Experiences with the production, distribution and use of biomethane in Upper Austria

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1st Information Day in the frame of the project GreenGasGrids
Bratislava, 15.05.2012

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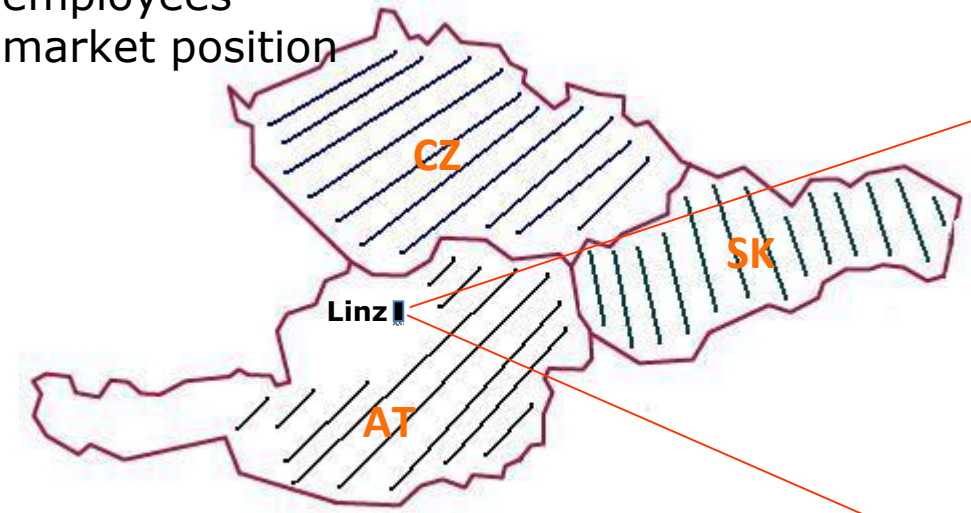
OÖ.GAS-WÄRME
GmbH
Ein Unternehmen der OÖ. Ferngas AG

Company profil OÖ. Gas-Wärme

OÖ. Gas-Wärme GmbH
a 100% subsidiary of OÖ. Ferngas AG

• Turnover	€ 133 Mio
• Gas trading	2.350 Mio. kWh
• customers	64.500
• employees	49 people
• market position	Nr. 1 in Upper Austria



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OÖ Gas-Wärme – Activities in Biogas

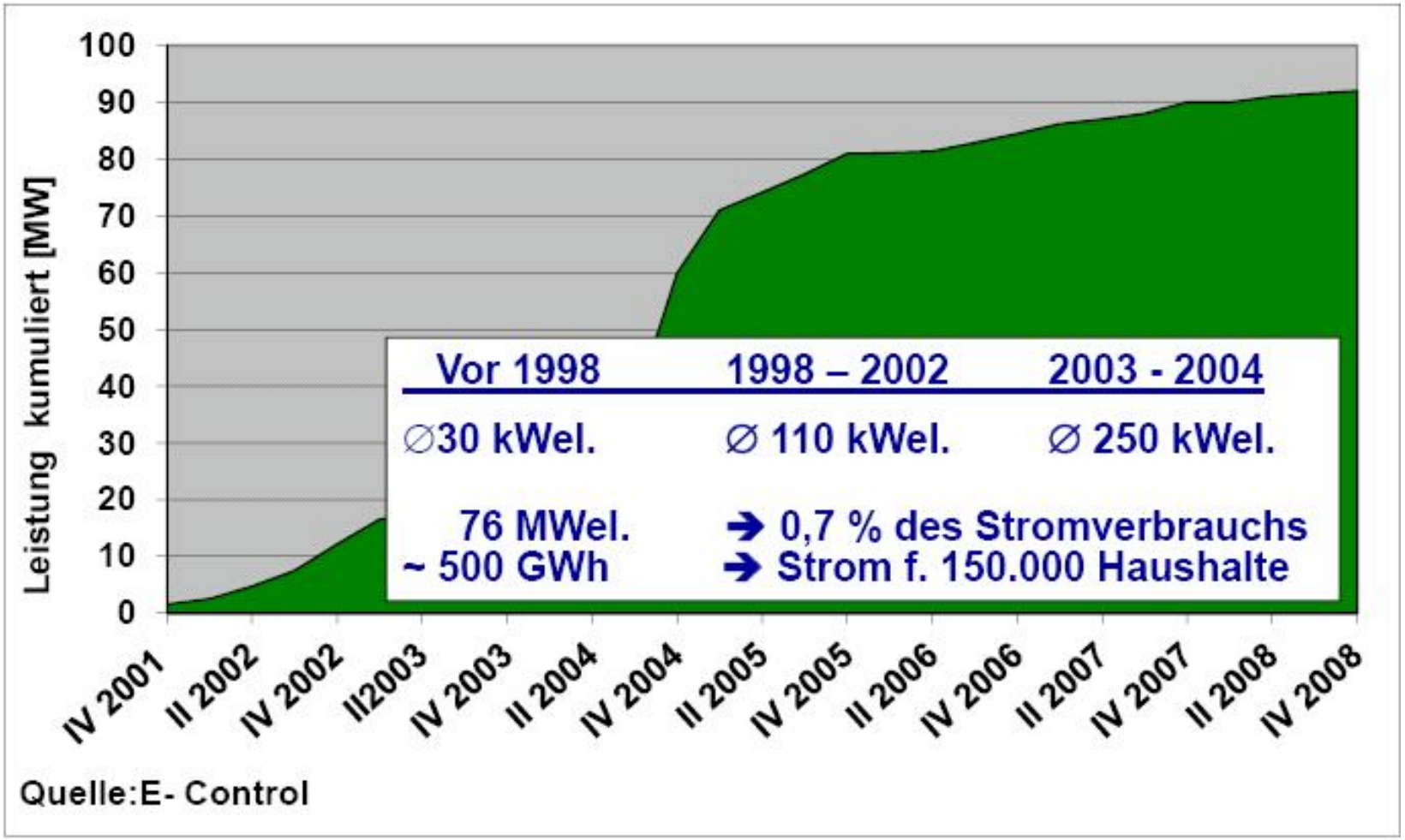
- Planning of biogas plants since 2004
  Planning of 15 plants in Austria
- Construction of the first biomethane upgrading unit in Middle Europe – Pucking (Linz)
- Market entry in Czech Republic – construction of biogas plants - installed electrical capacity – 25 MW
- Market entry in Slovakia– construction of biogas plants - installed electrical capacity – 3 MW

