the decision were made with respect to the appeals against the issued connection approval, in 2015 the settlements of disputes and jurisdictions in disputes were almost at the same level, while the content of submitted applications did not change significantly compared to 2014. In the dispute settlement proceedings dominated decisions related to improper functioning of measuring or control devices. Consumers also made complaints due to a disagreement of the owners of properties or facilities with respect to the connection to the distribution network, incorrect classification into the consumer groups and in addition because of procedural reasons.

5.3 Monitoring the electricity and natural gas market

The Energy Agency supervises the implementation of the provisions of EU regulations and the provisions of the EA-1 concerning electricity and gas markets and regulations and general acts issued under EA-1, except in cases that under this Act fall under the jurisdiction of individual competent inspections. The Energy Agency also monitor the implementation of the provisions of the EU regulations concerning internal energy market. In monitoring procedures the provisions of Inspection Act are applicable. The Energy Agency controls and imposes the control measures by official duty.

If the violation is established, the Energy Agency is in accordance with EA-1 obliged to:

- carry out preventive measures and issue a warning;
- carry out measures to protect the rights of other persons;
- propose that another competent authority adopt measures;
- order other measures for which the Energy Agency is authorised by this Act or any other regulation

The Energy Agency as the minor offence authority also decides on the violations of the Energy Act and regulations issued under EA-1 in accordance with Minor Offences Act.

In comparison with 2014, when 20 cases related to the monitoring were under supervision, in 2015 the number of procedures significantly increased. 60 new cases were opened, and nine were transferred from the previous year. 61 cases were related to electricity, seven to natural gas, and one to district heating, which was assigned to the competent authority. Two cases were discharged by the Energy Agency's decisions. In cases, in which the Energy Agency with its activities during the procedures eliminated violations, warnings to the obligated parties with a reference to comply with

the applicable law were issued. For cases where violations were not detected, a decision to stay the proceedings was issued. Two cases were assigned to the competent authorities, and in one case the Energy Agency decided not to initiate the proceedings. Due to violations of the provision of the Energy Act one minor offence proceedings was initiated, but by the end of the year, it has not been terminated.

The Energy Agency supervised suppliers of electricity and natural gas, system operators, contractors of distribution system operators and other providers of energy-related activities.

In the monitoring procedures, the Energy Agency found the infringements related to the connection procedures and issued connections approvals (for example concerning the adequacy of reasons to reject the reduction of operational restriction or paying disproportional costs according to the criteria set in Article 113 and 147 of the Energy Act). Violations were also related to ensuring transparent and simple procedure for dealing with complaints of household electricity consumers under Article 50 of the Energy Act and informing users on planned supply interruption in accordance with Article 150 or emergency supply under Article 176 of the Energy Act. The violations were also detected in the following areas: a supplier switching (refusing to switch a supplier because of not paying the costs arising from the existing supply contract); distribution of natural gas (distribution without granted concession), and facilitating the access and provision of data.

An increasing number of monitoring procedures of electricity suppliers was introduced, related to disclosure of electricity production sources on issued invoices, promotion material and the internet (Article 42 of the Energy Act). In 10 cases violations were not found, therefore, the procedures were terminated with issuing a decision to discontinue the proceedings; unresolved cases were transferred to 2016. At the end of the year, a greater number of procedures were initiated against the electricity suppliers to household and small business consumers related to elements of the supply contract and general terms (Article 48). Among the procedures, which started in 2015 but were not concluded by the end of the year, it is worth mentioning the monitoring the charging of flat-rate dealing with regular price list, indication of a number of delivery point on a single bill, and the compliance with the provisions of the system operating instructions.

6. Renewable energy sources, cogeneration, and energy efficiency

Energy is circulation. Energy is life.

6.1 Electricity produced from renewable energy sources and high efficiency cogeneration

The use of renewable energy sources (hereinafter RES) has in the national energy policy an important role. In recent years, the ambitions in this area are increasing. Energy efficiency improvement and increased use of energy from RES bring significant direct and indirect benefits: reduced greenhouse gas emissions, improved security of supply, technological development and innovations, and opportunities for employment and regional development. They also contribute to better air quality. Cogeneration through combined heat and power (hereinafter CHP) is one of the main measures to improve energy efficiency.

With regard to the RES, Slovenia has a goal set forth, namely by 2020 achieve 25% share of RES in gross final energy consumption and 10% of RES in transport. A national renewable energy action plan for 2010-2020 (hereinafter NREAP) is prepared. The goal and NREAP are part of the implementation of the joint environmental energy policy of the EU, which by the Directive 2009/28/ES committed the Member States to reach 20% share of RES in gross final energy consumption at the EU level, as well imposed national targets in accordance with their economic conditions and energy potential.

At the EU level in autumn 2014, even more ambitious political decision was adopted – by 2030 EU will reach at least 27% share of energy from RES. National targets will be determined by the Member States themselves. Slovenia had set an ambitious goal which has not yet been adopted.

For CHP there are no specific goals but a contribution of this technology to achieve the energy efficiency national targets is important. In accordance with Article 3 of Directive 2012/27/EU, Slovenia has set a target to improve energy efficiency by 2020 in a way that the use of primary energy in 2020 will not exceed 7.125 Mtoe (82.86 TWh).

In 2014 the share of RES in gross final energy consumption in Slovenia was 21.9%, and by 5.9 percentage point higher than in 2005. By 2020 the share of RES should be increased by 3.1 percentage point. In electricity is Slovenia 5.4 percentage points behind the target.

Table 37: The achieved RES targets in gross final energy consumption in the period 2004–2014 and target share of RES in 2020

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2020
												Target share of RES
Share of RES	16.2 %	16.0 %	15.6 %	15.6 %	15.0 %	19.1 %	19.3 %	19.4 %	20.2 %	21.5 %	21.9 %	25 %
Transport	0.4 %	0.4 %	0.6 %	1.1 %	1.5 %	2.0 %	2.8 %	2.1 %	2.9 %	3.4 %	2.6 %	10.5 %
Electricity	**29.3 %**	**28.7 %**	**28.2 %**	**27.7 %**	**30.0 %**	**33.8 %**	**32.2 %**	**30.8 %**	**31.4 %**	**32.8 %**	**33.9 %**	**39.3 %**
Cooling and heating	18.4 %	19.0 %	18.6 %	20.4 %	19.2 %	25.0 %	25.7 %	28.4 %	30.2 %	31.7 %	33.3 %	30.8 %

Sources: SURS, Energy Agency

6.2 The RES and CHP support schemes

The promotion of electricity generated from RES and in high-efficiency cogeneration in 2009 underwent significant changes. With the new support scheme, which in 2002 upgraded the system of "qualified producers", several changes were introduced in order to encourage in the past quite slow development of RES and CHP, and thereby to ensure the achievement of national targets. The supports had to be harmonized with the EU legislation on granting state aids; the support scheme was successfully notified to the Commission as a permitted form of state aid for 15 years. Integration of devices into the support scheme differed from the plans in the national documents (NREAP 2010–2020) since the most expensive technologies represented 79 or 85% of all new investments in 2010 and 2011, which resulted in an unplanned increase in costs of the support scheme and consequently high costs for final consumers that had to pay contributions for financing the support scheme. This was also the main reason for another amendment of the support scheme.

The amendment was introduced with the new Energy Act; this time with an aim to control the costs of the support scheme and competitive allocation of a proportional share of state aids. The funding should be encouraging for investors to invest in new projects.

The legal basis of the supports schemes are provided by the Energy Act and several executive regulations. Operation and organizational structure are governed by two regulations: Regulations on support for electricity generated from renewable energy sources and Regulation on support for electricity generated from high-efficiency cogeneration of heat and electricity, which were repealed by the Energy Act but until the implementation of new regulations still in use. This issue is also regulated by other executive regulations, in particular, the responsibilities and tasks of the institutions responsible for the operation of the support scheme – these are the Energy Agency, and the Centre for support, which operates within Borzen.

It should be noted that the rules for granting state aid are the exclusive competence of the European Union and all national legislation is adapted to these rules. This applies also for setting the rules and determination of conditions of the support scheme, which have to be approved by the Commission before the implementation of the scheme as we deal with the state aid within the exemption under Article 107, point c, third paragraph of the Treaty on the Functioning of the European Union. This is also the main reason why the support scheme established by the Energy Act was not implemented in 2015; from the beginning of 2015 has been in the notification process at the Commission and we have to wait to be declared compatible with the internal market.

Within the support scheme the producers of electricity from RES and CHP the state aid is allocated; the difference between the production costs and the revenues, if the production costs, including normal market yields on investments, exceeds the price of this electricity that can be achieved in the market. The scheme supports the generation of electricity from the following RES: hydro energy, wind, solar energy, geothermal energy, biomass, biogas, energy from landfill gas and sewage treatment plants and energy from biodegradable waste. From 2010 until the implementation of the Energy Act generating plants on RES up to 125 MW and CHP plants up to 200 MW could participate in the scheme. Since the implementation of the Energy Act grants are limited to generating plants using RES up to 10 MW, except for plants using wind where this limit is 50 MW, and high-efficiency cogeneration up to 20 MW.

In the future, the producers entering the support scheme with the projects using RES or CHP will have to undergo the competitive selection process, and the best projects will be allowed to enter into the support scheme. Until the implementation of the Energy Act, the application and the fulfilment of the required conditions was enough to enter the scheme.

In case of cogeneration of electricity and heat grants are intended only for high-efficiency cogeneration. A general criteria of operating hours is applied; according to this criteria plants are divided into two groups with different level of support – under 4000 hours and more than 4000 annual operating hours. The separation is mainly intended for the distinction between seasonal and annul operation.

The support for electricity from RES and CHP is carried out as a guaranteed purchase of electricity at a predetermined fixed price, or as operating premium where the producer sells its energy on the market. The future development of the support scheme is a slow phasing out of guaranteed prices and the priority becomes a full integration of this electricity to the market. The support is limited to 15 years for plants using RES and 10 for cogeneration units.

In the support scheme are included the owners or operators of production facilities, for which the declaration for the operating facilities and the decision on granting support were obtained by the Energy Agency, and sign a contract with Centre for RES/CHP to provide a support. If the contract on guaranteed purchase is signed, Centre for RES/CHP takes over the electricity and pays the price determined in accordance with the decision on granting support. The facility is included in the special balance group or subgroup established by the Centre for support. Centre manages the settlement of differences between forecasted and actual generation, and pays eligible producers for the electricity delivered to public network a guaranteed price. If an operating premium contract is signed, the Centre for support does not pay for the electricity; on the basis of data on net amount of electricity only pays a premium as a difference between operating costs and market price. In this case, the producers must provide for the settlement of the difference between forecasted and actual production and for the balance group; or the settlement is arranged by the supplier with whom they have signed an open contract for the sale of electricity. The support scheme funds are managed by the Centre of support.

