

INTRODUCTION

Our company, the Joint Stock Company (hereinafter JSC) "RĪGAS SILTUMS", started its operation on the 1st of May 1996. Today, its shareholders are Riga City Council, the State of Latvia, the JSC "Energijas risinājumi.RIX" and JSC "LATVENERGO". JSC "RĪGAS SILTUMS" is the major supplier of heat in Riga, almost 70% of heating. Gas is used as the main fuel source, however, as a result of modernisation and new technology's, the use of local renewable resource like wood chips as an alternative fuel has been continuously increasing. Long term aims to reduce CO2 and fossil fuels have led to significant changes in a number of heat sources in Riga, thus contributing to diversification of fuel, and this trend is to be continued JSC "RĪGAS SILTUMS" in last couple of years have received several recognitions :

- the JSC „RĪGAS SILTUMS” participated in the “Determination of the Sustainability Index” and was granted a prize in the Silver Group consecutively 5 years in a row, which was a confirmation that the company is implementing a long-term operational policy for efficient involvement of target audiences and introducing processes for identification and management of risks and opportunities.
- In fiscal year 2013/2014 by withstanding fierce competition, the JSC "RĪGAS SILTUMS" has become one of the champions of the Latvian national level selection of the prestigious "European Business Awards" (EBA).
- In 2012 JSC „RĪGAS SILTUMS” became one of the top 20 most attractive employers in Latvia.

WHAT DO WE DO

The JSC "RĪGAS SILTUMS" is engaged in production, transmission and sale of heat, as well as provides technical servicing of the internal district heating systems of buildings and heat consumers. In compliance with the Articles and the licences that the company holds, also generation, transmission, distribution and sale of electricity is allowed.

Heat is produced at five heat plants and several tens of small-scale and medium-scale boiler houses. The company inherited most of the heat sources from the district heating facilities of Riga that were built during the Soviet times. It was obsolete from the technical point of view and a comprehensive and sustainable development plan was missing. Very soon after the establishment of the Joint Stock Company, the upgrading of the facilities was started based on Riga District heating development concept (Rīgas Siltumapgādes koncepcija) approved by Riga City Council. The increase of the share of renewable energy resources is among the major goals of the modernisation process as well as to use most effective and efficient technologies. At present the proportion of the green energy within the heat balance of the company achieves 30.5% in comparison to year 2007 when it was just 2.5 %.

OUR STORY

Our development guidelines are defined by the state of Latvia and Riga City Council. In 2007 the government of Latvia developed the guidelines for the development of energy during the time period from 2007 to 2016. They focused on the increase of the share of renewable energy resources. On 30 September 2008 Riga was the first European capital who signed the Covenant of Mayors. The Covenant of Mayors is an ambitious initiative of the European Commission containing voluntary commitments of local political leaders to cut the amount of carbon dioxide emissions produced by the European union by 20% by 2020. This should be achieved by attaining a 20% improvement in energy efficiency and by increasing the share of renewable energy resources within the total energy consumption up to 20 %. Taking into account the above, as well as the increase of the price of natural gas, we are actively working towards increasing the use of biofuel at our production facilities. Currently Riga City has adopted a new Sustainable Energy Action Plan for Smart City, and JSC is amongst leading stakeholders and pilot initiators such as introduction of absorption heat pump, flue gas usage amongst others.

We implemented the first project of biofuel in 1996 when a biofuel fired furnace (7,5 MW) was installed in one of the heat plants. At present, four heat plants have been upgraded based upon the state-of-art technologies.

In 2010, the wood-chip fired district heating boiler house (14 MW) "Vecmīlgrāvis" was commissioned.

On February, 2013 the biofuel fired boiler house (20 MW) "Zasulauks" was commissioned. The combustion process of the plant is completely automated, the boiler house operates without permanent service personnel there, and thus the safety of its operation is increased considerably. The operation of the boiler plant is monitored and controlled remotely. Thanks to the modern wood incineration technology – wood chips are incinerated within the fluidised bed combustion technology process, and the use of a flue gas condenser, the efficiency rate of the boiler is close to one hundred per cent. This project was implemented by utilizing the co-financing of the European Union Cohesion Fund. It produces average 115,000 MWh of heat annually at the consumption of biofuel equal to 130,000 loose m³ per year. The average reduction of the consumption of natural gas equals 12 mill.m³/ year.

On May, 2013 also a biofuel fired cogeneration plant (4 MW_{el}, 22 MW_{th}) at the heat plant "Ziepiekkalns" was commissioned. This project was implemented by utilizing the co-financing of the European Union Cohesion Fund. It produces average 110 000 MWh of heat annually and to transmit 17,500 MWh of electricity to the grid annually at the total consumption of bio-fuel of 176 000 loose m³ per annually. The average reduction of the consumption of natural gas equals 12 mill. m³/ year.

