



# Green energy, green jobs

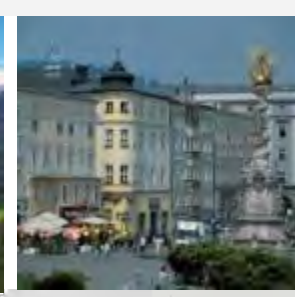
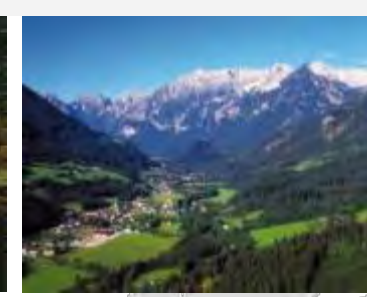
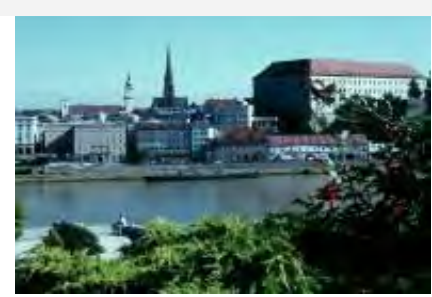
## How Upper Austria developed its biomass heating market

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[www.oec-en.at](http://www.oec-en.at), [www.esv-en.at](http://www.esv-en.at), [www.wsed.at](http://www.wsed.at)





## The State of Upper Austria Oberösterreich

Capital:	Linz
Population:	1.38 million (similar to NH)
Area:	4,600 mi <sup>2</sup> (similar to CT)
Economic activities:	industry, service sector, tourism, 25% of the Austrian industrial exports



# Energy Agency of the State of Upper Austria

## OÖ Energiesparverband

### Organisation

- founded (in 1991) and mostly funded by the state government
- promotes **energy efficiency** and **renewable energy**
- provides **services** to private households, public bodies & businesses
- manages programmes on behalf of the state government
- supports development of legislation and policies



### Services

- Energy advice (15,000 sessions/a)
- Building rating (> 80,000 buildings rated since 1993)
- Training programmes
- Management of state subsidy programmes
- Public awareness campaigns, events, publications
- Pilot projects
- Municipal energy strategies
- European cooperation
- **OEC network**

## The Oekoenergie-Cluster Upper Austria (OEC)

- network of renewable energy & energy efficiency companies in Upper Austria
- 160+ partner companies
- since 2000, managed by the OÖ Energiesparverband
- [www.oec-en.at](http://www.oec-en.at)



- **Turnover:** 2.5 billion US\$
- **Employees:** 8,880
- **Export share:** > 50 %



# Solar thermal, Biomass, Efficient Buildings



# Biomass boiler + equipment manufacturers in Upper Austria (partners of the OEC)



More info: [www.oec-en.at](http://www.oec-en.at)



# Ökoenergie-Cluster (OEC) 2000 - 2012

Number of OEC partners  
x 2



Staff  
x 5



Export countries  
x 7



Turnover OEC partners  
x 8



## Renewable energy sources in Upper Austria

- Share of renewable energy: **34 % of total primary energy demand**  
(15 % hydro, 15 % clean biomass,  
4 % solar & other renewables)
- Share of renewable heating: **50 % of total heating demand**
- Avoided imports of fossil fuels: **>1 billion US\$** per year

**By 2030, all electricity and space heating will come from renewables!**

- reduction of heat demand by 39 %
- reduction of electricity demand by 0.5 %/year
- minus 65 % CO<sub>2</sub> emissions



## Motivation for 100 % renewable targets

- **climate protection:**
  - increasing temperatures
  - more natural disasters
- **increasing costs:**
  - social problems ("energy poverty")
  - negative impact on the competitiveness of companies, especially price fluctuations
  - loss of purchasing power
- **import dependency** from geopolitically unstable regions
- **innovation and employment** ("green jobs")
- **economic perspectives for the farming/forestry sector**

## Biomass heating - why and how?

- a **sustainable** and **carbon-neutral** fuel
  - especially **suitable for heating** of buildings
  - modern heating systems are **fully automated** with **ultra-low emissions**
  - ensures **energy independence**
  - supports the local **forest economy**
  - **sustainable forestry**
  - heat demands continue to decrease ("**better buildings**")
  - only installations with **highest efficiencies & lowest emissions**, for electricity production, **only high-efficiency CHP**
- **Upper Austria** has pioneered biomass heating in the last two decades and **achieved global leadership in small-scale systems.**
- **25 % of all biomass boilers installed in the EU are manufactured by companies from Upper Austria**

# Carrots, sticks and tambourines



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

## "sticks"

### Regulatory measures

- Emission & efficiency standards
- Fuel requirements
- Renewable heating mandate
- Minimum requirements heating & cooling

## "carrots"

### Financial measures

- Investment grant programs
- Renewable heating as a program requirement
- Contracting program
- Regional R & D program, pilot projects

## "tambourines"

### Information & training

- Energy advice
- Training programs
- Publications, campaigns & competitions
- Local energy action plans
- OEC - sustainable energy business network

stimulate demand

**Policy Packages**

support supply

## Main policy instruments for biomass heating

- Driving the market through standards
- Financial incentives
- Renewable heating mandates/obligations
- Advice, information and awareness campaigns
- Education & training
- Supporting biomass heating manufacturers