



# Transformation of the Austrian High-Efficiency Biomass Heating Market



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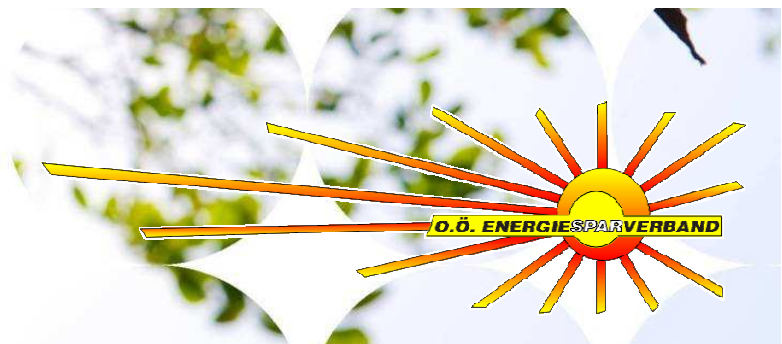
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# The Federal State of Upper Austria Oberösterreich

Capital: Linz  
Population: 1.38 million (similar to NH)  
Area: 4.600 mi<sup>2</sup> (similar to CT)  
Gross inland cons.: 305 PJ; 32 % renewables  
Economic activities: industry, service sector, tourism,  
25% of the Austrian industrial exports





## Energy Action Plan of Upper Austria

### 1994 - 1999

- 30 % renewable energy (hydro, wood biomass, solar)
- energy consumption in new housing reduced by 30 %
- 15,000 jobs

### 2000 - 2010

- double biomass & solar: wood biomass 13 % (2007)
- 1 % energy saving/year
- 1.5 % energy savings in the public sector/year

### 2010-2030

- 100 % space heating & electricity from renewable energy
- reduction of heat demand by 39 %
- minus 65 % CO<sub>2</sub> emissions



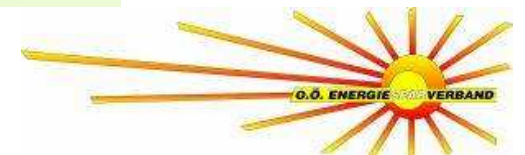


## The Oekoenergie-Cluster Upper Austria (OEC)

- network of renewable energy & energy efficiency companies in Upper Austria
- 150 partner companies
- since 2000, managed by O.Oe. Energiesparverband
- [www.oec.at](http://www.oec.at)
- main business fields:
  - biomass heating
  - solar heating
  - energy efficient buildings

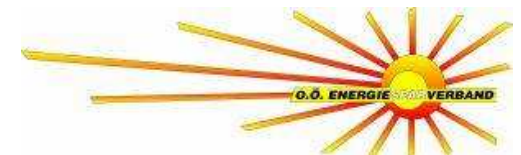


- **Turnover:** 2.2 billion US \$
- **Employees:** ~ 4,500
- **Export share:** > 50 %



# "Booming Business"

- Investment in new buildings & production facilities:  
> 200 million US \$
- New staff: > 500





