

Wood fuel utilisation



	Austria	New Zealand	%
• Population (million):	8.4	4.41	52
• Area (km ²):	83,870	268,700	320
• GDP (billion USD)	418.5	142.5	34
• Land area covered by forests (%)	47	31	211
• Total round wood removals (m ³)	26.9	26.6	

Biomass Boiler Systems

- Number of households in Austria: 3,594,604
- number heated by biomass boiler systems: 738,666 (20%)
- Other big groups are: district heating 23%, Gas 26%, LPG and diesel 21% (goal is to replace those by 2050)
- Total thermal capacity of installed biomass boiler systems in Austria: between 700 and 1,150 MW thermal per annum!
- Boiler plants >1 MW (large boilers) between 30 and 90 a year (peak was between 2005 and 2007)



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Austria's timber industry at a glance

- 11.9 billion NZD turn-over (1 NZD=64 Eurocents)
- 1,500 companies in the wood and timber industry (of them 1,200 saw mills) - nearly all of them privately owned!
- 30,000 employees in the timber industry
- Exports about 70% (8.3 billion NZD) - Imports 5.8 billion NZD



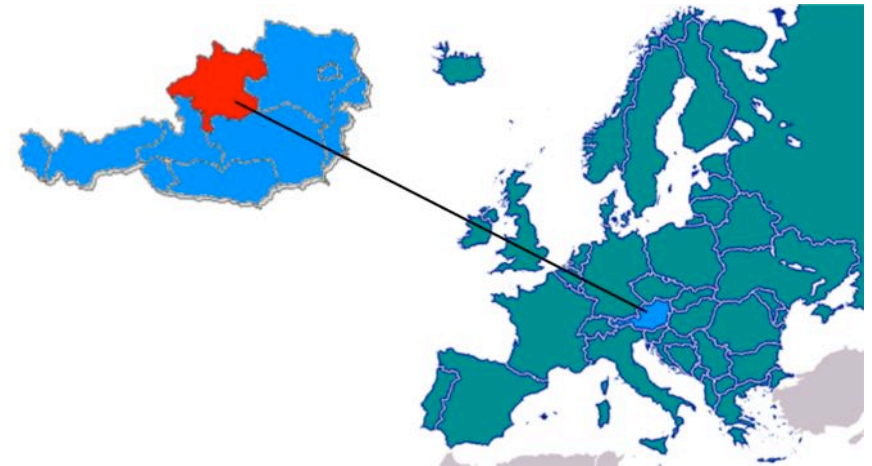
Solid Biomass in 2011

- Total sales of 2.3 billion NZD were generated by the use of solid biomass
- Bioenergy industry (solid biomass) employed around 14,200
NZ in 2008 – 5,800 were employed in mining
- 23 million cubic meter of biomass per annum for energy generation
- Biomass boiler, ovens and stoves market employs about 4,700 people (turnover of 1.6 billion NZD).
- Biomass is with more than 54% of the renewable energy sources the most important energy source.
- By using solid biofuels 9.2 million tons less CO₂
- 24 domestic pellet producers manufactured 940,000 tons of pellets a year

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Austria's Province of Upper Austria

- **Population:** 1.38 million (**3.3 x Waikato**)
- **Area:** 12,000 km² (**48% of the Waikato**)
- Economic activities: industry, service sector, tourism
- **25% of the Austrian industrial exports**



Renewable energy sources in Upper Austria

- Share of renewable energy:
34 % of total primary energy demand
(14 % hydro, **15 % biomass**, 5 % solar & other renewables)
- Share of renewable heating: **50 % of total heating demand**
- **Avoided imports of fossil fuels: >1 billion Euro per year**

Target: by 2030, 100 % electricity & space heating will come from renewables!

- reduction of heat demand by 39 %
- reduction of electricity demand by 0.5 %/year
- minus 65 % CO₂ emissions



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Employment and investments in biomass heating

- Biomass boiler industry in Upper Austria: annual **revenue 530 million Euro**
- Total employment in biomass heating: **4,500 jobs**
- Annual investment in **new biomass heating installations: 110 million Euro**
- Annual **sales of biomass heating fuels**, incl. CHP plants: **90 million Euro**
- Farming/forestry sector: **4,700+ farmers-forest owners deliver wood chips**

