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# Workshop “Transport Biofuels Research in Austria”

Renewable energy 2020





## Utilisation cascade creates sustainability

**food**

**feed**

**fiber**

**fuel**



The important goals are:

## **1. Climate protection**

**Limitation of rise in temperature to 2°C**

## **2. Security of supply**

**Reduction of the dependence due to imports of fossil energy  
Securing energy supply**

## **3. Competitiveness**

**Rising fossil energy prices lead to a burden for citizens and enterprises**

# Goals of the European Union



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EU Summit of Heads of State and Government March 2007

20 % Renewable energy until 2020

20 % Saving energy consumption until 2020

20 % Reduction of CO<sub>2</sub> emissions

10 % Biofuel admixture until 2020



# Result of the EU Burden Sharing for Austria



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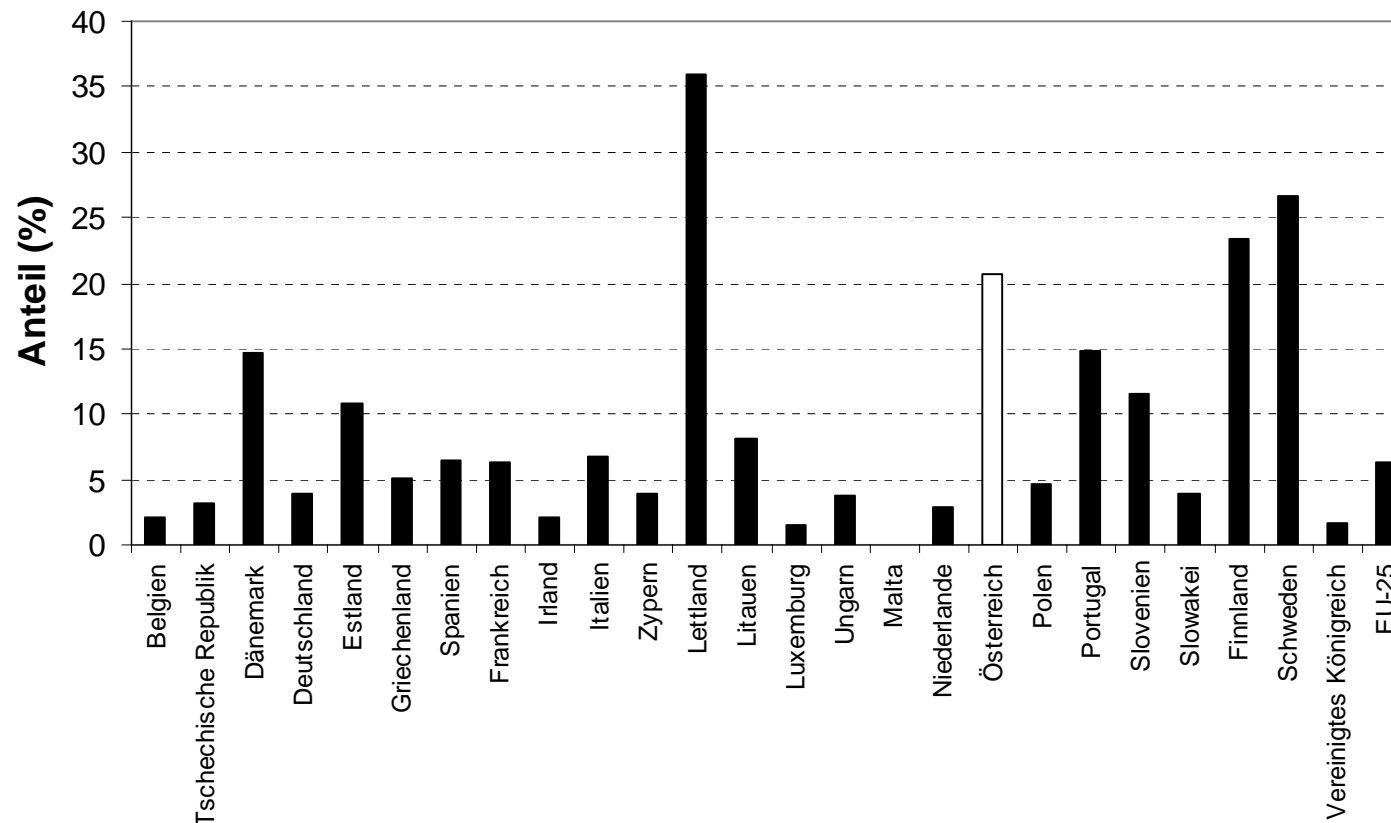
- >> Share of renewable energy for Austria: 34 %
- >> Introduction of a target path for renewable energy from 2011-2020
- >> Regular progress evaluation
- >> Trade in certificates of origin
- >> Sustainability criteria for bio-fuels