With the implementation of the support scheme in 2009, it has also changed its funding. Financing mechanisms set by the Regulation on the method of determining and calculating the contribution for ensuring support for the production of electricity from high-efficiency cogeneration and renewable energy sources is based on contributions paid by all final consumers of electricity, natural gas, and other energy gases from the network and district heating for an individual consumption point, and also final customers of solid and liquid fossil fuels, liquefied petroleum gas and liquefied natural gas. Until 1 June 2014 the contributions were paid only by final consumers of electricity, and after this date also final consumers of solid, liquefied and gaseous fossil fuels, and consumers connected to district heating. In the second half of 2015 an amendment to the above mentioned regulation imposed a help for the energy-intensive industry by decreasing the contributions for the provision of support paid on the account of end-use of electricity.

6.2.1 Production facilities included in the RES/CHP support scheme and their total installed capacity

At the end of 2015, 3290 production facilities were included in the support scheme; most of them solar power plants, as much as 85%. All production facilities involved in the support scheme fall under the terms which were in force before the enforcement of the Energy Act.

Table 38 shows a noticeable investment activities of constructions or installation of solar plant in 2011 and 2012, in the period when values of support were extremely favourable in relation to the market value of elements of these plants. It should be clarified that the inclusion in the scheme can be carried out a few months after the actual implementation of the investment. Thus, most of the solar power plants included in the scheme in 2013 were actual constructed in 2012. Due to obvious reduction of support for solar plant in 2012, the construction of these plants after this period almost come to an end. More entries in the support scheme happened again in 2014, when the introduction of changed conditions allowed the investors to enter under the terms of the previous regime, if the contract on the use of the system was signed within six weeks after the implementation of the Energy Act. In the support scheme primarily high-efficiency cogeneration units using fossil fuels and wood biomass were included.

Table 38: Number of production facilities included in the support scheme, and dynamics of their inclusion (under the terms before the enactment of the Energy Act EZ-1)

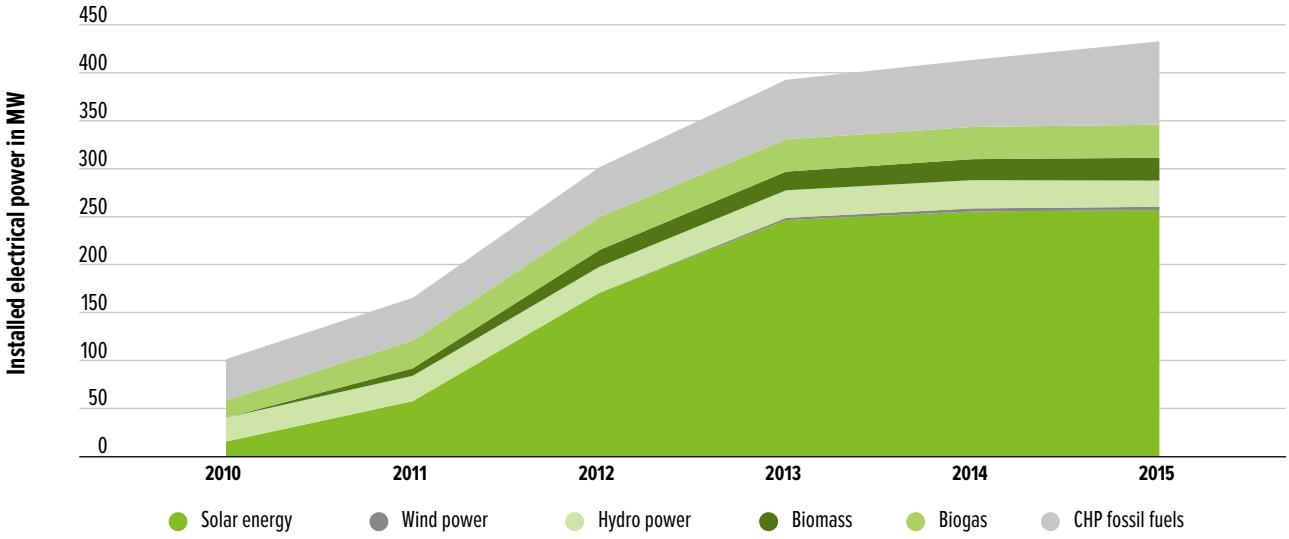
	2010	2011	2012	2013	2014	2015
Solar energy	381	975	2,406	3,218	3,319	3,339
Wind power	3	4	3	5	4	9
Hydro power	105	109	108	106	106	106
Biomass	0	3	5	10	19	43
Biogas	13	26	31	31	31	33
CHP fossil fuels	26	46	89	184	270	390
Total	**528**	**1,163**	**2,642**	**3,554**	**3,749**	**3,920**

Sources: Energy Agency, Borzen

The total nominal capacity of the facilities included in the support scheme at the end of 2015 increased to 433 MW. At the installed capacity solar power plants prevailed with 3339 production facilities with a total rated power output of 257 MW or 56% of the installed capacity included in the support scheme. The next group of production facilities are the high-efficiency cogeneration units using fossil fuels; at the end of 2015 390 such devices were included in the support scheme, with a total installed capacity of 87 MW or 20% of the total installed capacity of all plants included in the support scheme.

Already described intensity of the integration of electricity producers or their facilities is evident in the Figure 105, which shows an obvious increase in installed capacity of solar power plants in 2011 and 2012 and more significant investment activities than expected, when a possible termination of entry in the support scheme under the conditions that applied before the introduction of Energy Act was announced.

Figure 105: The total installed capacity of production facilities included in the support scheme in the period 2010–2015



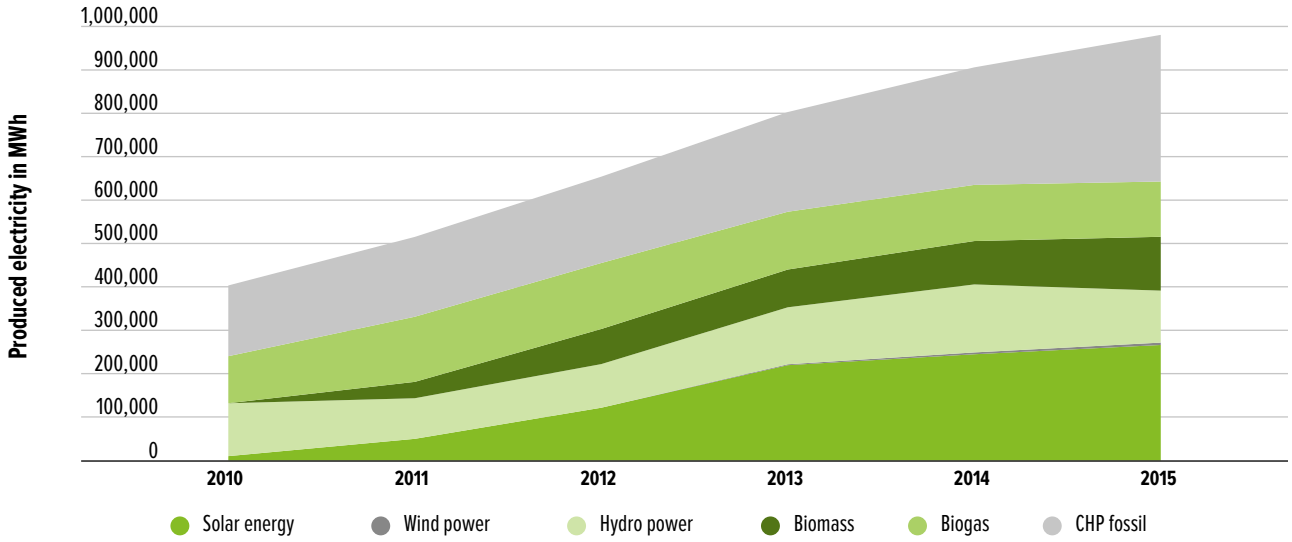
Sources: Energy Agency, Borzen

6.2.2 Electricity produced in the support scheme

Production facilities included in the support scheme in 2015 generated 980,8 GWh of electricity, for which the support was paid to the producers. Production in 2015 was by 8% higher than in 2014, and in comparison with 2010 more than doubled. In 2010, within the support scheme 403,2 GWh of electricity were produced. The installed capacity of the solar power plants still prevail in the support scheme, but in 2015 the cogeneration units, using fossil fuels with the total rated power output of 87 MW, generated 338 GWh, and solar power plants with the total installed rated power output of 257 generated 266 GWh.

All together in 2015 production facilities included in the support scheme generated 642 GWh or 66 of all energy for which the support was paid. 338 GWh of electricity or 34% of energy for which the support was paid was generated from fossil fuels in high-efficiency cogeneration.

Figure 106: Produced electricity for the period 2010–2015, for which electricity producers included in the support scheme received payment



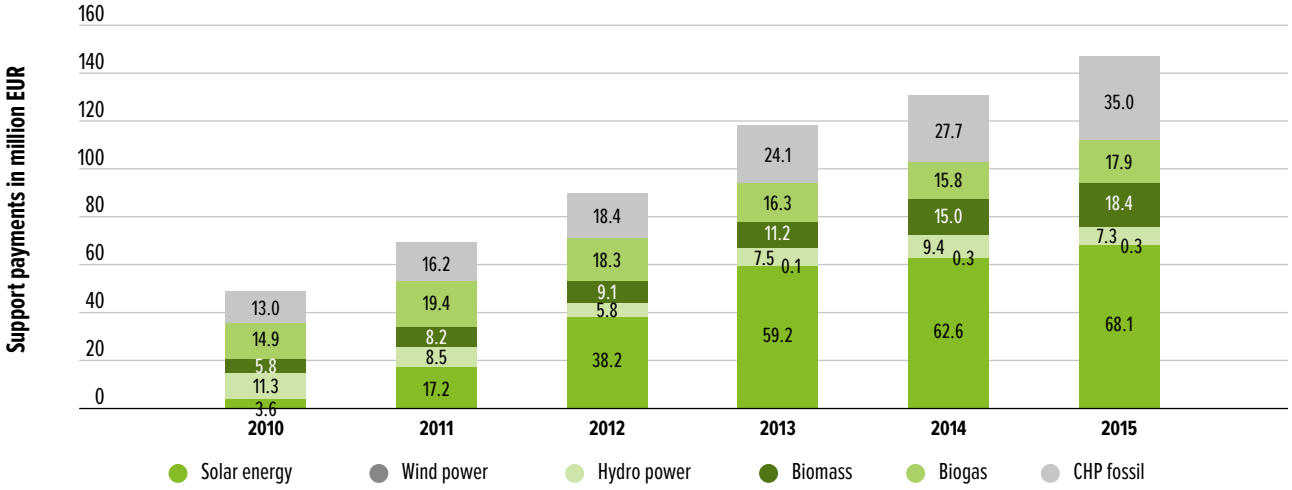
Sources: Energy Agency, Borzen

6.2.3 Support payments

In 2015, the electricity producers included in the support scheme received € 147.1 million for 980,8 GWh of produced electricity; in comparison with 2014 that was 12% or € 16.3 million more. In 2015, for the support scheme three times more funding was needed for the payments of support compared to 2010. It should be noted that in 2010 support payments also included production facilities of qualified producers in the total value of around € 11 million, which were eligible for the support by 2011, irrespective of the fact that they did not meet the criteria to enter the support scheme. Thus, the support payments in 2010 amounted to € 37.2 million.

