Energy Research in Austria

Austrian Programme on Technologies for Sustainable Development

September 2006

Austrian Federal Ministry of Transport, Innovation and Technology
Subprogrammes of the Austrian Programme on Technologies for Sustainable Development

Building of Tomorrow  1999 - 2007
Support of research and development projects concerning energy efficiency, the use of renewable energy sources and the use of ecological building materials in the building sector. The results obtained will be implemented through trend-setting demonstration buildings.

Factory of Tomorrow  2000 - 2008
Support of research and development projects in the field of production processes, product service systems and renewable resources. The results will be put into practice through trend-setting demonstration projects.

Energy Systems of Tomorrow  2003 - 2009
Support of research and development projects concerning renewable energy sources, efficiency, system innovations and strategies. The results will be realised through trend-setting regional model systems.
at:sd features

- calls for proposals oriented towards the overall goal of the programme
- incentives for the generation of future-oriented RTD projects
- support by programme management before and after the call
- evaluation of project proposals by an international jury
- dissemination of the results and support through accompanying measures
basic research of strategic importance

strategic concepts and cooperative research studies with active involvement of companies

concept-driven development of components and advanced technologies

demonstration projects

accompanying measures (contests, qualification schemes, support for new enterprises,...)
## Project Types

### R&D-levels of the EU

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### Attribution of the Project types at:sd to the R&D-Levels of the EU

Eine Kooperation des Bundesministeriums für Verkehr, Innovation und Technologie mit der Forschungsförderungsgesellschaft

5 FFG
Management structure

• Program Owner:
  Austrian Federal Ministry of Transport, Innovation and Technology
  Division of Energy- and Environmental Technologies
  Program Development, Strategies, Decision Making, Funding

• Program Management:
  Austrian Research Promotion Agency
  Project Selection (internat. Jury), Project Controlling and Funding

• Thematic Consulting and Project support:
  Umbrella Managements
  Thematic / Strategic Program Support, Project Support, Networking
Status Quo (Jan 2006)

- Building of Tomorrow
  - 5 calls for proposals
  - 176 projects financed
  - Financing of the projects: 22 Mio. Euro

- Factory of Tomorrow
  - 4 calls for proposals
  - 123 projects financed
  - Financing of the projects: 15 Mio. Euro

- Energy Systems of Tomorrow
  - 2 call for proposals
  - 85 projects financed
  - Financing of the projects: 11 Mio. Euro

384 financed projects: 48 Mio Euro
Building of Tomorrow

Accompanying Measures:
Networking and Know-how-Transfer

Service and User-Related Aspects

Building of Tomorrow

Solar Low Energy House
Passive House
ecological building materials and systems

Renewable Energy Sources
Energy Efficiency
Renewable Raw Materials, Building Ecology

Comparable Costs

R&D-Projects

Technological development → Applied research → Fundamental studies
Facade Collectors

GREENone TEC & AKS DOMA Solartechnik in cooperation with AEE Intec

- basic activity
- technology development
- demonstration

multiple functions:
- thermal collector
- improved heat insulation
- weather protection for the facade
- attractive design
Straw house in passive house standard

- Office & exhibition building
- Wall system: wood construction
- Insulation material: straw bale
- Development of a solar cooling system

Use of renewable resources

Use of agricultural by-product
Ecological alpine refuge hut, eastern part of the alps, Hochschwang area, Styria (2153 m)

- autarkic building maintenance
- collecting rain water from roof
- warm water produced by flat thermal collectors integrated in the facade
- electricity generated by 70m² of facade integrated photovoltaic panels
SOL4 office- and seminar-center Eichkogel
(MEDILIKKE IMMOBILIEN- UND BAUTRÄGER GesmbH)

- extreme energy-related and ecological standards in an office building
- adobes as inner wall
- prefabricated and straw-insulated wall-construction (consists of straw)
- an innovative concept of living and working in addition to room for recreation
- comprehensive life cycle analysis
- recyclable building components
- participation of tenants in planning and construction process
Factory of Tomorrow

R&D-Projects

- Fundamental studies
- Applied research
- Technological development

Accompanying Measures:
- Networking and Know-how-Transfer

Demonstration Projects:
- Model Companies
- Model Processes
- Model Products

Technologies and innovative approaches to manufacturing processes
Use of Renewable Raw Materials
Products and Services
„Green bio-refinery“

Objectives:

• development of new products from renewable raw materials

• Strengthening of regional economies.

• grass as energy source and industrial feedstock (biopolymers from lacto acids and proteins)

• grassland biomass used in its entirety (zero waste process).
Utilisation of renewable primary products

Biodiesel production

• immobilization of lipase on corn cob granulate
• new key-technology for biodiesel production (an enzymatic process)

Colours and dyes

• Development of plant dyes for the textile industry
• Use of residue material from the wood and food processing industries
Energysystems of Tomorrow

Accompanying Measures: Networking and Know-how-Transfer

R&D-Projects
- Fundamental studies
- Applied research
- Technological development

Energy Systems
- Renewable Energy Sources
- Energy Efficiency

Model Systems
- Demonstration Regions

Integration of Austrian Regions
SUPOSS – Sustainable Power Supply for Supermarkets

- technical and business concept and strategy for a sustainable power supply of supermarkets and local consumers
  - supply of heat, electric power and cooling energy on the basis of solar energy and biomass
- State-of-the-art analysis
- Concept development
- Requirement specifications
- Commercial feasibility
Examples II

Self-sustaining Energy supply of the city Güssing
Exclusively with regional, renewable Resources

Self-sustaining Modell Güssing
First Biogas plant feeding into the natural gas grid in Austria

- biogas plant using regional resources
- major regional and national gas suppliers involved (OÖ FERNGAS AG, Erdgas Oberösterreich)