



"INOGATE Technical Secretariat & Integrated Programme in support of the Baku Initiative and the Eastern Partnership energy objectives" Project

**BUILDING PARTNERSHIPS FOR
ENERGY SECURITY**

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INOGATE Study Tour/Workshop

Energy Efficiency & Renewable Energy



" EE/RES financing, terms and technologies, European experience, success stories"

" Financial support facilities and projects available for EE/RES in Austria"

Bank BelVEB OJSC

09-13 December 2013 / Minsk, Belarus

Source: Margit Kapfer - Head of Climate Change and Energy, Denkstatt

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Content of the presentation



- **Presentation part 1: EE/RES Financing, Terms and Technologies, European Experience, Success Stories**
- Presentation part 2: Austria: Financial Support Facilities / Projects available for EE/RES

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Case Studies Austria (1)



Thermal Insulation for an Open – Air Museum

- Insulation of the façade and renovation of the existing box-type windows → Decrease in energy index of the building to 44 kWh/m² /yr.
- **Annual fuel oil requirement to be reduced by ~ 25%.**



Case Studies Austria (2)

Biomass-fired heating plant for Alpine Zoo

- 120-kW **wood-chip-fired heating system** supported by Climate Austria to be installed, replacing **an oil-fired heating plant**.
- Change of boiler → saves ~21,000L of fuel oil annually, decreasing ~ 1,140t of CO₂ over the lifetime of the heating system.



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Case Studies Austria (3)



The German Alpine Association (DAV Section Augsburg)

- Newly installed new energy supply system, a **PV system**.
- → use of existing diesel engine reduced
- → reduction of noise load and 60t of CO₂ over service life (4 years)



Case Studies Austria (4)

District heating system based on Biomass

- Unused agricultural building converted into a boiler house. The heat generation provided by a 10 kW **biomass-fired boiler**.
- The heat is conveyed to the customers by means of **heated water flowing** through a 220 meter **district heating system**.



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Case Study LIFE-projects: BELGIUM Biogas



BIOGASTIL (AlcoEnergy)

- Objective: To develop an innovative means of producing biogas by treating thin stillage.
- The beneficiary will
 - ✓ integrate a prototype biogas production unit into an existing biofuel production unit and
 - ✓ prove that the technique can be applied by other bioethanol plants under similar process conditions.
- Relevant to climate change.



Case Study LIFE-projects: GERMANY



DRIP (RWE Deutschland AG)

- Objective: To reduce carbon dioxide emissions
- Method: Integration of renewable energy sources and contribution to energy efficiency in the electricity grid by taking advantage of the **potential of large commercial and industrial customers to be flexible in their energy consumption.**
- The project is based on the concept of Demand Response (fluctuating electricity demand to the grid)



Case Study LIFE-projects: SPAIN Ceramics



CERAMGLASS

- Objective: To reduce the environmental impact caused by thermal treatment of ceramics
- an innovative laser-furnace technology
- effect of reduction in the raw material consumption; replacement of toxic materials
 - → minimization of CO₂ and other greenhouse gases;
 - → reduction in energy consumption of the process.



Case Study LIFE-projects: SPAIN Real Estate



PLATAFORMA CENTRAL IBERUM (Urban Castilla La Mancha, S.L.)

- Objectives:
 - 1st industrial estate in Europe based on the principles of sustainable development
 - Development of industrial areas, integrating all environmental impacts

- Focus on:
 - energy savings,
 - creation of woodland areas and
 - management of the water cycle.



Case Study: SPAIN Autonomous Office



The Autonomous Office (TSK Electrónica y Electricidad S.A.)

- Objectives:
 - Construction of a green, **energy-autonomous office building** to operate without connection to an electricity grid.
 - integration of principles of bioclimatic design and renewable energy technologies → minimising the environmental footprint of the construction and its users.
- It thus hopes to provide a sustainable model in terms of energy demand and its contribution in reducing CO₂ emissions.