The actual amount of support payments is slightly lower than payments to the producers themselves. The amount is lower on behalf of the sold electricity, which Centre for support takes over and buys from the producers included in the support scheme and then sells in the market. In that way, the actual costs of the support scheme in 2015 amounted to around € 140 million. The average support payment in 2015 was € 142.5.

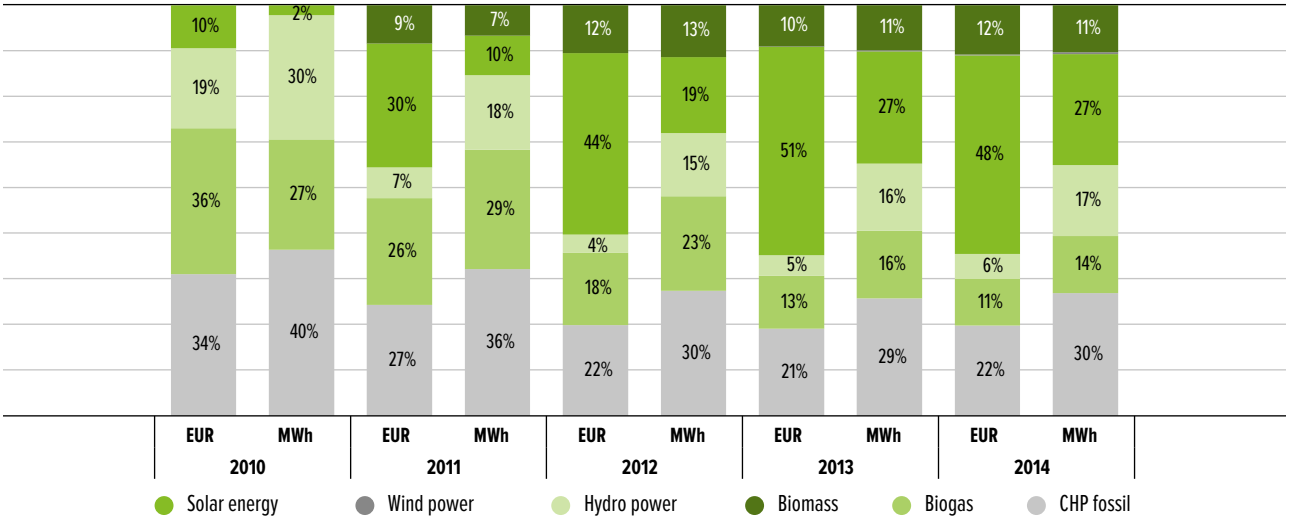
Figure 107: Support payments in the period 2010–2015



Source: Borzen

Figure 108 shows the ratio between the support payments by source and the volume of electricity production by source. The ratio between the paid support and the amount of power produced is in favour of production in hydro power plants, which means that for this production on average support payments are lower in comparison to other production included in the support scheme. The similar correlation can be seen between the production in wind-powered plants, but so far the share of this production has been of negligible degree. The less favourable is the ratio between the support payment and produced electricity in solar power plants (in addition to smaller production units using biomass); the support payment for a unit of produced electricity is on average the highest.

Figure 108: The ratio between the support payments by source and the volume of electricity production by source in the period 2010–2015

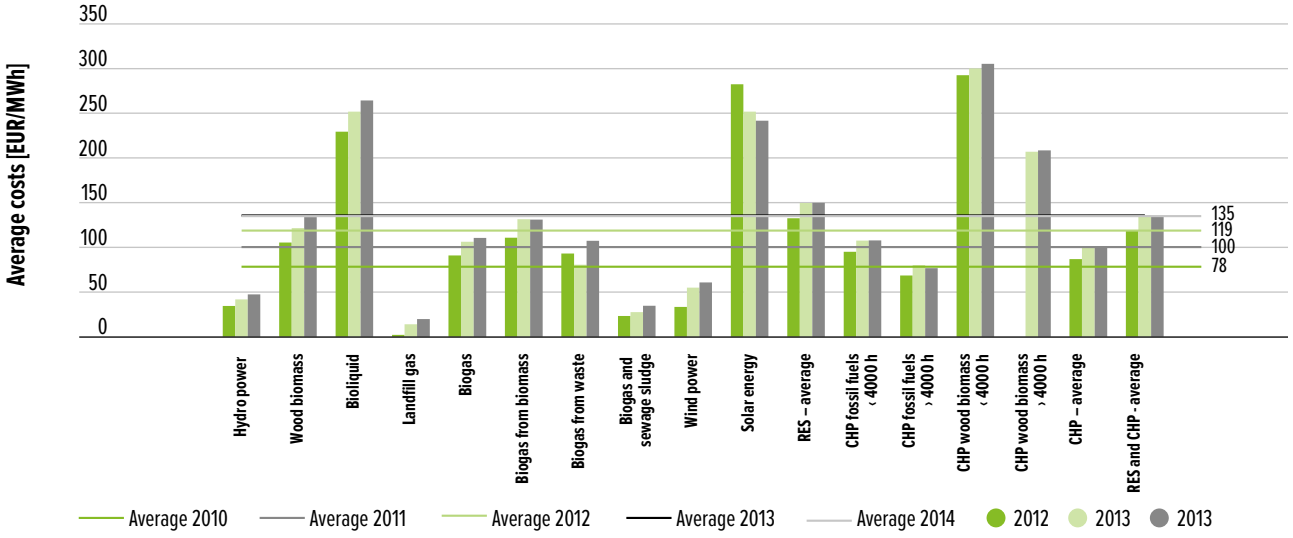


Sources: Energy Agency, Borzen

Figure 109 shows the average costs of the support payments for a unit of produced electricity by source. In 2010 the average support was 78 EUR/MWh, and these costs have been increasing: to 100 EUR/MWh in 2011, in 2012 to 119 EUR/MWh, in 2012 to 136 EUR/MWh and in 2014 it was 135 EUR/MWh. Higher costs for the production of electricity from cogeneration units are mainly due to higher prices of natural gas in the period 2010-2013, and also changes of the structure of support recipients in 2014. Namely, in the support scheme entered more micro-generating plants, which are characterized by higher reference production costs, and consequently higher support payments. The main reason for higher average support payment for the production from RES is the largest share of payments for solar power plants causing high reference production costs in the period 2009–2012. The similar high support causes the production from biomass, especially in micro-generating plants, but these devices are included in the support scheme to a negligible extent in comparison with solar power plants.

Solar plant technology is the only technology in the support scheme for which the reference costs and consequently the supports were decreasing from 2011. For other sources, average support payments were decreasing because of different support recipients (larger generating plants were entering the support scheme) and because of changes in reference prices of energy products and electricity.

Figure 109: Average costs of support payments in the new scheme per unit of production by energy source



Sources: Energy Agency, Borzen

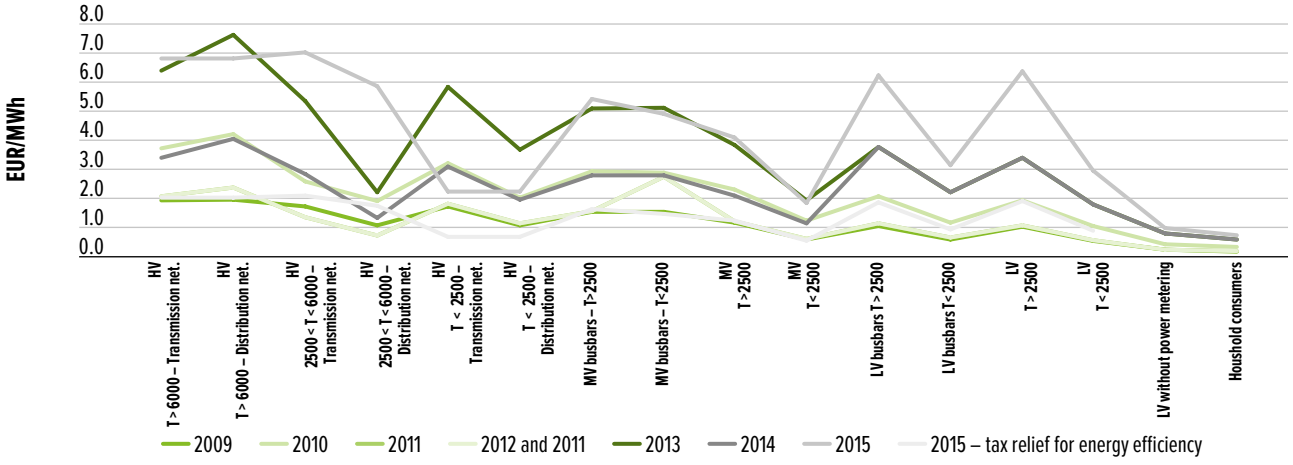
6.2.4 The costs of the support scheme and financial contribution of end consumer for the provision of support

Financing of electricity production from RES and CHP is provided by collecting funds through the contributions for RES and CHP paid by all final consumers in Slovenia since 2009. From June 2014, this contribution is paid also by consumers of solid and liquid fuels, natural gas, liquefied petroleum gas, and users of district heating.

In August 2015, the contribution decreased for final energy-intensive industries, which meet the requirements under Article 6 of Regulation on the method of determining and calculating the contribution for ensuring support for the production of electricity from high-efficiency cogeneration and renewable energy sources.

The contribution is constantly adapting in order to provide sufficient financial resources for funding the support scheme. It has to be noted that final electricity consumers pay much more than final consumers or buyers of other energy products.

Figure 110: Changes of contributions by the individual consumer groups of end-users of electricity in the period 2010–2015



Sources: Energy Agency, Borzen

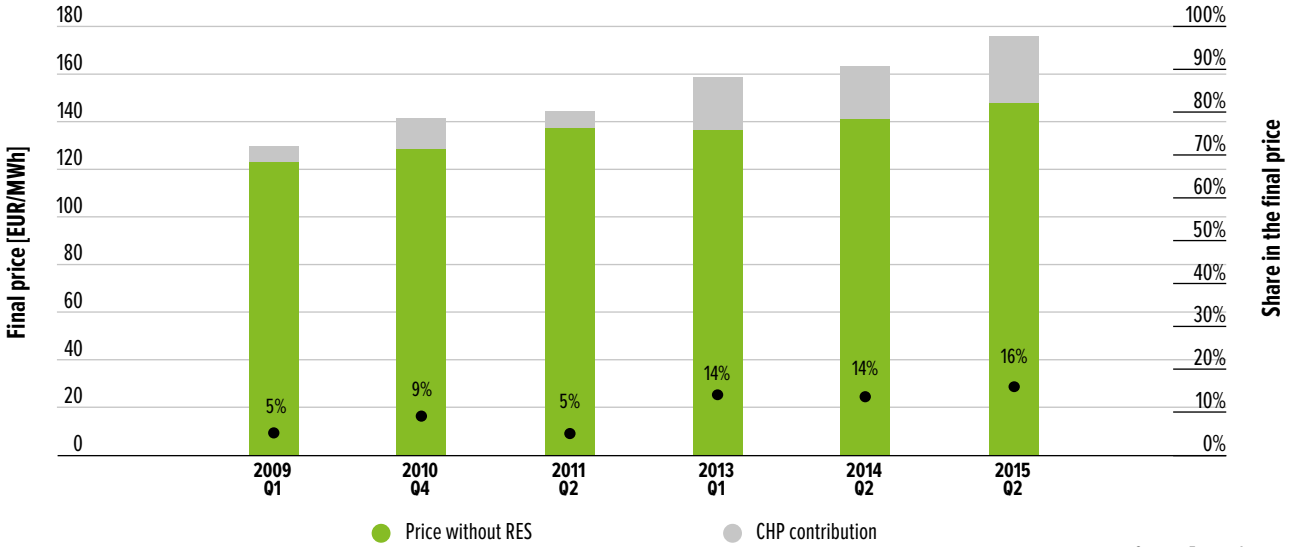
Table 39: Charges on fossil fuels, implemented in 2014

Energy source	Sales unit	Charge in euros per sales unit
Natural gas	Sm^3	0.00938
Extra light fuel oil	l	0.00990
Fuel oil	kg	0.01092
Petroleum	l	0.00911
Diesel	l	0.00990
Aviation fuel	l	0.00911
Kerosene	l	0.00913
Liquefied petroleum gas - autogas	kg	0.01267
LPG for households	kg	0.01267
District heating	MWh	0.99045

Source: Energy Agency

Financial burden imposed on final consumers of electricity mainly depends on the consumer group and capacity charge at delivery point. With the latest amendment to the contribution paid by final electricity consumers in 2015 the share of contribution in overall costs of electricity for typical electricity consumer increased by 16%.