# Solar thermal, Biomass, Efficient Buildings





# Biomass heating technologies



- automatic wood pellet heating systems



- biomass district heating networks

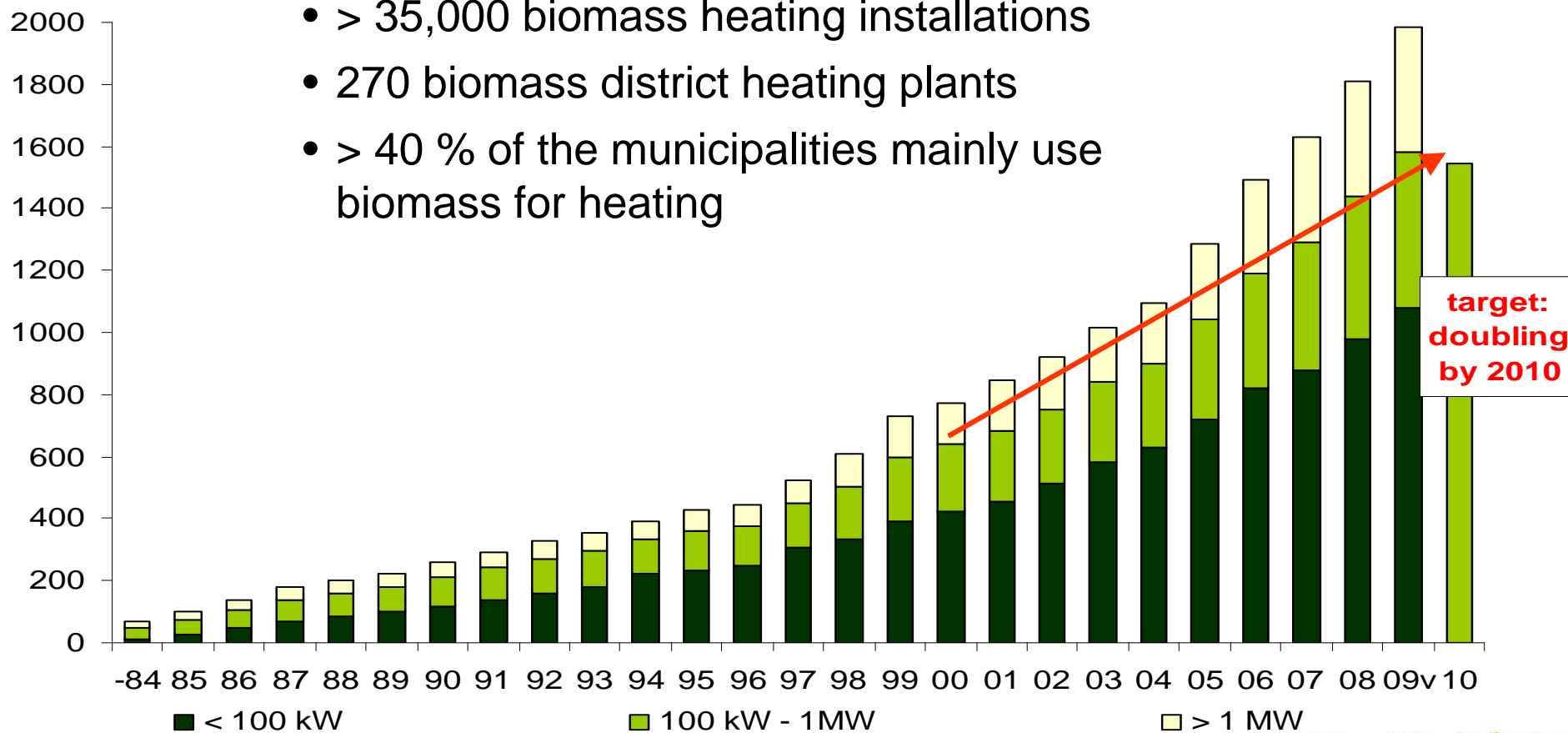


- large-scale combined heat and power plants

# Biomass heating in Upper Austria

- 14 % of total energy consumption
- > 35,000 biomass heating installations
- 270 biomass district heating plants
- > 40 % of the municipalities mainly use biomass for heating

capacity in MW







## Renewable Heating in Upper Austria

- covers 45 % of the heating demand
- more than 140 million US \$ investment in new installations annually
- reduces energy bill for imported fossil fuels by more than 700 million US \$ annually
- employs more than 5,000

- to meet our objective of 100 % renewable heating in 2030, heat demand has to be decreased by 39%





## Potentials - renewable energy sources 2030

### RES-el:

Biomass (electricity)	484 GWh	→	1,370 GWh
Biogas	50 GWh	→	600 GWh
Hydro power	11,700 GWh	→	12,200 GWh
PV	5 GWh	→	150 GWh

### RES-heat:

<b>"Green heat" (incl. district heating)</b>	<b>38 PJ</b>	<b>→</b>	<b>62 PJ</b>
Biomass (heat)	23 PJ	→	40 PJ
Heat pumps	1 PJ	→	2 - 3 PJ
Solar thermal	1 PJ	→	4 PJ



## Biomass innovation along the value chain



- innovation in policy
- innovation in R & D support and products
- innovation in business development support
- innovation in promotion, training and awareness raising

... based on the tradition of sustainable forestry and a longer-term vision for the economic development of farmers

... making Upper Austria one of the leading biomass regions in Europe and world-wide





# Upper Austria's sustainable energy strategy

## 3 Pillars



**Legal  
measures**

"stick"



**Financial  
measures**

"carrot"



**Information  
activities**

"tambourine"

# Upper Austria's sustainable energy strategy – example biomass heating

## Legal measures

- Renewable heating obligations (public buildings & buildings > 10,000 ft<sup>2</sup>)
- Inspection of boilers & AC systems
- Energy performance certificates
- Minimum requirements heating & cooling

## Financial measures

- Soft loans for efficient renovation
- Grants for renewable heating
- Pilot projects
- Contracting
- Regional R & D programme

## Information & training

- Energy advice
- Training & education programmes
- Campaigns & competitions, media activities
- Local energy action plans
- Publications
- Oekoenergie-Cluster

## Policy Packages



## Training programmes along the value chain

Target groups for training:

- producers of equipment and materials
- installers and construction workers
- users of buildings and installations

New professional education:

- University degree "green energy engineers" (since 2002)
- "Green energy installers" (since 2002)

Trainings offered by O.Ö. Energiesparverband

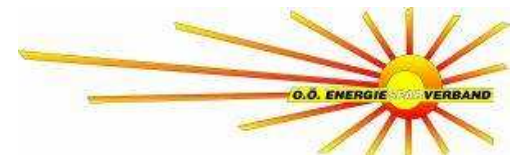
- 25 courses/year, 70 training days
- 500 participants
- focus on energy efficient buildings & renewable heating







## Biomass boiler producers – company headquarters in Upper Austria & OEC partners








# European Pellet Conference 2010

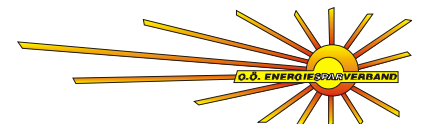
[www.wsed.at](http://www.wsed.at)

**3. – 4. 3. 2010**, Wels / Austria

- European Pellets Conference
- Building Renovation – towards low
- Energy Consumption
- Solar Thermal Conference
- Energiesparmesse - trade show (1,600 exhibitors, 100,000 visitors)



Intelligent Energy  Europe







## The end of the oil-era?

