

Clean and efficient energy in Liepaja

Liepaja improves energy security thanks to energy efficiency and biomass

A Covenant of Mayors 2016 Case Study

In a nutshell

The city of Liepaja has engaged in a bold energy efficiency project to improve the energy performance of its 64 buildings. In 2013, Liepaja also decided to switch from gas to biomass.



Liepaja in numbers

- Covenant of Mayors signatories in the country: 19
- Number of inhabitants covered in Liepaja: 82,413
- CO₂ reduction target: 77,983 tons

Background

Liepaja is the third largest city in Latvia with a population of 82,000 inhabitants. The city committed to the Covenant of Mayors in 2012 targeting a 35% reduction in CO₂-emissions by 2020 on its territory. The municipality employs an energy manager and a team of experts dealing with sustainable energy issues and offering advice and support to households.

The city has a good potential and tradition in using sustainable energy. Its well-developed, and ecological public transport system ensures affordable mobility. Moreover, the city holds 39% of its local energy utility of which 10% of the shares are held by citizens.

Energy-efficient renovation of municipal buildings

A bold energy efficiency project was launched by Liepaja City Council in 2009 to improve the energy performance of its 64 buildings. Three main operations were conducted during this project.

First, the buildings were fully renovated (window and door replacement, thermal insulation, heating system renovation or reconstruction, recuperative ventilation system, construction of separate buildings, installation of solar collectors linked to the heating system). Second, every building was equipped with data loggers, recording every 15 minutes the temperature, humidity and concentration of CO₂ in the rooms. The data collected was analysed and contributed to reducing the energy consumption.



Finally, the buildings' staff were trained - both through seminars and individually - for every building. As a result of this training, they were able to analyse the data received and to provide guidelines to heating units and ventilation devices companies.

The results are very positive. 57 of the 64 city-owned buildings were renovated in 2011. After the refurbishment work and the introduction of the monitoring system, €567,445 were saved and the energy consumption decreased by 7,784 MWth in 2014, compared to the 4-year average consumption before renovation..

Fuel switch from gas to biomass in local cogeneration plant

In 2013, Liepaja decided to switch from gas to biomass. The project started with the implementation of a biomass boiler house with a 30-MWth thermal capacity the same year. The total installed thermal capacity at Liepaja plants reached 236 MWth and the electrical capacity increased to 6 Mwe. The EU Cohesion Fund co-funded this project with €5,8 million.

In 2014, four gas boiler houses were shut down and a heating main was built to switch consumers over to the new 30 MW biomass boiler house, thanks to an additional €400,000 co-funding from the EU Cohesion Fund. An online monitoring system for heating energy consumption and heat transfer fluid parameters was also installed the following year.

In the end, Liepaja managed to reduce its energy dependence from imported gas while reducing its citizens' energy bill. Over the five-year period, heat distribution losses in Liepaja were significantly reduced (26.2% in 2009, 15.4% in 2013 and 15.2% in 2014). The district heating tariff in the city was reduced by 4.5% as of 1st December 2013 and by a further 1.8% as of 1st October 2015.

Project numbers

€6.2 million total EU co-financing for both energy efficiency and biomass projects

57 municipal buildings renovated

€567,445 saved through energy efficiency measures in municipal buildings

4.5% decrease in district heating tariffs in 2013 and further 1.8% in 2015



Liepaja biomass facility

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Further resources

<http://www.liepaja.lv>

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