Case Study: FRANCE Hybrid telecoms-broadcast transmitting station

ZENITTHYS (Thomson Broadcast)

- Objective: Development of an innovative “green” **hybrid telecoms-broadcast transmitting station concept based on recent advances in electronic devices, signal processing** and renewable technologies to achieve major environmental gains.
- Drastic reduction of carbon footprint of telecoms-broadcast transmitting stations by reducing energy consumption, using renewable energy sources and reducing the number of relay stations.



Content of the presentation



- Presentation part 1: EE/RES Financing, Terms and Technologies, European Experience, Success Stories
- **Presentation part 2: Austria - Financial Support Facilities / Projects available for EE/RES**

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Austria: Financial Support Facilities & Available Projects for EE/RES



Overview of content

- European framework
- The Austrian energy strategy
- EU Energy Efficiency requirements
- Overview on Financial Support Facilities in Austria
- Best practise examples in Austria



European conditions



- ✓ 20% renewable energy in the year of 2020
- ✓ 20% CO₂-reduction until 2020
- ✓ 20 % energy efficiency until 2020

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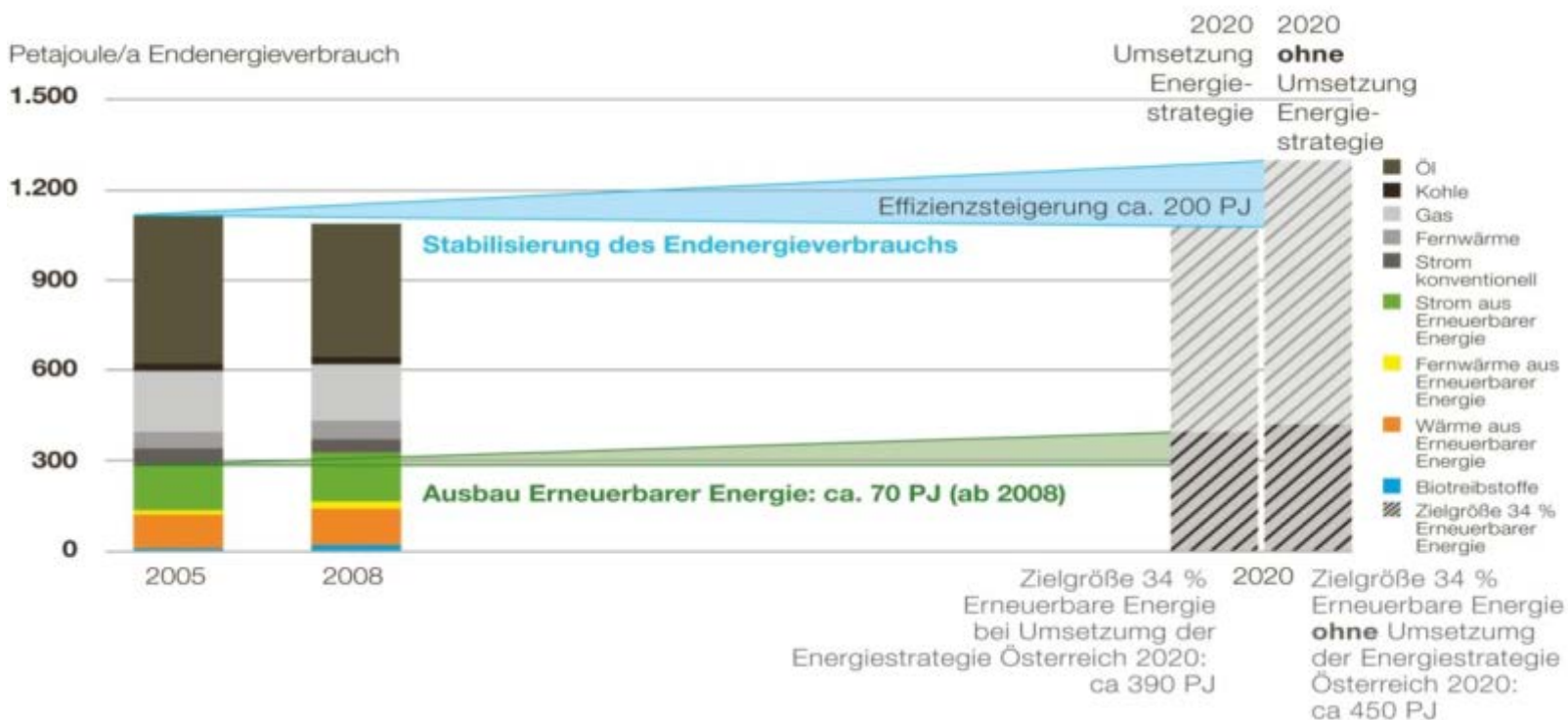