# Renewable sources of energy in the EU



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## Anteil erneuerbarer Energien an Primärenergieverbrauch - 2004



Quelle: Energy and Transport in Figures- Statistical Pocketbook 2006

# Sustainable energy production



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- >> Bio-energy is sustainable
- >> Green raw materials grow again every year
- >> Renewable energy is CO<sub>2</sub> neutral
- >> Fossil raw materials are finite
- >> Fossil raw materials lead to massive dependence
- >> Fossil energy is the main cause of climate change

# climate:active programmes



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Goal of the climate:active programmes: fewer CO<sub>2</sub> emissions and increased use of renewable sources of energy

>> In the field of **renewable energy** the following programmes are active:

Biogas, energy wood, heat from wood, solar heat, heating stations, heat pump

>> In the field of energy efficiency there are **building and energy efficiency programmes**:

Federal buildings contracting, ecofacility, energy-efficient enterprises, energy-efficient equipment, climate:active house, climate-active life, top products

>> Especially towards **communities** the following programmes are running:

e5 – Programme for energy-efficient communities, climate:active on the spot

>> In the field of mobility the following programmes are active:

Mobility management for enterprises, MM municipal-regional, MM construction enterprises, , MM school, MM leisure time industry-tourism, MM administration, fuel saving initiative,





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## Energy and climate protection fund

### Implementation of government goals – climate protection and renewable energy

- >> Energy research and development of renewable sources of energy
- >> Development of new technologies towards economic maturity
- >> Support of market penetration of these technologies
- >> Increase in the security of supply with available resources
- >> Strengthening of the business location in the fields of energy and environmental technologies

Allocation of funds: 500 million euros



# MUT – Master Plan Environmental Technology



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## **Renewable energies are a chance for humans and for the economy**

The environmental technology industry is presently making a turnover of about 4 billion euros and creating 20,000 jobs.

Goals:

- >> Doubling of the share in the GDP and the number of persons employed in this branch
- >> Top position of Austria within Europe in the field of environmental technology
- >> Reaching the Austrian climate protection goals
- >> Doubling of the share of renewable energies until 2020

## Austrian goals



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### >> Increase in the share of renewable energies in the total energy consumption

Rise in the use of **alternative fuels**

Further development of **combined heat and power (CHP)** for the purpose of generating electricity and heat.

Conversion of **households** to **renewable sources of energy** and **thermal sanitation – energy check**

**Development** and utilization of **energy- efficient equipment and solutions** (stand-by)

**Key to success: Increase in energy efficiency**

# Implementation of the 34 % goal



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The most important energy scenarios (Baseline) by WIFO (Economic Research Institute) and Primes present the final energy consumption in the year 2020 in a similar way.

	2005	2020	2020
	ÖSTAT	WIFO	PRIMES
Endpoint energy	1158 PJ	1410 PJ	1376 PJ
<b>34 %-goal FE</b>	<b>394 PJ</b>	<b>479 PJ</b>	<b>468 PJ</b>
<i>As of 2005</i>	<i>286 PJ</i>	<i>286 PJ</i>	<i>286 PJ</i>
<b>Demand</b>	<b>108 PJ</b>	<b>193 PJ</b>	<b>182 PJ</b>

The additional demand of 108-193 PJ can be covered by the additional potential of 177-216 PJ. The decisive factor is energy consumption.

Endpoint energy definition according to EU Directive = Value plus losses for heat and electricity distribution plus own consumption of these enterprises.

# Potential in Austria



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	2005	2020
<b>Hydro-energy</b>	<b>129 PJ</b>	<b>157-167 PJ</b> <sup>[1]</sup>
<b>Bio-energy</b>	<b>164 PJ</b>	<b>263-285 PJ</b>
<i>Agriculture</i>	<i>5 PJ</i>	<i>63 - 85 PJ</i>
<i>Forestry</i>	<i>115 PJ</i>	<i>145 PJ</i>
<i>Waste and waste lye</i>	<i>44 PJ</i>	<i>55 PJ</i>
<b>Other renewables</b>	<b>14.3 PJ</b>	<b>84-92.5 PJ</b>
<i>Photovoltaics</i>	<i>0.083 PJ</i>	<i>7.2-10.8 PJ</i>
<i>Solar heat</i>	<i>3.8 PJ</i>	<i>26-28 PJ</i>
<i>Wind</i>	<i>4.7 PJ</i>	<i>26-26.5 PJ</i>
<i>Heat pump</i>	<i>5.8 PJ</i>	<i>25-27 PJ</i>
<b>Total</b>	<b>308 PJ</b>	<b>504-544.5 PJ</b>

In the year 2005 the share in renewable energy amounted to 308 PJ. The increase could thus find a level at 196-236 PJ.