Figure 111: Financial burden imposed on typical household consumer with contributions for providing supports in the period 2009–2015 with a focus on changes in the amount of contribution



Source: Energy Agency

All changes in contributions for providing supports are published by the Energy Agency in a general act after obtaining the government consent.

6.3 Final energy savings achieved with contributions from suppliers

6.3.1 Energy efficiency obligation scheme in Slovenia

Directive 2012/27/EU on energy efficiency (hereinafter directive) requires from the Member States to set up their energy efficiency obligation scheme, to determine the participants obliged to achieve mandatory energy savings within the system, and under the directive's guidelines set the amount of energy savings by 2020. In accordance with Article 7 of the directive, the target savings in the energy efficiency obligation scheme in the period from 1 January 2014 to 31 December 2020 have to be at least equivalent to achieving new savings each year from 1 January 2014 to 31 December 2020 of 1,5% of the annual energy sales to final consumers of all energy distributors or all retail energy sales companies by volume, averaged over the most recent three-year period prior to 1 January 2013; the sales of energy, by volume, used in transport may be partially or fully excluded from this calculation. The basis for the calculations of the target energy savings by the distributors on the Slovenian level is an average final consumption of energy over the period from 2010 to 2013, which is, in accordance with the third paragraph of Article 7 of the directive, reduced by 25%. The target energy savings in Slovenia in 2020 will be 3319 GWh, and the cumulative savings during the period 2014–2020 will be 11,596 GWh (NREAP 2014–2020, 2015).

Slovenia will meet this target by using combined alternative policy measures, which means that half of the mandatory energy savings will be achieved by energy suppliers, and the other will be achieved by ECO-Fund through contributions for the efficient use of energy paid by the final consumer. Energy efficiency obligation scheme and Eco-Fund will have to achieve the 1.5% of energy savings on annual level while obligatory parties will gradually attain their half of the targeted savings:

- in 2015, which was the transitional period, 0.25% of sold energy in 2014;
- in years 2016 and 2017, 0.50% of sold energy in the previous year;
- in the period 2018–2020 it is necessary to achieve the overall energy savings, namely 0.75% in comparison to the sold energy in the previous calendar year.

6.3.2 Obligated parties to achieve energy savings

Obligated parties to achieve energy savings are suppliers of electricity, gas, heat, solid and liquid fuels to the final consumers, who purchases energy for own end use. Obligated parties have to report to the Energy Agency annually on the achievement of energy savings.

In accordance with the broad definition of obligated parties, it was difficult to identify all energy suppliers to final Consumers since a single record of energy suppliers does not exist. The Energy Agency, therefore, used different records owned by public services to determine obligated parties to achieve energy savings.

For 2015, the report on energy savings was sent by 183 obligated parties. Among them, 21 sent a blank form, since they started to supply the energy in 2015 and were excluded from the obligation to achieve energy savings.

On the basis of the submitted reports, 93 obligated parties achieved energy savings, seven partially, and 62 obligated parties did not achieve energy savings. Most of them were not aware of their obligation, or they did not find a way to achieve energy savings as a result of poor information.

6.3.3 Role of the Energy Agency

Directive on energy efficiency in paragraph six and eight of Article 7 states that measurement and control of energy savings by obligated parties are conducted independently of the obligated parties. This task was given to the Energy Agency, which is committed to monitor and control achieved energy savings within the energy efficiency obligation scheme. By 30 April of the current year, the Energy Agency has to publish energy savings of the obligated parties in the previous year. Energy savings were in 2015 published on the website of the Energy Agency.

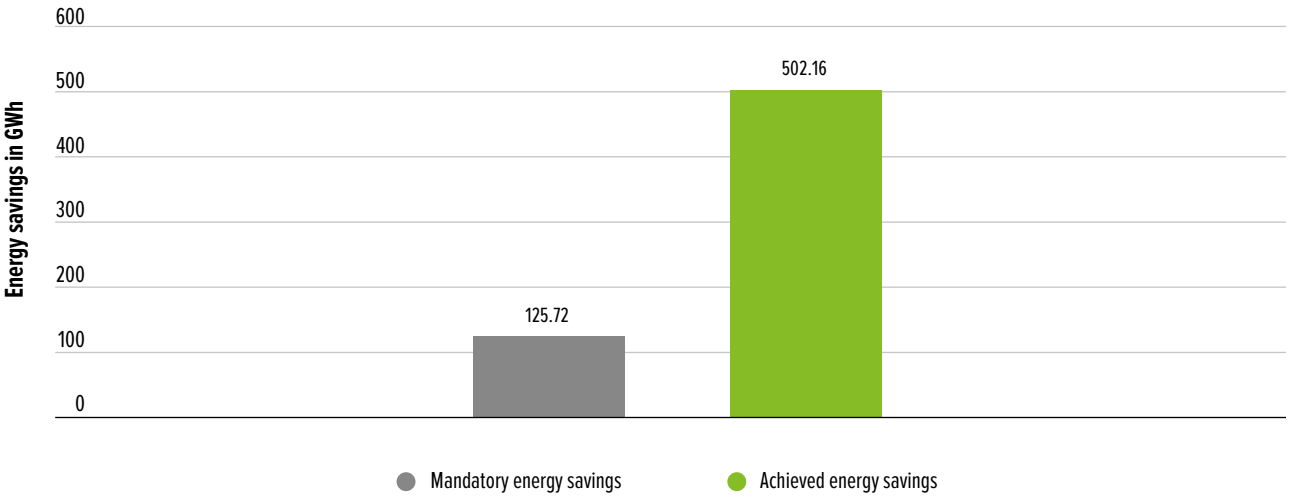
6.3.4 Final energy savings

6.3.4.1 Final energy savings by the obligated parties

The obligation is precisely determined in the regulation. In 2015, obligated parties had to achieve the savings equal to 0.25% of sold energy in 2014. According to the collected data from obligated parties, the sum of sold energy in 2014 was equal to 50,286.97 GWh and the target savings amounted to 125.72 GWh.

In 2015, 162 obligated parties in total reached 502.16 GWh of energy savings, which exceeds the mandatory energy savings by 376.44 GWh, as shown in Figure 112.

Figure 112: Comparison between the mandatory energy savings and achieved energy savings of obligated parties in GWh in 2015



Source: Energy Agency

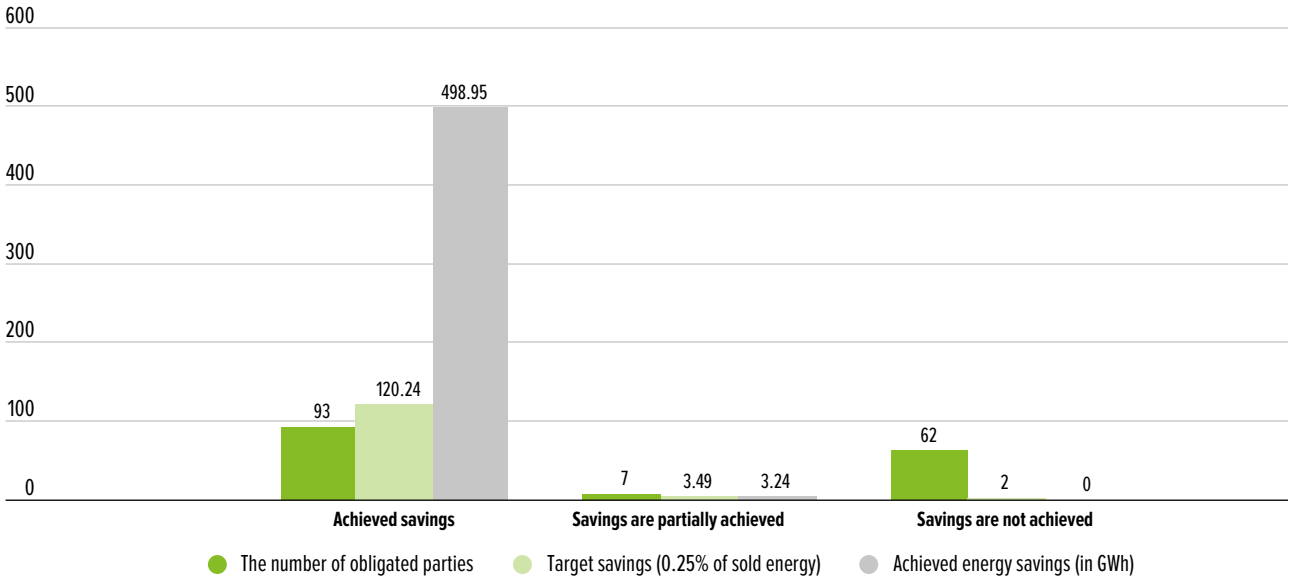
6.3.4.2 Activities of obligated parties in reaching energy savings

Figure 113 shows the comparison between the number of obligated parties that implemented or did not implement energy savings and their energy savings targets, and energy savings that were achieved or not. The analysis showed that 93 obligated parties fully achieved their energy savings. Among them, 11 chose alternative measures. By April 2015, they had to inform Eco-Fund that they will not implement measures to achieve energy savings by themselves. During the year, four of them decided to implement these measures. 63 obligated parties did not achieve energy savings by implementing measures, and seven of them implemented the measures but did not achieve the targeted energy savings.

If we compare the activities of obligated parties in achieving energy savings and energy savings we can conclude that obligated parties, which did not implement the measures, had to reach only 2 GWh of the mandatory savings, which in the sum of overall targeted savings represent only 1.6% of the savings, which is negligible value. The obligated parties that achieved the savings exceeded these savings by 378.71 GWh.