In the result of implementation of the above projects, the heat production at the heat sources of the Joint Stock Company has become much "greener", i.e. the consumption of natural gas has decreased considerably and an increase of the proportional share of bio-fuel in the total fuel balance is expected from 8.3% during the preceding fiscal year to 30.5% on average per year. Moreover, by replacing natural gas with an environmentally more friendly fuel, i.e. wood chips, by implementing

the fuel diversification, the amount of utilized greenhouse gas emission allowances decreases by 40-50 thousand and the fuel costs decrease considerably.

The use of wood chips provides two benefits for this country. The decrease of the dependence of Latvia upon imported gas presents the first benefit. Second, the use of wood chips provides a contribution to the national economy of Latvia because additional jobs are created in the wood processing sector.

From the point of view of taking care of the environment and securing of the efficiency of use of resources, the introduction of cogeneration in energy supply presents a huge step forward. When both heat and electricity are generated within the same technological unit, more efficient utilisation of the energy of fuel is achieved and the amount of emissions decreases. The first cogeneration plant of the Joint Stock Company "RĪGAS SILTUMS" was put in operation in 2003. At present, five cogeneration power units are in operation with power capacities from 0,5 MW up to 47,7 MW.

Following the modernization, our heat plants have become more environmentally friendly because the state-of-art flue gas treatment devices, as well as other innovative technologies have been installed there.

Our attempts to operate in a modern way are felt by every resident of Riga who uses our services. Thanks to the upgrading of the DH system of Riga, constructing a biofuel fired cogeneration power unit at the DHP "Ziepniekkalns", installing of a biofuel fired boiler at the DHP "Zasulauks" and reduction of price of natural gas, a 4,5% decrease of the heat rate was implemented.

In the course of continuing the implementation of measures for improving energy efficiency at heat sources, In December 2013 a flue gas condenser was installed for the existing biofuel fired boiler with the capacity of 14 MW at DHP "Vecmīlgrāvis". The implementation of this project will result in increasing of the proportional share of biofuel in the balance of the JSC "RĪGAS SILTUMS" by 1% annually.

The JSC „RĪGAS SILTUMS” operates approximately 800 km of DH networks for ensuring heat supply. The total length of DH networks owned by the company amounts to 683km. In 18 years period JSC „RĪGAS SILTUMS” has reconstructed 384 km DH networks, of which 234 km are networks with no channels.

The measures of reconstruction of the district heating supply system and the increase of the efficiency of the JSC operation are reflected by the changes in the heat losses. In fiscal year 2013/2014 the heat losses amounted to 13.30% of the heat transmitted to the network.

In January 2015 Riga has the lowest heat rate among the capitals of the Baltic States. It is by 13% lower than the heat rate in Vilnius and 10% lower than the heat rate in Tallinn and Riga's prices are amongst lowest in Latvia, too.

We utilize both the money that we have earned and the aid provided by the European Union Structural Funds for implementing modernization of our facilities and willingly share our expertise with colleagues in EU and Eastern Partnership countries.

The development of the network for automated reading of heat meters was completed in fiscal year 2012/2013. At present, 7 750 of 8 000 heat meters are equipped with automated devices of meter

reading and their readings of the heat consumption during a preceding month are recorded automatically on the first date of every month for all the customers within a couple of hours. Thanks to the implementation of this project the accuracy of metering of heat consumption was improved and the customers' time was saved, as the heat consumers no longer have to record the readings of heat meters on the first date of every month and to report them to the responsible employee of the JSC „RĪGAS SILTUMS”. Building of the system for continuous monitoring for damages of pre-insulated pipelines constructed according to the non-channel technology is another important positive gain from the project. The installed system allows identifying the type of damage in a fast and accurate manner, thus improving the security of heat supply and reducing heat losses at damaged sections of the DH network.

LOOKING AHEAD

The JSC “RĪGAS SILTUMS” plans to continue the implementation of projects of installation of biofuel fired boilers and improvement of the efficiency of heat boilers.

In the course of continuing the upgrading of heat sources and developing the heat production by using bio-fuel, it is planned the new biofuel fired boiler house in “Daugavgrīva” to be commissioned 2016 and in “Imanta” to be commissioned 2018.

Modernisation measures, by reviewing the opportunities of using the modern technologies, will also be continued after the implementation of the above referred projects. They will provide for further increasing of the efficiency of heat production, production of heat in an environmentally friendly manner and reduction of production costs, as well as for improvement of the security of heat supply.