<sup>[1]</sup> The potential assessment was related to the standard year (142 PJ or 39.500 GWh) .



## Austria needs a long-term energy strategy

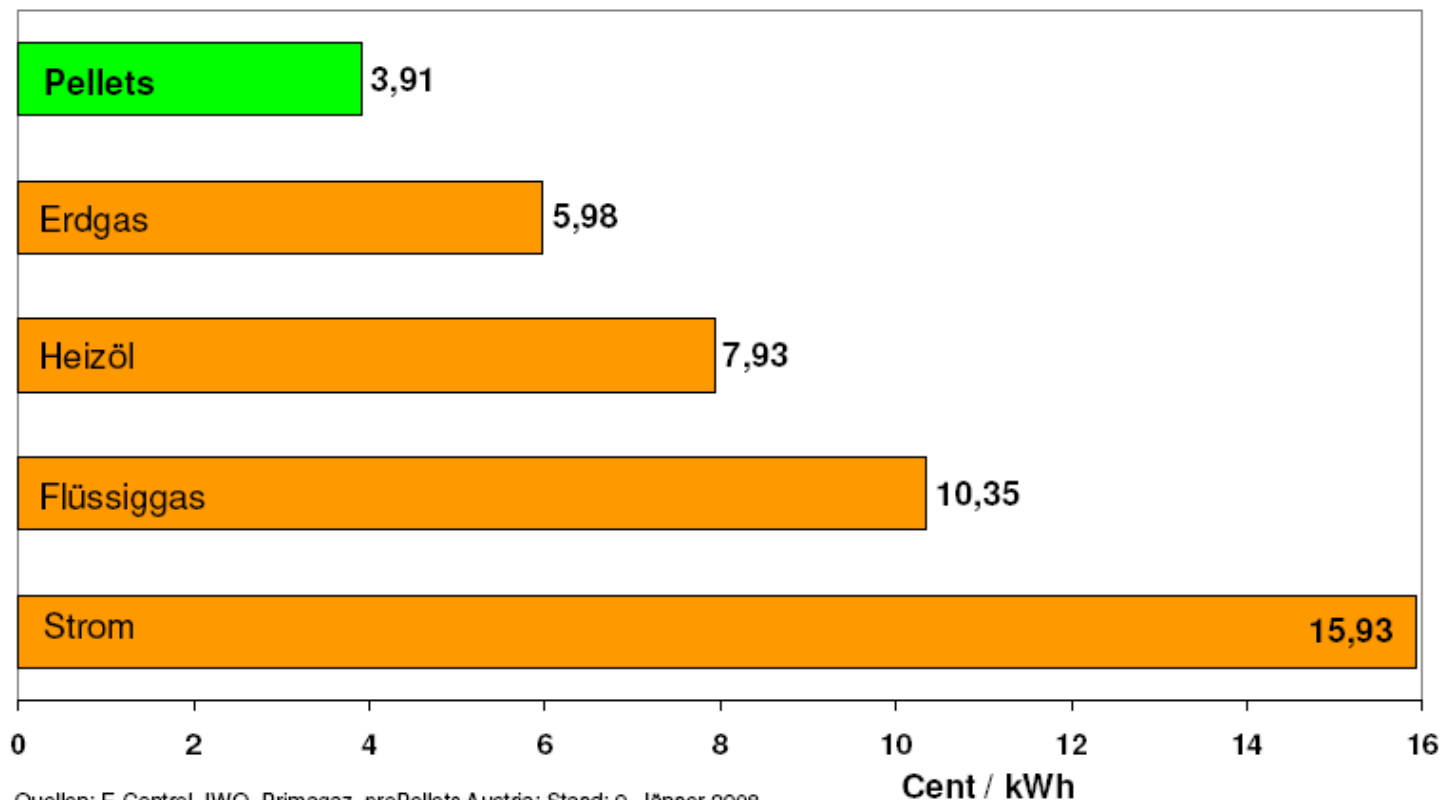
- >> Safeguarding a dynamic growth of the energy efficiency
- >> Working out clear development paths
- >> Analysis of the costs of different measures
- >> Consideration of CO<sub>2</sub> saving potentials
- >> Bio-energy primarily for heat, then electricity and fuels

# Bio-energy creates cost advantages



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## Energieträger im Vergleich: Cent / kWh



# Future of bio-energy



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- >> Traditionally great importance is attached to bio-energy in Austria
- >> Technology leadership guarantees optimum use
- >> Compliance with the utilisation cascade: food – feed – fiber – fuel
- >> In order to reach the political goals (Austria and EU) all renewable sources of energy have to be developed dynamically
- >> Bio-energy makes a valuable contribution to climate protection
- >> Bio-heat relieves households
- >> Bio-energy is sustainable





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Many thanks for your  
attention