Contents of presentation

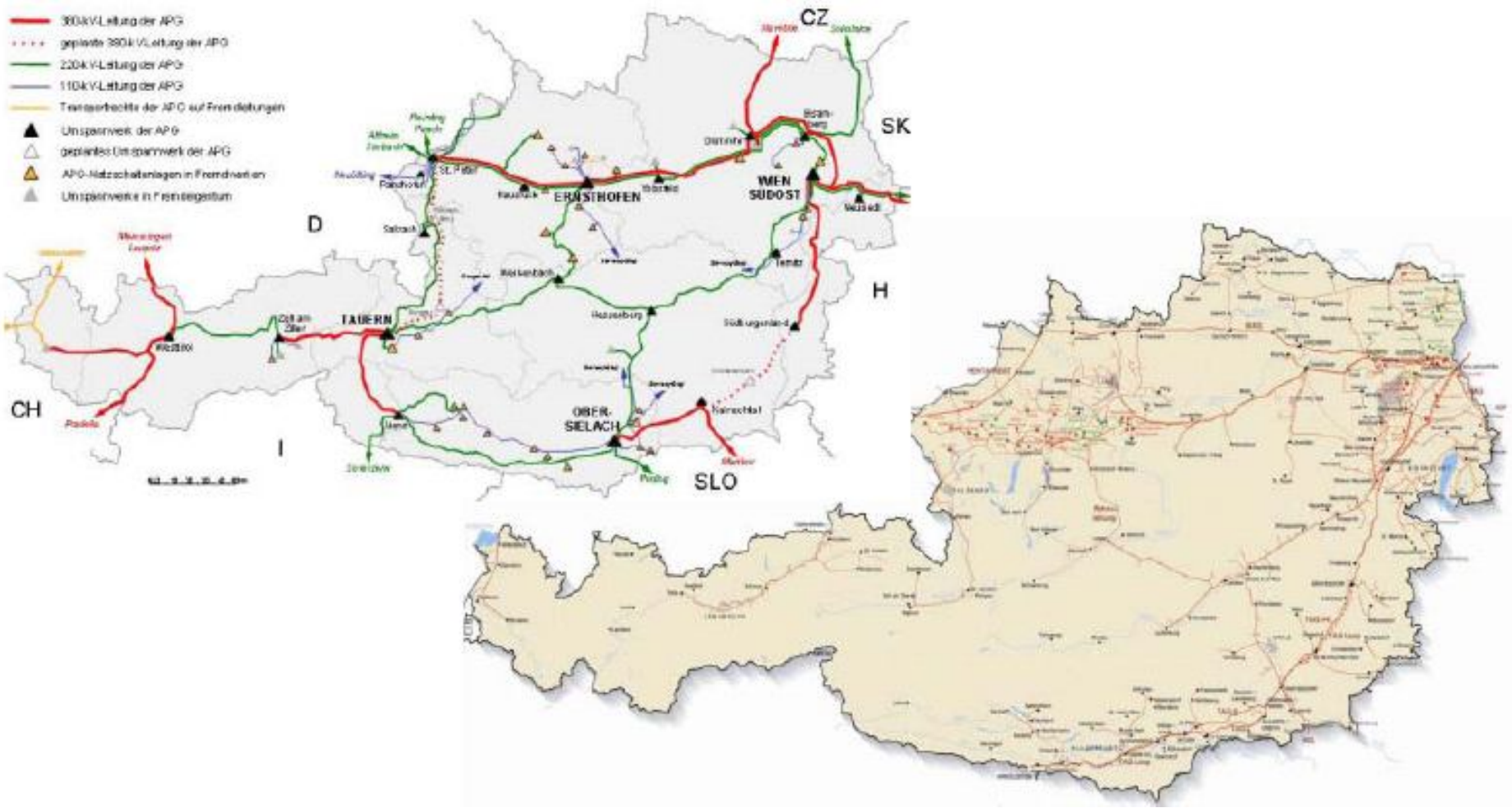
- **Current situation of biogas/biomethane in Austria**
- **Current development in Austria**

