

# Upper Austria – Leader in biomass heating

## "Carrots, sticks and tambourines" for bioenergy

Upper Austria, one of Austria's 9 regions with a population of 1.5 million, holds a leading position in biomass heating: 15 % of primary energy comes from sustainable biomass, 35 % of all dwellings are heated with clean biomass and there are over 6,000 jobs in the biomass heating industry. The region is home to leading biomass boiler companies. More than 25 % of all modern small-scale biomass boilers installed in the EU are manufactured by Upper Austrian companies. The manufacturers cooperate in the Cleantech-Cluster Energy, managed by the regional energy agency, OÖ Energiesparverband (ESV).

Biomass heating systems have become a standard solution in the region and Upper Austria has one of the highest densities of small-scale automatic heating systems in the world. A comprehensive policy approach led to the establishment of a well-developed biomass heating market and supply chain. Over 1 billion Euro per year are invested in biomass fuels and equipment. Bioenergy has emerged as an important economic driver for the region and plays a key role in its ambitions for achieving the energy transition.



### Upper Austria's biomass sector – key facts and figures

- 15 % of the region's total primary energy comes from sustainable biomass.
- 35 % of all dwellings are heated with modern, clean biomass.
- More than 25 % of all modern small-scale biomass boilers installed in the EU are manufactured by Upper Austrian companies.
- One of the highest densities of small-scale automatic heating systems in the world.
- Over 1 billion Euro per year are invested in biomass fuels and equipment.
- 350 biomass district heating networks are in operation.

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### Modern, clean, efficient and fully automated

The development of the biomass heating market in Austria stands on these three pillars: sustainable forestry practices, effective fuel production and distribution, and efficient and low-emission heating equipment.

The main fuels used are wood pellets and wood chips, followed by some firewood. In Austria, pellets are produced primarily from sawdust and wood shavings. They are a highly standardised and energy-dense fuel with interesting advantages: They can be cost-effectively transported, readily utilised in automatic boiler systems, and allow for ultra-low emissions. In this manner, wood is a clean, CO<sub>2</sub>-neutral fuel that plays an important role in decarbonising the heating sector.

### Bioenergy: a key piece of the energy transition

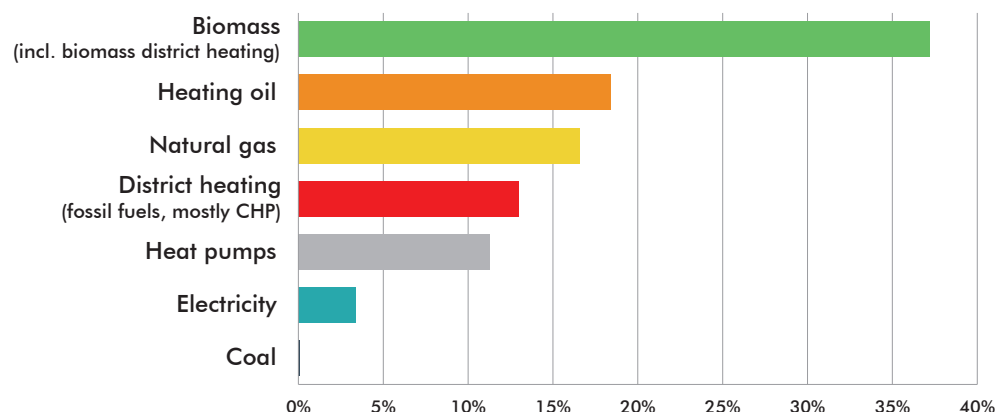
Upper Austria, supported by the ESV, is well on its way in the energy transition: 60 % of all space heating already comes from renewables and greenhouse gas emissions in the building sector were reduced by 32 % in the last decade.

This was achieved through a combination of energy efficiency measures and renewables, with bioenergy playing a central role.

58,000 automatic biomass systems heat Upper Austrian dwellings. Of these, around 55 % are fuelled with pellets, and 45 % with wood chips. Bioenergy supports local forestry, allows for new business opportunities and local jobs, and contributes to the region's energy independence. It is also an ideal partner of energy efficiency and other renewables. It permits to decarbonise heating also in winter when other renewable energies are less available (i.e. hydro and solar power).



## Heating in Upper Austria % of all dwellings



58,000 automatic biomass systems:  
32,000 pellets  
26,000 wood chips

350 biomass district heating plants

### A comprehensive biomass policy package

Owing to its importance for the economy and in achieving climate protection goals, biomass has long been considered in all of Upper Austria's policies and programmes. Regional policy has been a crucial driver in developing the modern biomass heating industry by providing stable support to the market for the past 30 years. Upper Austria's elaborate policy package consists of "carrots" (financial incentives, mostly investment grants), "sticks" (regulatory requirements for emissions and efficiency) and "tambourines" (information activities such as energy advice, outreach campaigns, training etc). Together, these policies stimulate innovations in equipment and fuels as well as boost consumer confidence in new technologies. There are also strong synergies with other elements of the region's energy strategy, such as the regional government's commitment to eliminate oil heating and its replacement with renewables.

### Quality is king! Driving the market through standards

Upper Austrian biomass boiler technology is a textbook example of how technological advances can be driven by regulatory requirements, incentives and smart entrepreneurs. Boiler emissions and efficiency standards were progressively tightened over the years, spurring innovation. Boiler manufacturers responded favourably by developing high-efficiency, ultra-low emission products. This, in turn, positioned Upper Austria's small-scale biomass boiler industry to capture a global leadership position. Early standardisation of fuels (especially pellets) was a main success factor: It allowed for designing fully automated and high-efficiency heating systems. The quality and convenience of these systems helped create consumer confidence. Fuel standards are a legal requirement but are also reinforced through product warranties on biomass boilers.

### Green Heat Entrepreneurs – successful business models

Creative entrepreneurs developed business models that helped the sector grow. Forward-thinking farmers and forest owners were looking for new sources of revenue and markets for forestry residues. The business model that emerged was cooperatives of farmers and forest owners that develop, build and operate small-scale biomass district energy systems. The cooperatives generate and supply heat to local public buildings, businesses and homes – as well as create local income and jobs. Today, more than 350 such biomass district heating networks are in operation.

### Goodbye oil, hello biomass!

Although over a third of all dwellings are heated with clean biomass, the 18 % that are still heated with oil are responsible for 45 % of the building CO<sub>2</sub>! The region is giving a clear sign of its commitment to leaving oil behind. By 2035, there will be no more oil heating! In 2019, the OÖ Energiesparverband (the regional energy agency), launched "AdieuÖl", a large-scale information and public awareness campaign supported by the Regional Minister of Energy. True momentum has been created for achieving a critical mass where oil heating is simply no longer accepted. More than half of the oil heating systems removed so far were replaced with modern biomass installations! This emphasises how decreasing dependence on imported fossil fuels can benefit the climate as well as the economy.

### Advantages of clean wood heating

- A good heating option
- Supports local forestry
- New business opportunities & local jobs
- Energy independence (decreased dependence on fossil fuels)
- Contributing to environmental and climate goals

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