Among the energy suppliers that did not achieve energy savings dominate the suppliers of solid fuels. During the reporting the Energy Agency realized that the vast majority of these suppliers were not informed that they are obligated parties to achieve energy savings. Also, among them are many traders, who did not understand the requirements of energy efficiency policy; they did not implement the measures, because they did not even know how to achieve them or it would be difficult for them to achieve the savings by themselves. At this point it has to be noted that among obligated partied predominately achieved energy savings through mutual cooperation between the obligated parties on the basis of a contract, whereby an achieved saving can be taken into account only once.

Figure 113: Activities of the obligated parties in achieving the mandatory energy savings



Source: Energy Agency

6.3.4.3 The achieved energy savings by implementing measures

Obligated parties achieved their target savings with the implementation of the measures set in Articles 5 and 6 of the Regulation. There are 39 measures listed in these articles, which can be implemented at final consumers in public, service and industrial sector, and three additional with which energy savings can be achieved in the transformation, distribution, and transmission of energy. Savings can be achieved with measures not listed in the Regulation, but in this case, an energy audit must be carried out, and only after that energy savings can be enforced. Savings of the prescribed measures are determined by using calculating methods published in the Regulation. In the report, only the savings of measures achieved in 2015 were taken into account.

As shown in Table 40, the obligated parties were achieving the energy savings by using most of the measures available. The most of energy savings were achieved by measures called "other measures to increase energy efficiency in transport" where suppliers of liquid fuels achieved energy savings by adding fuel additives. A lot of savings were also achieved by implementing the following measures: the installation of cogeneration, the implementation of energy management system, optimization of technological processes, which is based on implemented energy audit, and a general overhaul of the heating station. None of the obligated parties carried out a measure that is not prescribed, and would after an energy audit try to enforce energy savings.

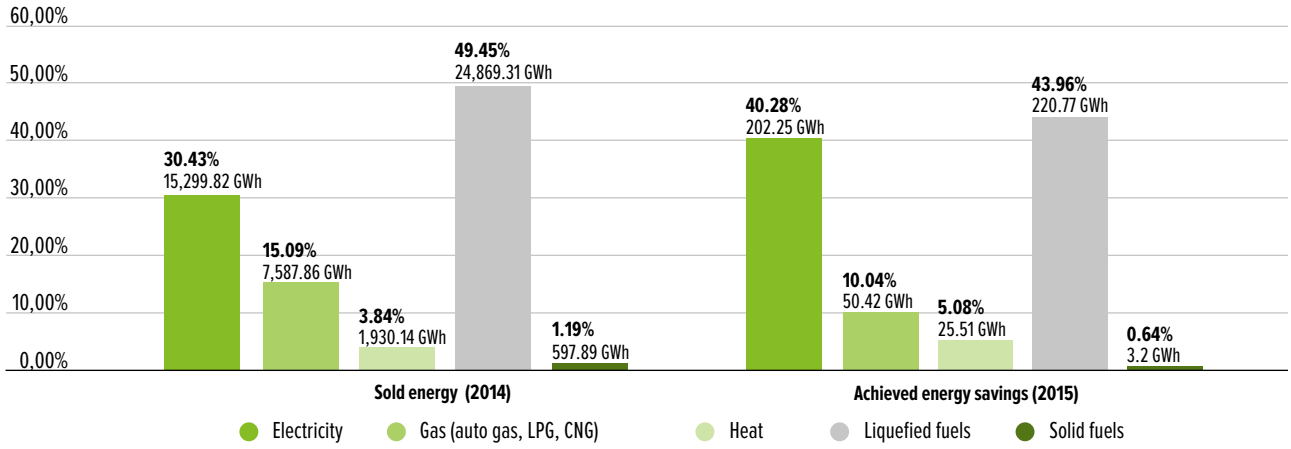
Table 40: Energy savings by measures in 2015

	Measure	Energy savings in MWh
	Energy efficiency measures and increased use of RES in heat production in public and service sectors and industry	
1	Comprehensive renovation of buildings	2.50
2	Renovation of individual elements of the building envelope or entire building envelope	1,005.78
3	Installation of solar collectors, heat pumps or other units for electricity production from RES	2,495.19
4	Installation of energy-efficient lighting systems in buildings	8,218.72
5	Energy-efficient outdoor lighting system	69.70
6	Energy-efficient household appliances	126.30
7	Installation of energy-efficient electric motors	210.86
8	Installation of frequency converters	1,117.27
9	Raising the efficiency for the preparation of compressed air	281.47
10	Installation of the high-efficiency cogeneration	37,445.41
11	Replacement of electric boilers with wood biomass boilers	10.23
12	Replacement of electric boilers with new gas boilers	0.00
13	Replacement of boilers with high-efficiency boilers using wood biomass	1,498.14
14	Replacement of boilers with high-efficiency boilers using gas	2,618.46
15	Installation of the system for heat recovery	7,327.90
16	Installation of equipment for the operational monitoring and management of energy at consumer's location	21,273.01
17	Installation of advanced metering systems	12,064.22
18	Implementation of energy management system	98,343.04
19	Optimization of technological processes, which is based on implemented energy audit	15,270.34
	Energy efficiency measures in one-, two- and multi-dwelling buildings	
20	Installation of solar collectors	3.00
21	Installation of heat pumps	227.39
22	Upgrading heating systems in multi-apartment buildings, including heat stations, which includes installation of thermostat valves and hydraulic balancing of heating system	0.00
23	Optimization of the heating system in multi-apartment buildings	0.80
24	Installation of the high-efficiency cogeneration	216.08
25	Replacement of electric boilers with new gas boilers	0.00
26	Replacement of electric boilers with wood biomass boilers	2,826.55
27	Replacement of boilers with high-efficiency boilers using gas	5,340.80
28	Replacement of boilers with high-efficiency boilers using wood biomass	72.14
29	Installation of energy-efficient lighting systems	6,276.08
30	Energy-efficient household appliances	40.90
31	Installation of advanced metering systems	52.78
32	Introduction of advanced metering and billing	554.50
	Energy efficiency measures in transport	
33	Purchase of electric vehicles	10.71
34	Purchase of energy-efficient tires	284.21
35	Other measures to increase energy efficiency in the transport sector	195,517.59
	Measures to increase energy efficiency of district heating systems	
36	Comprehensive renovation of heat station	1,191.99
37	Reduction of losses in heat distribution systems	1,635.89
38	Connecting buildings to the district heating system	2,248.46
	Other sectors	
39	Comprehensive renovation of heat station	70.852,86
40	Improving the efficiency of the district heating system	3.923,54
41	Installation of the facilities for production of heat for district heating to achieve the criteria for energy–efficient district heating systems	1.509,07

Source: Energy Agency

6.3.4.4 Energy savings by energy source

Figure 114: Comparison of the shares of sold energy and shares of achieved savings by energy source



Source: Energy Agency

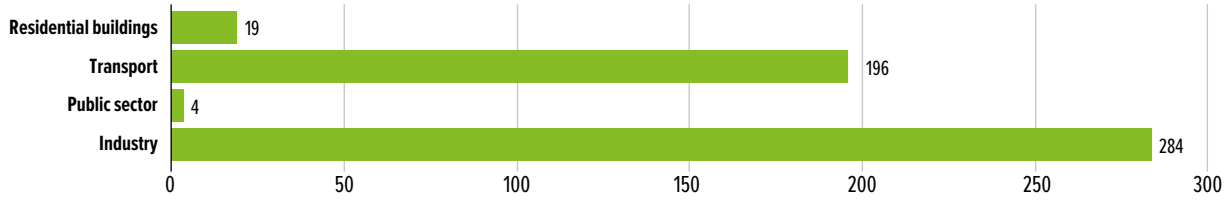
The analysis of data on energy sold and achieved end-use energy savings, presented in Figure 114, shows that the largest share of energy sold the suppliers of electricity and liquid fuels, and consequently achieved the highest share of energy savings. Together they achieved 84.21% of all energy savings, while it should be noted that the largest share was achieved by the suppliers of liquid fuels, who most of the savings reached by adding fuel additives. The suppliers of solid fuels sold the lowest share of energy and achieved only 0.64% of energy savings.

6.3.4.5 Energy savings by sector

In the analysis of energy savings by sectors we followed the names of the sectors in the Article 5 of the Regulation, whereby the achieved savings from the group of energy savings in the district heating system and primary energy savings from the sector of transformation, distribution and transmission of energy allocated to industry, public sector and residential buildings.

In that way, we determined four sectors: industry, public sector, transport, and residential buildings, where the obligated parties registered data if the savings were achieved at households.

Figure 115: Achieved energy savings by sector in 2015

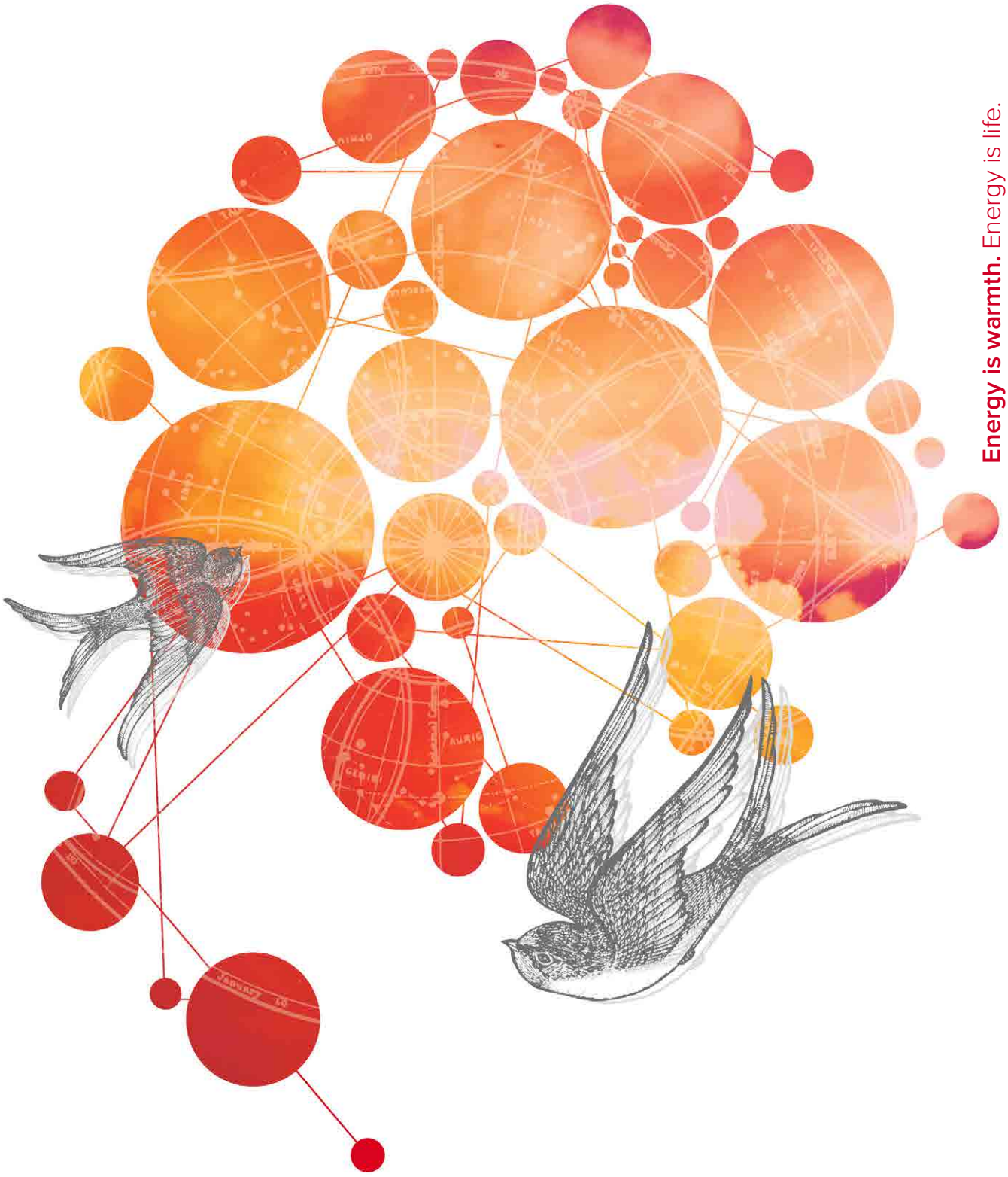


Source: Energy Agency

The analysis of the data from the reports presented in Figure 115 shows that the obligated parties with the measures carried out achieved the highest energy savings in industry and transports, a total of 480 GWh. The lowest savings were achieved in the public sector, only 4 GWh. High energy savings in transport are the consequence of adding fuel additives; the measure was used mainly by traders of liquid fuels. In industry, savings were achieved with different measures; the largest savings were achieved with the measures from the group of savings from heat production.