  energy strategy, laws, renewable electricity, Labelling
- **Utilization of biomethane**
  - heat
  - electricity
  - fuel
- **View for biomethane**

Development of Biogas in Austria



Energy grids in Austria (gas & electricity)



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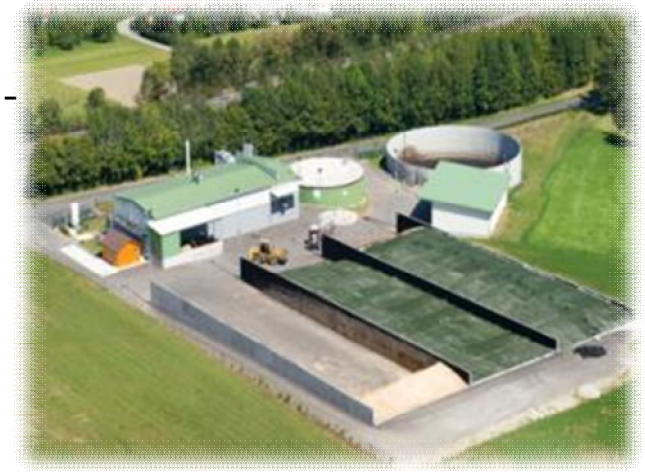
Biogas upgrading units in Austria
grid injection into public grid

- **Pucking - 2005**
  OÖ Gas-Wärme GmbH - PSA - 6 Nm3/h - first upgrading unit in Middleurope
- **Bruck an der Leitha - 2007**
  Energiepark Bruck/Leitha – membrane technology - 100 Nm3/h
- **Schwaighofen bei Eugendorf - 2008**
  GRASKRAFT REITBACH/Salzburg AG, PSA, 40 Nm3/h, (only gras sillage)
- **Asten/Linz - 2010**
  Linz AG, DWW, 380 Nm3/h (3 Mio Nm3/a)
- **Engerwitzdorf - 2010**
  Naturgas Engerwitzdorf GmbH/ OÖ Gas-WärmeGmbH - amincleaning - 140 Nm3/h
- **Leoben - 2010**
  Steierische Gas-Wärme - amincleaning - 160 Nm3/h
- **Steindorf - 2011**
  Salzburg AG, PSA, 150 Nm3/h,
- **Wiener Neustadt - 2011**
  EVN – membrane technology - 120 Nm3/h



