Bioenergy in Austria
the small big business

Backbone of energy transition
Part of sustainable forestry and industry
Huge benefits and low emissions
• 1 Kg of solid sun light (ATRO)
• 5 KWH for 0,225 €
• Home grown during 6 months on less then 1 m2 sustainable managed forest
• >2 Kg CO2, stored for two years
• can replace ½ Liter of oil, ½ m3 of gas or 1 Kg of coal
Bioenergy in Austria

Final energy use: 1 121 PJ

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>22%</td>
</tr>
<tr>
<td>Waste</td>
<td>2%</td>
</tr>
<tr>
<td>Oil</td>
<td>38%</td>
</tr>
<tr>
<td>Coal</td>
<td>3%</td>
</tr>
</tbody>
</table>

Renewable energy: 391 PJ

- Wind: 5%
- Other Renewables: 4%
- Photovoltaik: 1%

Bioenergy: 217 PJ

- Others: 3%
- Biogas: 2%
- Waste: 2%
- Charcoal: <1%
- Pellets: 6%
- Liquid Biomass: 11%
- Wood Chips: 35%
- Fuel Wood: 26%
- Black Liquor: 14%

Bioenergy users:
- 30% industry
- 27% households
- 14% CHP
- 9% power plants
- 9% transport

Bioenergy is used:
- 81% as heat
- 11% as fuel
- 8% as electricity

Source of woody biomass:

- by products wood industry: 49%
- other sources: 29%
- by products forests: 22%

80% of bioenergy is based on woody (solid) biomass.

Only 25% of used biomass is converted to energy.
A lot of emotions, no knowledge and no focus on the big picture.
Wood stock and growth

Wood stock increase from 1960 till today: 350 million solid m³
Wood stock 1960: 750 million solid m³

Source: BFW, Holzflussdiagramm, Holzvorrat und Zuwachs in Österreichs Wald
Forest products

Wood prices in Austria

Sawlogs
Industrial roundwood
Energy wood

Energy wood is a by product of sustainable forestry
Woodflow in Austria

80% of used freshwood is processed by the industry, only 20% is used for direct energy production. The income for forestry out of selling biomass for energy varies between 3 and 10%. 1m³ solid wood product leads to 6m³ by-products > **Build with wood!!!**
Regional effects

Case study region Hartberg

- More jobs
- More income
- Less CO2 emissions
- Less cash drain
- Less fine dust emissions through modern efficient installations
The bioenergy sector in Austria

- 2.8 bn € turnover
- 22 000 full time working places
- -13 million t CO2 eq. reduction
- 20% of primary energy
- >4 000 companies
- >140 000 forest owners
- 1.5 million wood heaters
- 1.061.306 district heating users
There is a lot to do, let's start!

Backbone of energy transition
Part of sustainable forestry and industry
Big benefits and low emissions

Bioenergy

DI Christoph Pfemeter
Twitter:@chpfat
http://www.biomasseverband.at
Bioenergy in Austria
A factor creating added value

Wood Chips
From Harvest to Fuel