The first year of implementation of the revised energy efficiency obligation scheme was successful, since the obligated parties exceeded the mandatory energy savings, although the costs of the implementation of the scheme have been transferred to the suppliers themselves, who can use several different tools to achieve the energy savings.

7. Heat supply



Energy is warmth. Energy is life.

Supply of heat or other energy gases from isolated distribution systems (hereinafter: distribution system) is in Slovenia carried out as an optional local service of general economic interest, or under certain legal requirements as a commercial distribution of supply of final consumers. Heat supply means the distribution and supply of heat or cold used for heating or cooling, industrial processes, and sanitary hot water.

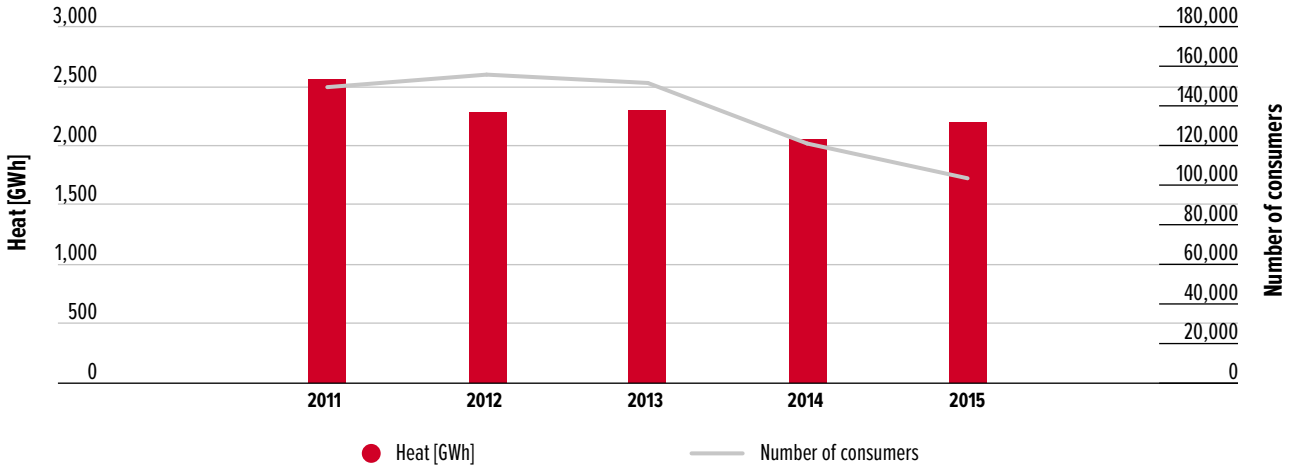
The report on heat supply from distribution systems includes aggregated data so far recorded distribution systems and the data of a recorded heat producers that supply heat to these systems.

7.1 Heat distribution

In Slovenia in 2015 heat distribution was carried out by 53 distributors in 58 municipalities from 91 distribution systems.

The heat distributors in 2015 supplied 103,459 consumers; they were delivered 1839.5 GWh of heat. Heat consumption from all distribution systems was higher by 11.93% in comparison with the previous year. The number of consumers connected to the distribution systems of district heating compared to 2014 decreased by 14.35%. The main reason was consumers decision to use currently cheaper sources of heat.

Figure 116: Heat consumption and the number of heat consumers in the period 2011–2015



Source: Energy Agency

In Slovenia, only two large distribution systems exist, with a total installed capacity of 3.88 MW of cooling units. The cooling distribution system with a total installed capacity of 0.965 MW, which uses heat from district heating, operates in the Municipality of Velenje, and the cooling distribution system with the installed capacity of electrical generators 2 X 1.45 MW in a former industrial complex of the company Iskra Labor in the Municipality of Kranj.

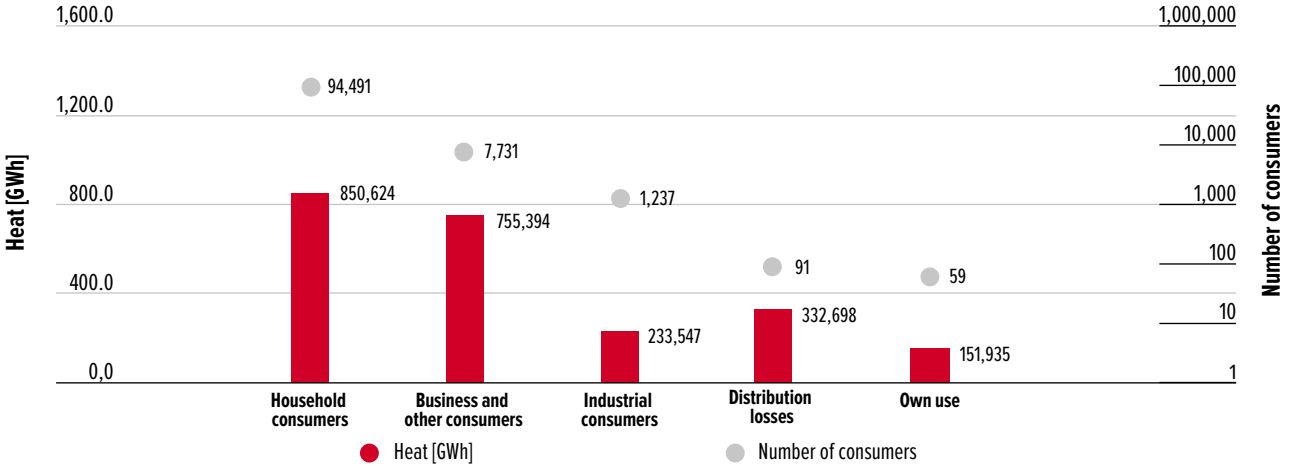
For heat supply, producers of heat with their own production and heat producers that supply heat to distribution systems in 2015 generated 2324.2 GWh of heat and 718 GWh of electricity, or 640 GWh at the busbars of the cogeneration processes for heat supply. The share of heat generated to supply distribution systems from cogeneration accounted to 83.8% of all generated heat.

The largest share of useful heat, 36.6% was used for 94.491 household consumers; 32.5% for the supply to 7731 business consumers, and 10% of heat for 1237 industrial consumers.

Losses in the district heating networks are estimated to 16.1% of heat delivered to the distribution network and are by 2.9% lower compared to 2014. The difference between the produced and supplied heat and heat losses presents the share of heat, which was used in industrial processes of producers or suppliers.

A diagram in Figure 117 shows the heat consumption by the type of consumers and the number of consumers.

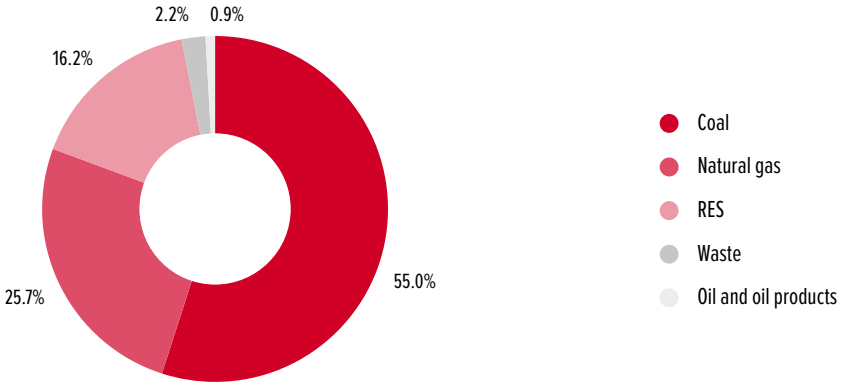
Figure 117: Heat consumption by the type of consumers and numbers of consumers



Source: Energy Agency

In the structure of primary energy sources used for the production of heat, coal still prevailed covering 55%, followed by natural gas with 25.7%. Renewable sources covered 16.2%; 2.2% of heat was produced in the municipal waste-incineration plant (Celje Heating Plant); oil and oil products had 0.9 percent share.

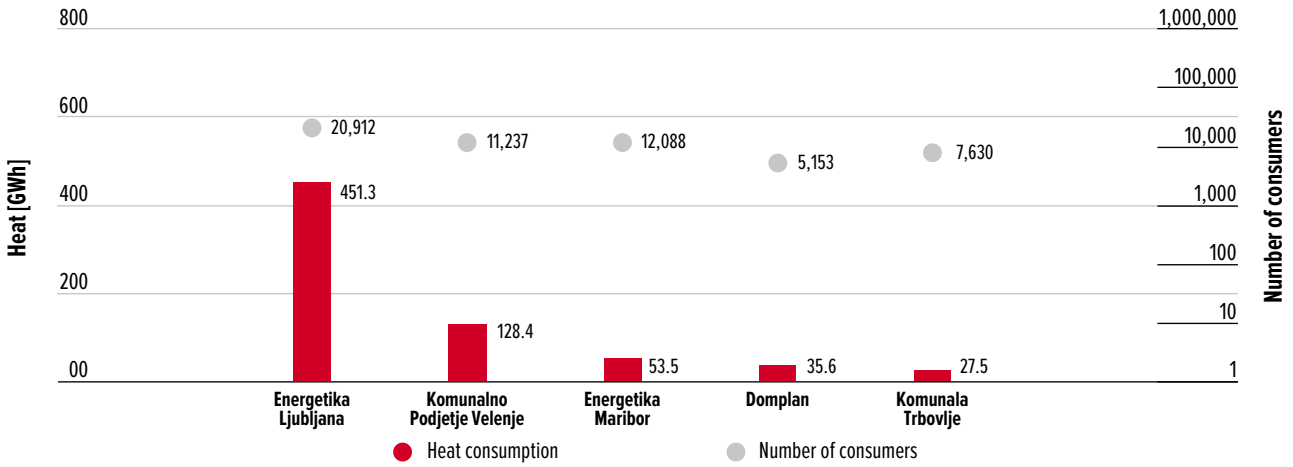
Figure 118: Structure of the primary energy sources for heat generation



Source: Energy Agency

First five largest heat distributors in 2015 supplied 55% of all household consumers and delivered them 81.9% of the required heat. The diagram in Figure 119 shows distributed heat to household consumers and number of consumers supplied by the five largest suppliers.