Biogas plant in Engerwitzdorf – UpperAustria

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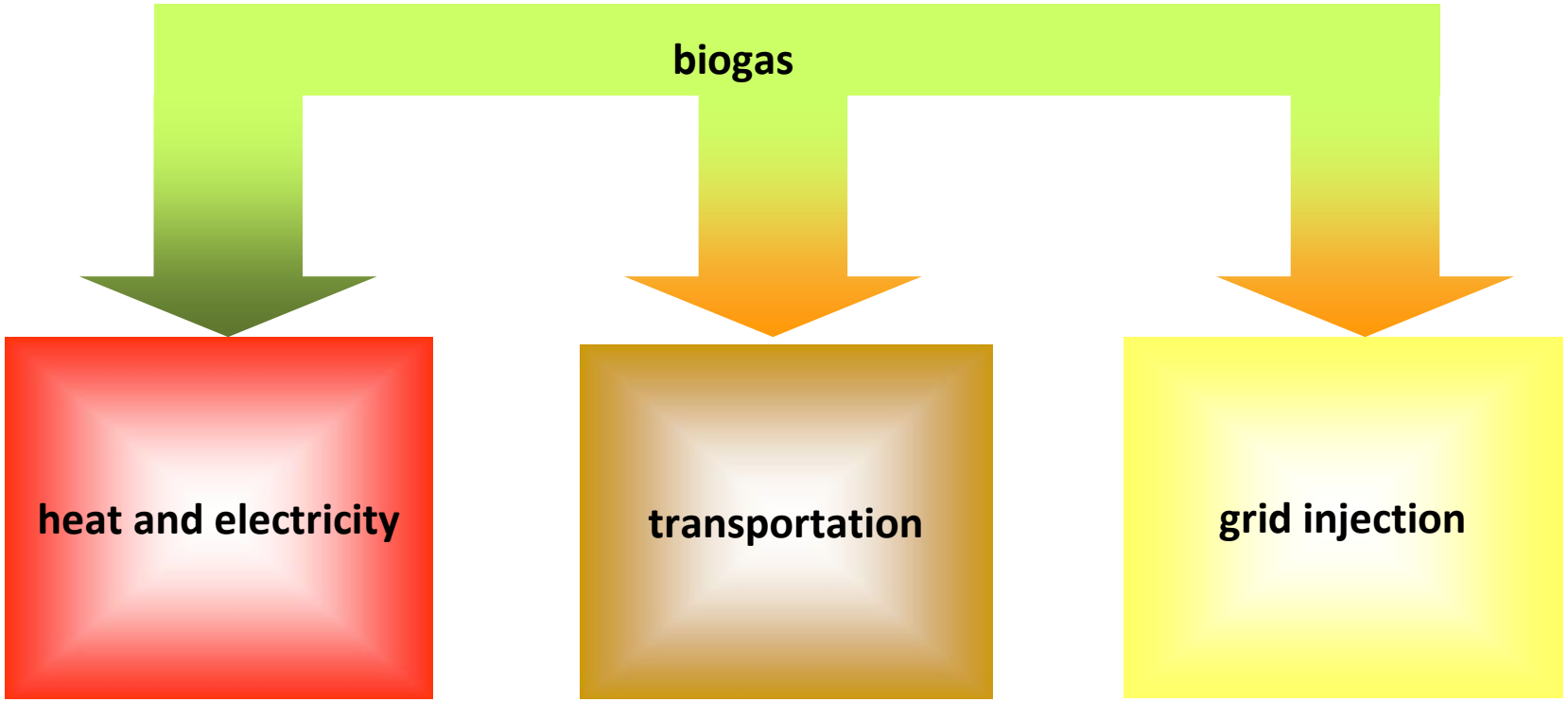
Biogas upgrading units in Austria
NO grid injection into public grid – Micro grids/fuelstation

- **Margarethen am Moos** - EVM, membrane technology
  CBG fuelstation - 100% Biomethane as fuel
- **Rechnitz** - Entsorgung Stipitz, PSA, CBG fuelstation
- **Güssing** - CBG fuelstation ; micro grid for biomethane
- **Grüne Bioraffinerie Utzenaich** - Oö. Bioraffinerie

Anlage in Margarethen am Moos

Applications of Biogas



- heating
- eletricity
- transportation

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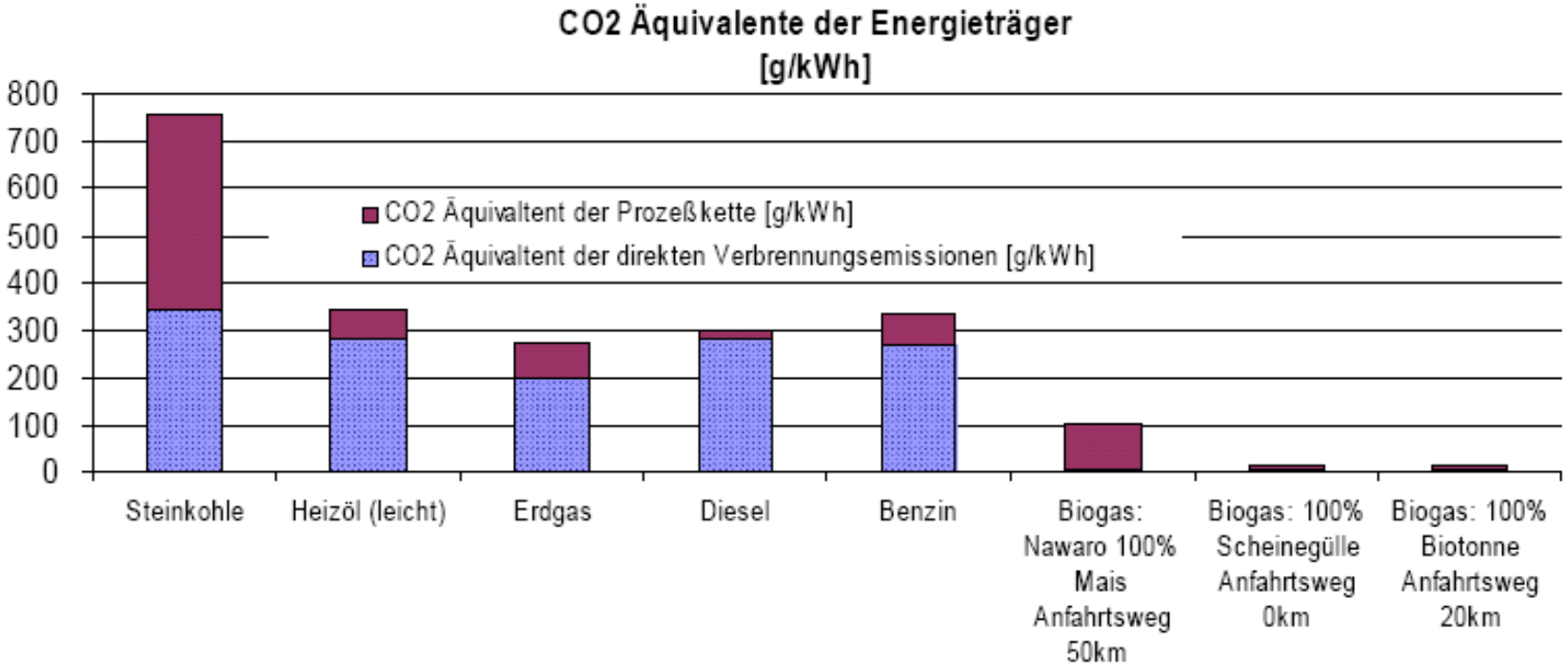
Biomethane – comparison CO2 equivalent