The way and conditions to the goal: The Austrian energy strategy



- 34% renewable part
- 20% increase of the energy efficiency
- CO₂-reduction: 16% in non-ETS area & 21% in ETS area

Ziel: Endenergieverbrauch auf dem Niveau von 2005 stabilisieren



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The EU-energy efficiency guidance

- ✓ Commitment to energy efficiency goal for 2020
- ✓ Engagement system of energy efficiency
- ✓ 3% restoration rate annually
- ✓ Energy audits/Energy management systems
- ✓ Requirement to determine usage and information for deduction
- ✓ Sanction
- ✓ Potential-analysis for KWK
- ✓ Availability to systems regarding accrediting and certification
- ✓ Improvement of information and training



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Austria: Financial Support Facilities & Projects Available for EE/RES



Kommunalkredit (KPC)

- **Manages the environmental support schemes** on behalf of the Environment Ministry, the Climate & Energy Fund and Klima:aktiv mobil
- Regions, companies and private persons
- Funding for **investment** for EE & RES (plus water, waste etc.)
- Examples for financial support include:
 - Thermal restoration of old buildings and support for high efficient new building (zero emissions)
 - Energy efficiency in companies and authorities



Austria: Financial Support Facilities & Projects Available for EE/RES



Austrian Research Promotion Agency FFG

- ✓ **New Energies 2020** program supports innovations.
- ✓ **Building of Tomorrow Plus** program → buildings and housing
- ✓ Transnational energy research projects with International Energy Agency (IEA), EU FP7 projects etc.
- ✓ “Smart city” or a “Smart urban region” in Austria.
- ✓ **“Electromobility’s Technical Beacons”** on sustainable mobility & energy supply
- ✓ **denkstatt** project: “Bio refinery”



Austria: Financial Support Facilities & Projects Available for EE/RES



Climate & Energy Fund

- “Hybrid” between Investfunding / technology support
- Aims to support Pilot projects and programs
- Examples for financial support :
 - Research (e.g. denkstatt project “VCM”)
 - Renewable Energies and Energy Efficiency
 - Model Regions, Construction and Sanitation
 - **Photovoltaic funding program:** 36 Mio. EUR reserved, Continuous funding from 12.4.2013 to 30.11.2013



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Example 1: Bundesrechenzentrum



Modernisation of lighting control

- **Environmental benefit:** Energy savings of ca. 70 MWh (~ca. 18 tons CO₂)
- **Financial benefit:** Saving of EUR 7,700 per year

Further measure: Freecooling server room, heat pumps



IT für Österreich



Example 2: Bank Austria Technical Center



Free cooling

- Free-Cooling System for room cooling, reduction of energy demand via usage of outdoor air until 15° Celsius
- **Savings:** ca. 12%, or 115,000 Euro/year



Example 3: Employee motivation programs – Energy efficiency

- Up to 20% of the energy costs can be saved through training of consciousness and changing of user patterns
- Best Techniques need to be combined with **intelligent application and improvement of users!**
- Organisational measures and actions to be taken to train employess – with little budget!



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