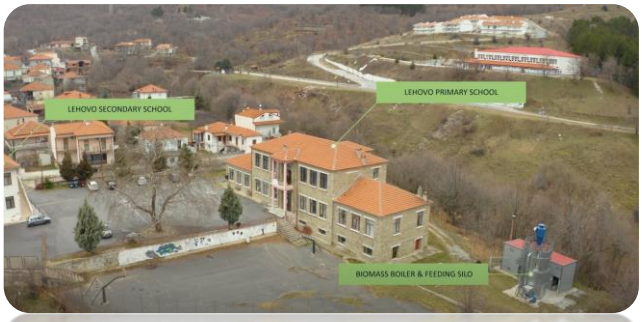
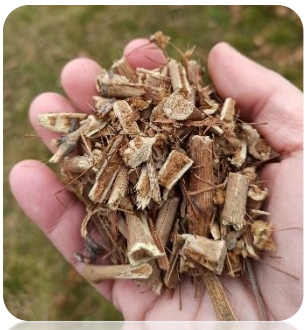
Success case factsheet

District Heating Company of Amyntaio, Greece

A district heating company in Greece switches to biomass heating and starts new local heating projects using agrobiomass

Amyntaio & Lehovo, Greece
Variety of agrobiomass fuels used
Projects started in 2016
District heating network (Amyntaio) &
Heating for two municipal schools (Lehovo)





THE STORY

West Macedonia is a Greek region with a cold, continental climate. For decades, it has served as the main pillar of the Greek electricity system, through the local mining of lignite (low rank coal) and its use in several coal-fired power plants. District heating systems using heat derived from these coal plants were established in the 1990s and 2000s in three cities and provided low cost heat to local citizens. However, the imminent coal phase-out in Greece and the decommissioning of the coal plants requires alternative solutions.

DETEPA is the municipal district heating company established for the city of Amyntaio and a few nearby communities. Knowing that the Amyntaio power plant would be decommissioned in 2020, DETEPA started investigations already back in 2015 to implement a new biomass heating system that would substitute the coal plant derived heat. The 30 MW in total biomass heating plant started operation in the 2020-2021 season and is already providing a low-cost and renewable solution to the local citizens. This is the first project of its kind in Greece.

DETEPA requires around 60,000 MWh of fuel input per heating season. The establishment of local biomass supply chains is an ongoing process and the company has been using a variety of fuels: forest residues, wood waste, sunflower husk pellets and others. In the 2021-2022 heating season, DETEPA introduced the first quantities of maize residues – the most abundant local biomass resource – in its fuel mixture and is looking to increase the quantities used.

In 2015, DETEPA also established a pilot DH system at the village of Lehovo for the heating of the two local schools. Initially envisaged to operate with commercially sourced wood pellets, the biomass system at Lehovo has underwent improvements and can now use around biomass in the form of wood chips. Different fuels have been tested – vineyard pruning chips, sunflower husk pellets, etc. The small biomass DH at Lehovo is also innovative for Greece and can serve as a replication model for other municipalities wishing to exploit local agrobiomass resources.

FACTS

Challenges

- Lack of previous knowledge on the technology
- Continued fine-tuning of operating aspects
- Finding funding sources
- Establishing reliable local biomass supply chains

Keys of success

- High heat demand in local area
- Use of public / EU funding for scoping studies & investment
- Existing DH network
- Specialized technicians employed by DETEPA involved in boiler operation, cleaning and maintenance

Technology

- Amyntaio: 2x15 MW biomass boilers with moving grate technology, equipped with all necessary antipollution control systems
- Lehovo: 1x300 kW biomass boiler, by Greek manufacturer PelleTech (Camino Design), equipped with moving grate and suitable for wood chips combustion

Economics

- Amyntaio: circa 12 mil. € investment (53 % public funding)
- Lehovo: circa 90 k€ investment (paid by Interreg project)
- Heat supplied by DH system is 1/3 of the cost of alternatives (heating oil, natural gas, etc.)

Community

- Biomass-based district heating provides a real solution to an urgent issue phased by local communities
- Heating cost is very high due to climate; low-cost solutions are needed

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