Source: ARGE Kompost&Biogas

Biomethane – highest efficiency in renewable

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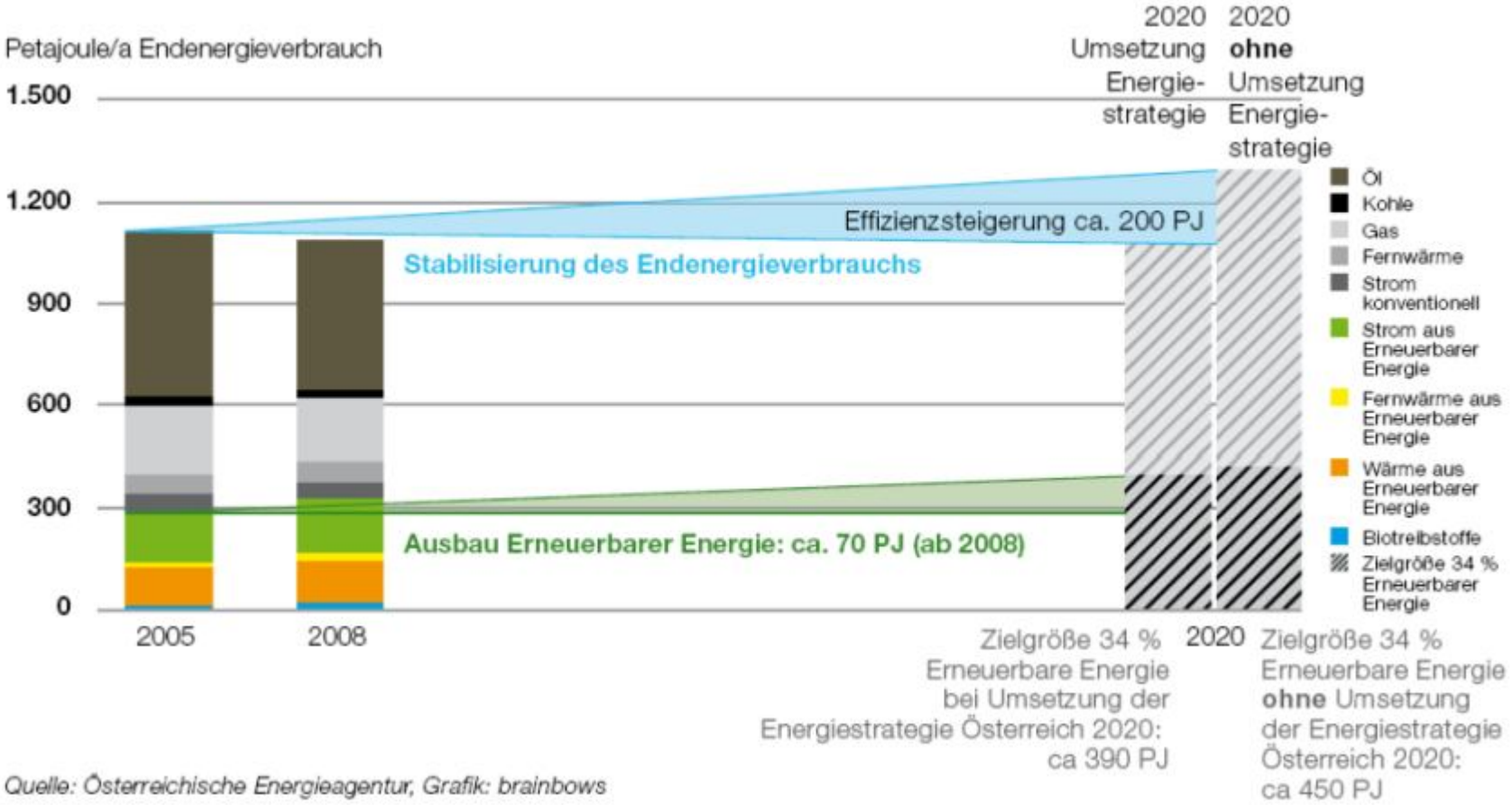
Model of energy strategy - Austria