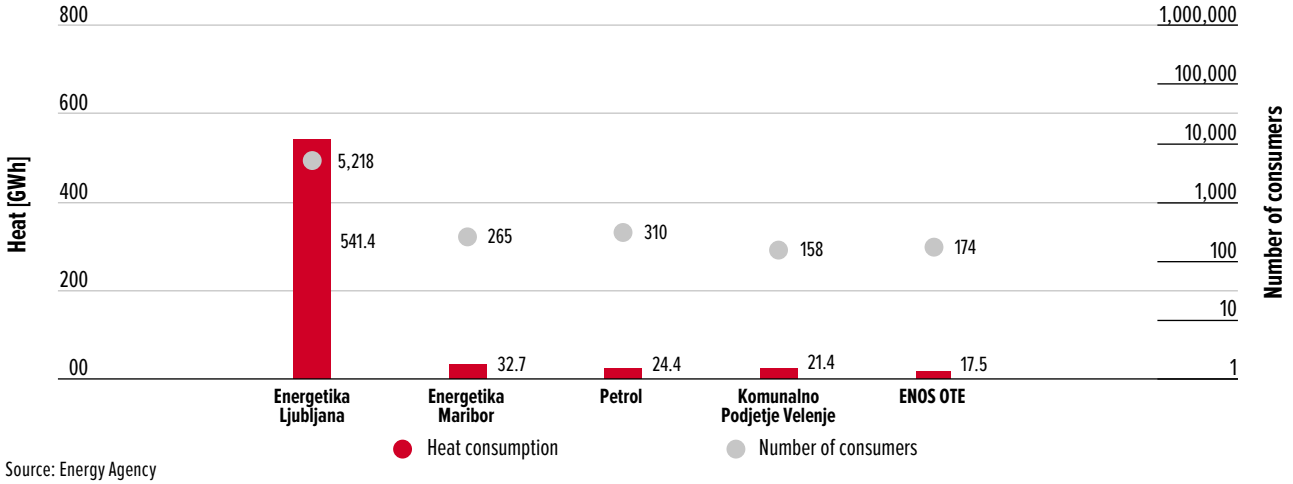
Figure 119: The largest distributors of heat by the amount distributed to household consumers in 2015



Source: Energy Agency

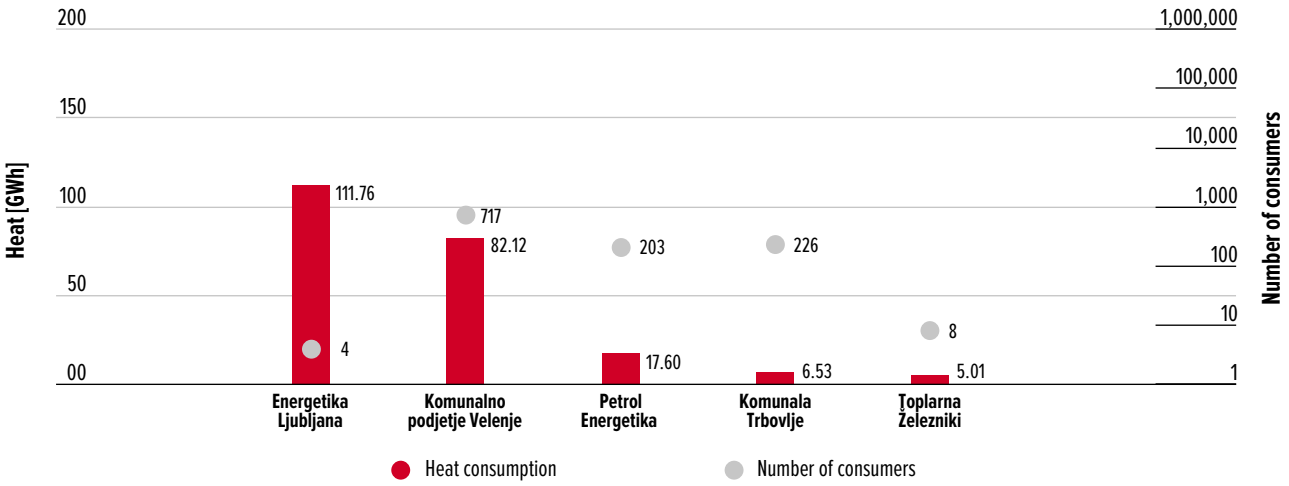
The first five largest distributors of heat supplied 93.6% of all industrial consumers for industrial processes and heating, and delivered them 95.5% of the required heat (Figure 121).

Figure 120: The largest distributors of heat to business and other consumers in 2015



Source: Energy Agency

Figure 121: The largest distributors of heat to industrial consumers in 2015



Source: Energy Agency

7.2 Heat distribution systems

In 2015, the service of heat distribution was carried out by 91 distribution sytems, set in 58 out of 212 Slovenian municipalities; their total length was 912.5 kilometres. The activity of heat distribution was in 35 cases carried out as an optional local service of general economic interest in 46 Slovenian municipalities; in 20 the activity was carried out as commercial distribution, and in two as the supply from private distribution system. These last two are among the largest systems for supply of household consumers since they supply 6250 consumers, of which 6136 are households.

The distribution systems, where the activity was carried out as an optional local service of general economic interest, supplied 91.7% of all consumers of heat. The share of delivered heat by these systems was 93,7% of all distributed heat.

Two largest systems of district cooling are in Velenje and Kranj in the total length of 1.46 km.

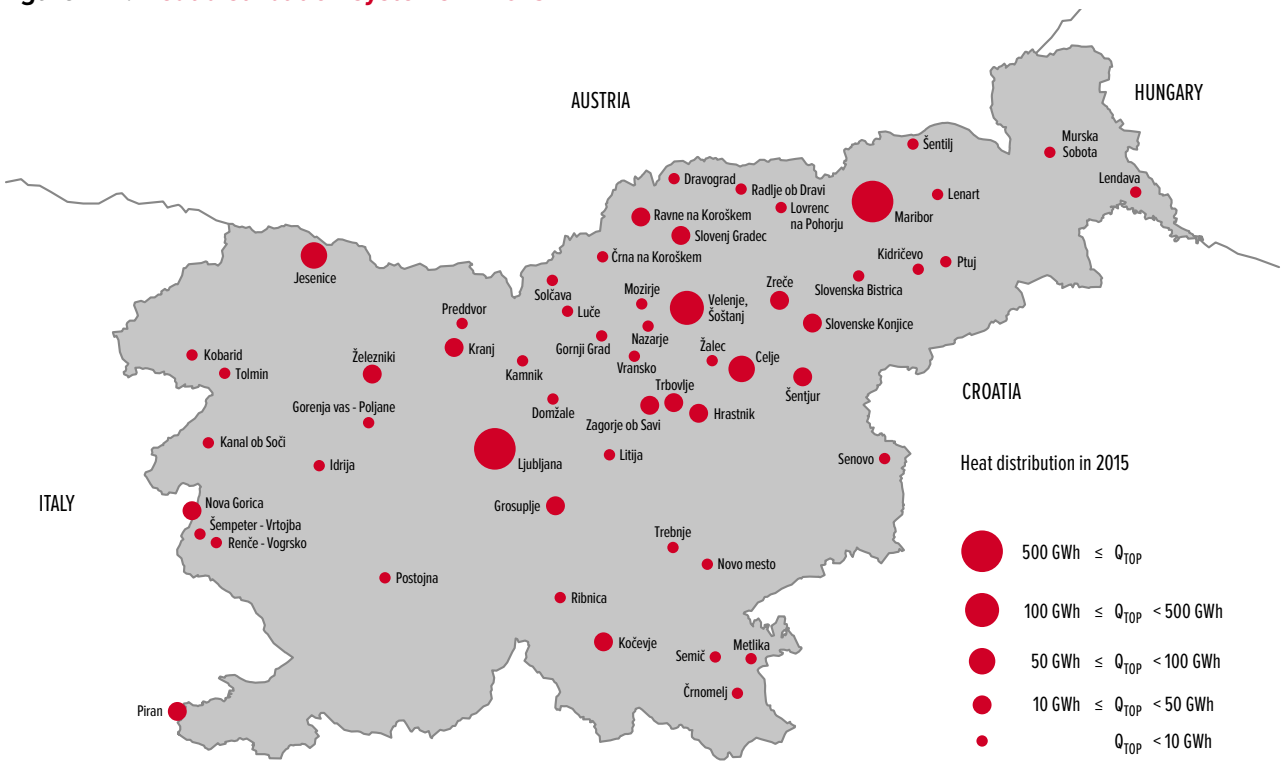
Figure 122 shows the dispersion of distribution systems and the amount of distributed heat by individual municipalities.

With respect to the temperature regime of the operations of individual system, the systems are the warm-water systems, hot-water systems and steam distribution systems. Warm-water networks and hot-water networks cover 97.5%, steam networks 2.3 and cooling networks 0.2% of the total distribution systems.

Two longest systems are in Ljubljana (263.4 kilometres of hot-water system), and in Velenje, together with Šoštanj, (171.6 kilometres of warm-water system).

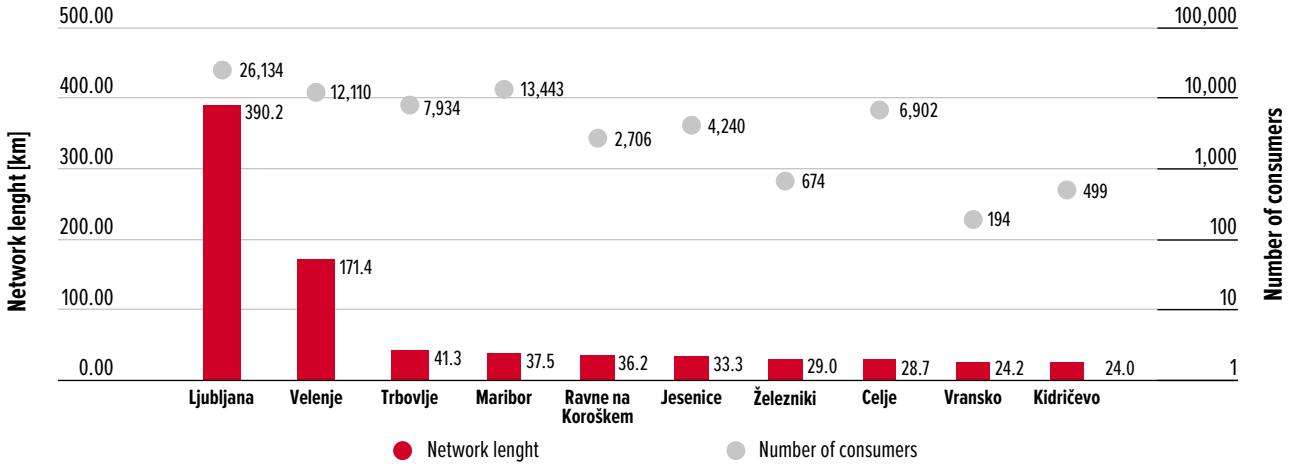
Figure 123 shows the lengths of the 10 largest heat distribution systems and the numbers of connected users.

