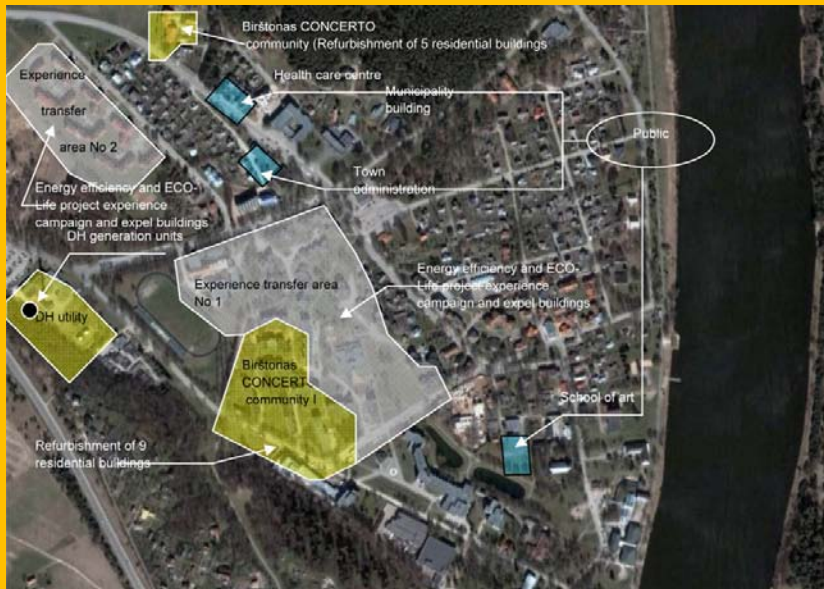


## Birštonas - Ecotown

### Kaunas Region, Lithuania



Plan of Birštonas ECO-town, Lithuania

### Birštonas Kaunas County, Lithuania



### Results and Impacts

Project outcomes in terms of ENNEREG's performance indicators

**Start Date:** 2010

**End Date:** 2011

Heat generation from biomass accounted for approximately 60%, and the rest was covered by natural gas. The installation of an additional 2 MW heat generation capacity based on bio fuel enabled reduction of CO<sub>2</sub> emissions and encouraged the use of local, renewable fuel resources.

Renovation of around 25,500 m<sup>2</sup> of living space within 13 multi-flat buildings (wall construction from bricks) with low standard and poor energy-efficiency performance as well as 3 non-residential buildings: office building, school of art, health care centre. Gross area of these buildings accounts 2585 square metres.

Having the majority of the heat produced by burning biomass, additionally, a flue gas condensation unit will be installed at a later stage in order to improve energy generation efficiency. In the buildings, solar collectors and heat pumps will be installed to cover the energy needed for DHW.

### Summary

Birštonas – the smallest Municipality of Kaunas region - participated in the ECO-Life project (Sustainable zero carbon ECO-town developments improving quality of life across EU) under CONCERTO initiative in FP7.

The large number of demonstration activities is based on both the demand side (demonstration of ECO-buildings and rational use of energy) and the production side (demonstration of various renewable energy technologies). All demonstration projects are defined in a "Whole Community Approach".

### Aims and Objectives of this Sustainable Energy Action

Inhabitants of municipality: 5,400 and inhabitants of ECO-Life community: 900 The main components in Birštonas will be:

- Renewable energy supply (RES) – biomass boilers, solar collectors;
- Energy efficiency in buildings (RUE) – refurbishment, efficient lightening;
- Polygeneration – CHP generator, connection to biomass gasifier;
- Ashes from the biomass boilers will be used as fertilizer in the forest.
- Integration of RES and RUE - integration of supplementary decentralized solar and heat pumps as well as the reduction of energy demand for space heating, flue gas condensation, transportation by foot and bikes;
- Specific innovations – new metering, monitoring, ESCO financing schemes.

### Technical Implementation

- **Energy efficiency and savings in buildings:** 25,500 m<sup>2</sup> or about 360 typical Eastern European dwellings refurbished to very high energy efficiency. 2585 m<sup>2</sup> of new tertiary buildings built as low-energy houses. Energy efficient external lighting.
- **RES solutions:** 2 MW biomass boiler installations in DH utility. The heating is based on the local biomass resources (wood waste from forestry and sawmills). Installation of 500 m<sup>2</sup> solar collectors. The buildings will be fitted with solar collectors for DHW production and/or heat pumps for provision of DHW. PV will be used on a small scale.
- **Polygeneration:** Installation of 500 m<sup>2</sup> solar collectors. The buildings will be fitted with solar collectors for DHW production and/or heat pumps for provision of DHW. PV will be used on a small scale.
- **RES and RUE integration.** The integration of supplementary solar and heat pumps as well as the reduction of energy demand for space heating enables the district heating net (over time) to operate at a lower temperature causing a reduced heat loss from the grid. The lower district heating return temperatures combined with flue gas condensation unit installation makes it possible to improve the utilisation of the biomass. The in and out coupling during night and day of heat pumps for DHW helps levelling off the load on the power supply.

### The Partners and Stakeholders

The project consortium included UAB COWI Lietuva (coordinator); Birštonas Municipality; Birštono Šiluma (DH company); AVSC group; Lithuanian Builders Association; Vilnius Gediminas Technical University; Housing and Urban Development Agency; UAB Būsto idėja, Palanga Municipality (observer). Each stakeholder participated in a specific task (RES in district heating, buildings refurbishment, etc.).

### Lessons Learnt

The project is the first complex project, with various objectives and added value to a small community, famous as SPA-resort, which became even more attractive to local population and patients, who visit this resort, as project was implemented not just in residential and public buildings, but arranged the outside surroundings.

**Strengths:** involving local population and making the community more attractive.



### How this Action could be Replicated

The main barrier for implementation of such SEPs is lack of funds, as such a complex project needs large external and local financing and small communities are not able to take large loans. Private businesses also tend not to be very large in small communities.

Find out more about this and other Sustainable Energy Actions, online at: [www.regions202020.eu/gp](http://www.regions202020.eu/gp)

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### Further Information

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