Quelle: Österreichische Energieagentur, Grafik: brainbows

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Biomethane in energy strategy of Austria (1/2)

Use of biomethane in all kind of applications by providing instruments in demand.

- Invest fund and support for building plants
- Predictable framework and funding for raw material (renewable crops, organic waste)
- Defaults in the housing subsidy for the use of biomethane gas mixtures as renewable energy sources in the field of space heating

Biomethane in energy strategy of Austria (2/2)

- Rules for electricity and heat, which is produced of biomethane out of gas grid.
- Creating an attractive CNG biomethane fuel through tax exemption for mobility from CNG
- Acceptance for biomethane in the GWG (Natural Gas Act) – laws for gas

GWG 2011 – Natural Gas Act 2011

Natural Gas Act 2011 contains references to biomethane

- increasing use of the potential of biomethane are in the goals of the GWG anchored
- Rules for grid injection of biomethane
- Full grid access for biomethane feed-in, if gas quality and interoperability is not compromised
- Introduction of traceability
  - Basis for product labeling
  - Limit for r obligatory labeling utility
  - Regulatory power of E-Control for gas labeling

Green Electricity Act 2011

The green electricity act refers to biogas which is upgraded to biomethane.

- The conversion to renewable electricity gets supported rates between 13 cents and 16.5 / kWh
- For the injection of biogas into the natural gas network is a technology bonus of 2 ct / kWh provided.
- For biogas fired CHP plants is a surcharge of 2 cents / kWh provided
- Obligatory documentation and evidence

  as a further basis for the traceability.

Electricity production from biomethane

Efficient use of electricity through biogas

- CHP where heat is also required
- High reliability due to existing infrastructure
- existing funding regime for renewable electricity
- Better conditions created by the Green Electricity Act 2011