Figure 122: Heat distribution systems in 2015



Source: Energy Agency

Figure 123: Length of heat distribution systems by municipality, and numbers of connected users in 2015



Source: Energy Agency

7.3 District heating price

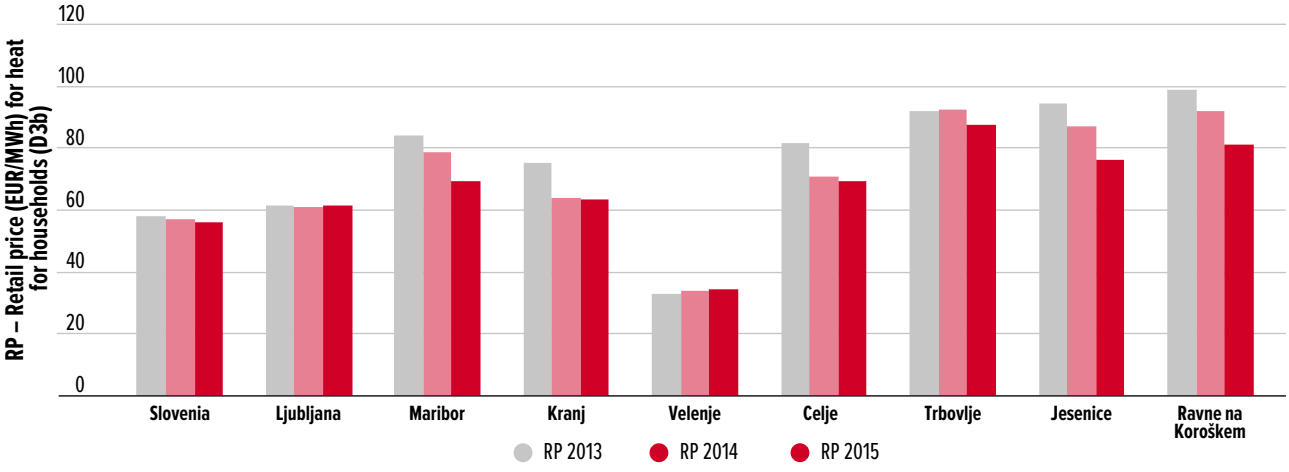
From the price lists of the selected business entities for heat production and supply the data on average retail prices of heat from district heating distribution networks are summarized; the data are valid for standard customer group - households – D3b in selected Slovenian municipalities, in which the distributed heat in 2015 represented 36.6% of the total distributed heat from the distribution systems.

The standard customer group is a group with a connected load of 10 kW and an annual consumption of 34.9 MWh, using heat for hot water and central heating.

The average retail prices for heat from the distribution systems relating to selected Slovenian municipalities are shown in Figure 124. Prices displayed are calculated as the weighted average retail prices in comparison with the number of consumers; at the same time the average retail price of heat from the distribution systems for the entire territory of Slovenia is presented. The graph shows that the prices of heat for household consumers compared to 2014 on average lowered by 1.5%, retail prices' increase affected only consumers in Velenje and Šoštanj, by 1.5%, and in Ljubljana by 0.7%.

In recent years, prices of heat have been decreasing at those distribution systems, which use natural gas as an energy source, while price reduction was not noticed for heat production based on coal.

Figure 124: Trends in the average retail prices of heat including all taxes and charges for household consumers in individual Slovenian municipalities for the period 2013–2015



Source: Statistical office of the Republic of Slovenia

7.4 Regulation of the price of heat for district heating

The Energy Agency has to regulate the price of heat for district heating since the new Energy Act came into force; so far the price regulation was regulated by the Ministry of Economic Development and Technology in accordance with the Price Control Act.

With the implementation of the general act on the methodology for district heating pricing in 2015, the Energy Agency established a new legal framework for formation of starting price of heat for district heating by the distributors performing an optional local service of economic interest, and price of heat charged by regulated heat distributor. Under the adopted legislation persons liable for regulation with starting prices confirmed by the Ministry of Economic Development and Technology by the end of the year sent to the Energy Agency a request for consent to the new starting price. The Energy Agency received 58 such requests, 47 of them were from the distributors with their own generation, three request sent distributors and eight requests were sent by the regulated heat producers.

Consents to the starting price of all regulated distributors have to be issued by the end of June 2016. Approved prices will come into force on 1 July 2016.

7.5 Unbundling

Distributors that provide services of general economic interest and, in addition to carrying out the activity of distribution, also carry out other activities, must keep separate accounting records in accordance with accounting standards; their accounting records shall show separate accounts for heat distribution, heat production and other activities as required if the activities in question are carried out by separate undertakings.

The heat distributors must in their internal acts set the criteria for the allocation of assets and liabilities, costs, expenditure and revenue to be observed in keeping separate accounting records and preparation of separate accounting records, and fully disclose them in explanatory notes to the financial statements. The suitability of the criteria and their proper use must be audited annually by an auditor, who must draw up a special report.

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List of abbreviations and acronyms

ACER	European Agency for the Cooperation of Energy Regulators
AREDOP	Active regulation of energy activities and networks of the future
B2B	Business to Business
B2C	Business to Consumer
Borzen	Borzen, d.o.o. – Power market operator
BSP	BSP Regional Energy Exchange
C+ and C-	Main energy imbalance prices
CBTC	Cross-Border Transmission Capacity
CEE	Central-East Europe (electricity region)
CEER	Council of European Energy Regulators
CEREMP	Centralised European Registry for Energy Market Participants
CHP	Combined Heat and Power
CIM	Common Information Model (IEC 61970-3XX)
CPI	Consumer Price Index
CSE	Central-South Europe (electricity region)
CWE	Central-West Europe (electricity region)
CSLOeX	Hourly Index
DSM	Demand Side Management
DSO	Distribution System Operator
DTS	Distribution-Transformer Station
EA-1	Energy Act-1 – the Official Gazette of the RS, No 17/14
ebIX	European Forum for Energy Business Information eXchange
EEX	European Energy Exchange AG, Leipzig
EIC	Energy Identification Code
EXAA	Energy Exchange Austria
GDP	Gross Domestic Product
GME	Italian Power Exchange – Gestore Mercati Energetici
GPP	Gas Power Plant
GS1	Global language of Business (http://www.gs1.org)
HHP	Hydroelectric Power Plant
HHI	Herfindahl-Hirschman index
HV	High Voltage
HUPX	Hungarian Power Exchange
INC	Imbalance Netting Cooperation
LV	Low Voltage
MRS	Metering-Regulation Station
MV	Medium Voltage
RES	Renewable Energy Sources
RF	Regulatory Framework
RRM	Registered Reporting Mechanism
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SEE	South-East Europe (electricity region)
SLOeX	Organised electricity market index
SURS	Statistical Office of the Republic of Slovenia
TPP	Thermoelectric Power Plant
TSO	Transmission System Operator
VAT	Value Added Tax

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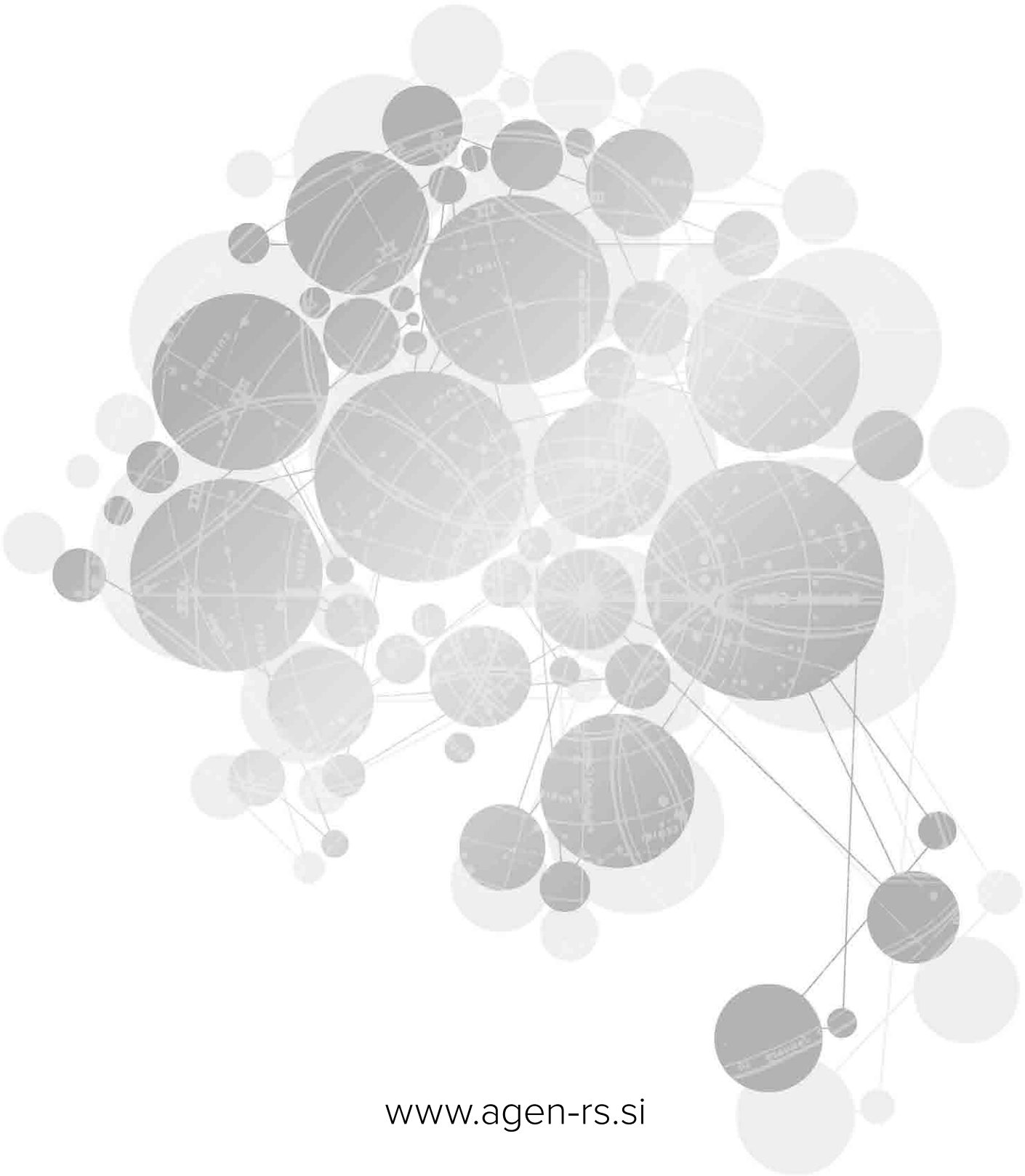

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