



Visit in Demonstration region West Sweden - Sweden, Mölndal Energi, Renova, 18, 19/06/2019

The team of BIOREG project visited 2 facilities in Sweden in June 2019 as a part of the project strategy to learn more about the Demonstration regions and to explore how the good practices can be transferred into recipient regions.

Mölndal Energi - Energy utility

Mölndal Energi offers electricity, district heating and energy services to households and industries. In total, they produce 402 GWh of district heating. The main feedstock for the district heating comes from residues derived from forest lumbering such as twigs, bark, stumps and tops from trees (53% based on energy input). Another feedstock is wood waste (mechanically treated wood waste and wood waste with small amounts of paints or similar contaminants) which covers about 23% of the total energy input of the plant. The bottom ashes are being used as covers for landfills and fly ashes have to be disposed.



Mölndal Energi - Energy utility



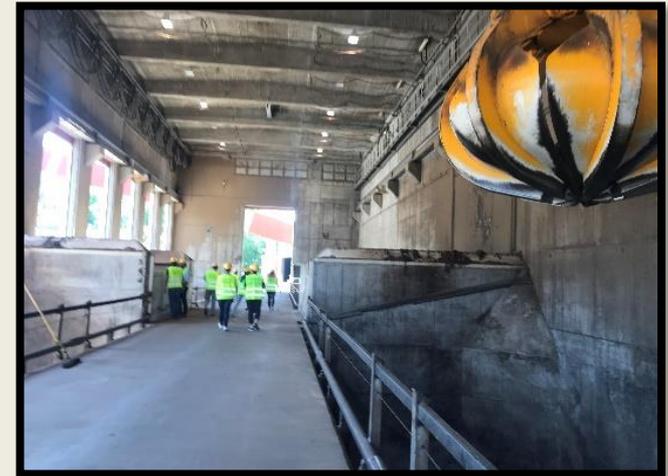


District heating is a very common and efficient way to deliver heating to households and industries in Sweden where the main feedstock either come from residue from the forest or as surplus heat from the industry or incineration plants.

Mölndal Energi - Energy utility



Mölndal
Energi -
Energy
utility



In 2016, a total of 18.1 TWh of energy was produced, out of which 15.9 TWh was used for heating and 2.2 TWh for electricity. Sweden recovers more energy from waste than any other country in Europe.

The tour in Mölndal Energi included different steps in the process, from the intake of raw material through the different stages of producing heat for the district heating system.





Renova - Waste incineration

Renova's waste-to-energy plant at Sävenäs in Gothenburg is among the largest in Sweden and one of the world's most advanced facilities for the incineration of waste for the production of heating and electricity. Around 300 trucks deliver waste to the plant on a daily basis. A total of 550,000 t of waste per year are incinerated in the plant. Wood waste (about 35,000 t/year) accounts for about 6 to 7% of the total waste input (based on weight). The waste is burnt in three furnaces and the thermal energy generated is then transformed into electricity and district heating. From each tonne of waste combusted today, 3.3 MWh of energy is recovered in the form of electricity and district heating (which is one of the highest rates worldwide).



Renova - Waste incineration

60% of the electricity production is labelled as biofuel-based origin. Every year, the waste-to-energy plant provides 30 percent of district heating in the region's network and 5 percent of the electricity needs of Gothenburg's population.





The plant is equipped with a state-of-the-art heat recovery and flue gas cleaning system. A current project deals with Zn recovery from fly ashes, which will further improve the recycling rate of the ashes generated in the plant.

A tour around the facility took place in order to see where the waste is unloaded and how the wood waste is being mixed into the household waste for it to become a homogenous mix for the kiln.



Renova - Waste incineration





Renova - Waste sorting plant

Unsorted material, burnable or not burnable, is received from the industry, construction sites etc. for further sorting and pre-treatment in the facility. As much waste as possible, is recycled to new materials or as energy.

Wood waste accepted at the site are being separated to different categories such as:

- twigs and other smaller sized fresh wood (green waste), which are mainly used as a raw material for composting,
- impregnated wood and treated wood (painted, coated etc.), which is mainly used in the waste incineration plant of Renova,
- untreated wood, which is mainly used as a fuel in biomass heating plants and paper mills.



Renova - Waste sorting plant

We had a good overview of the facility by entering a watch tower and our guides gave us a presentation of the process at the site.