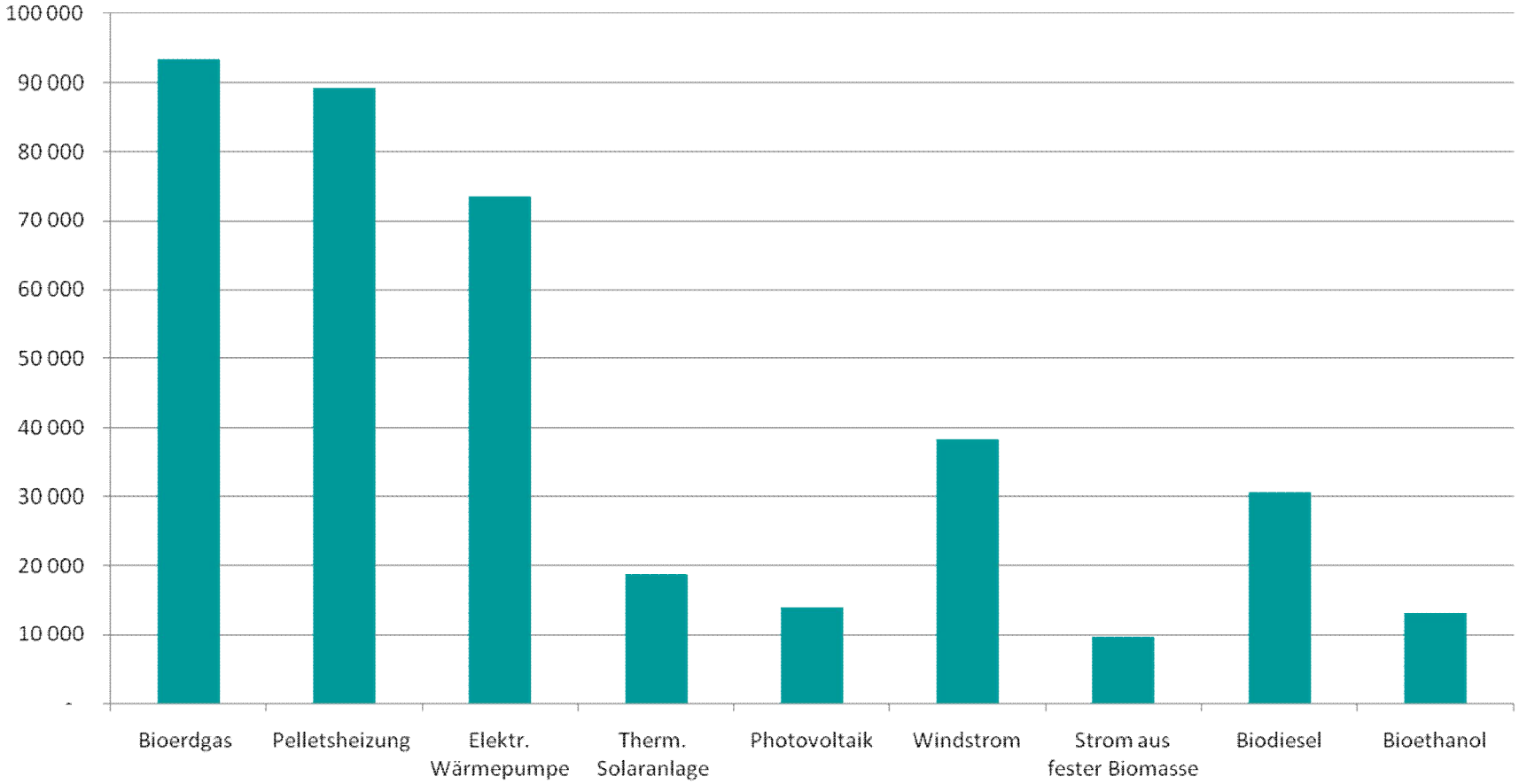
Heat utilization with biomethane

The room heating market as a huge potential for biogas

- About 1.3 million customers use natural gas in Austria
- High quality and competitiveness of natural gas/biomethane
- Consideration of natural gas-mixing products in the housing subsidies
- uniform conditions for hole Austria in new acts

Heat utilization with biomethane

Amount of power produced in kWh for EUR 1000, - subsidy



Quelle: Energieinstitut JKU Linz – Studie Vergleichende Betrachtung von Förderkosten

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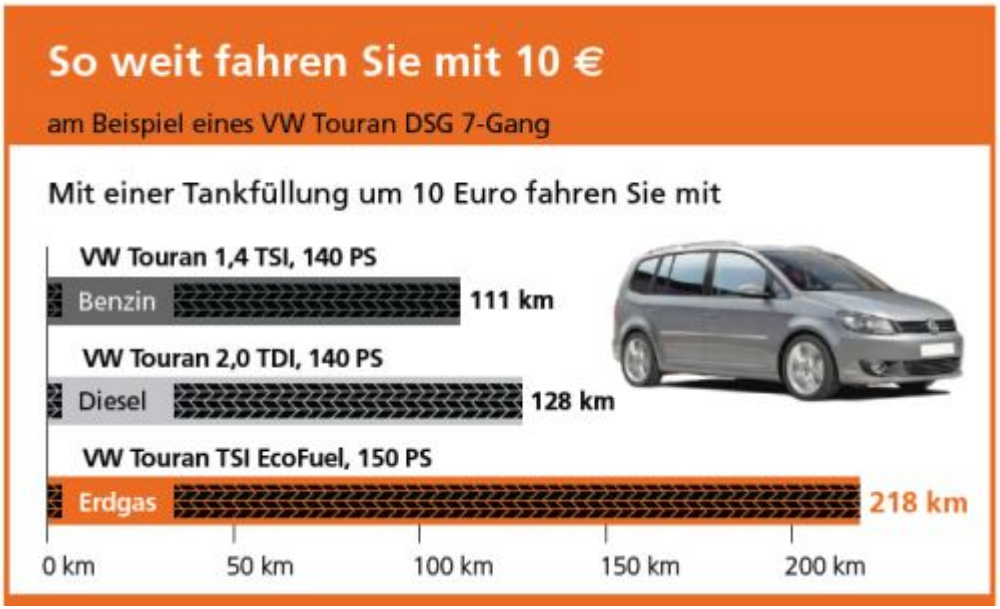
CNG-stations in Austria

Number of CNG fuelstations in April 2012: **173**

CNG-vehicles

In Austria about 6.000 CNG cars

Worldwide more the 11 Mio. CNG cars.



Quelle: OÖ. Gas-Wärme

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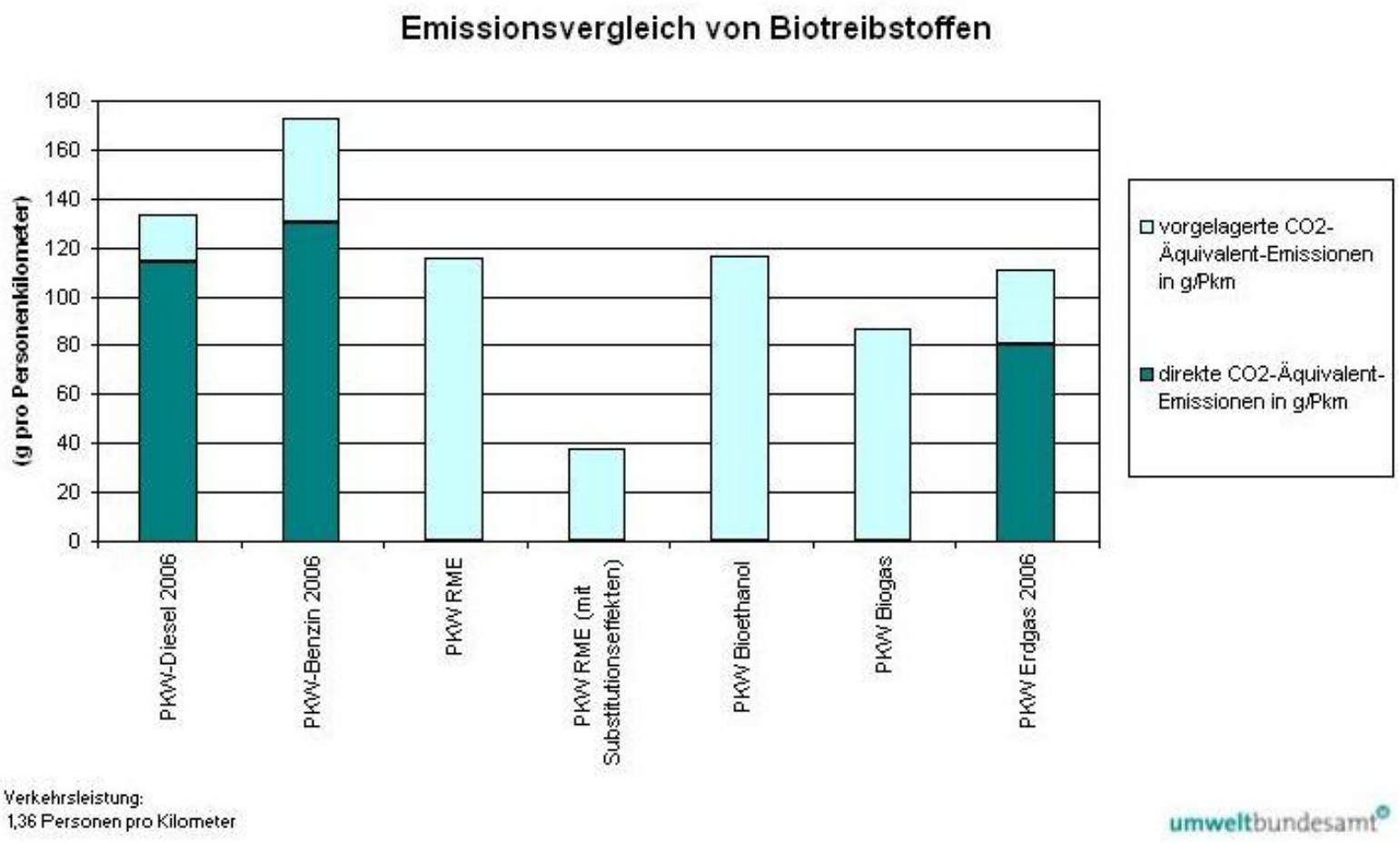
Stable framework for CNG

5-point action program CNG / Bio-CNG

- Creation of investment protection through fiscal environment
- Promoting the use of biomethane as a fuel
- Increase in stocks of CNG vehicles
- Promotion of the development of infrastructure
- Improvement of technical and legal framework for the biogas feed

Natural Gas and biomethane as fuel



umweltbundesamt

Quelle: www.umweltbundesamt.at/umweltschutz/verkehr/kraftstoffe/biokraftstoff/oekobilanz_biokraftstoffe

Biogas/Biomethane – Quo vadis?

Requirements for success

- Creating conditions that provide investment security (taxes, feed-in tariffs)
- Regulatory policies on competition aspects
- Competitiveness and quality of natural gas must not be interfered by grid injection of biomethane.
- Research into the optimal resources (renewable raw materials, residues, etc.) for production of biogas
- Stabble development of the market model
- Joining forces (agriculture - gas industries)

Political commitment necessary!

Nothing is more powerful
than an idea whose time has come!
(Victor Hugo)

Johannes Mayr

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