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**EU Energy Policy – Direct supports
to the application of geothermal
energy**

28 September 2007, Budapest



EU's energy import dependence

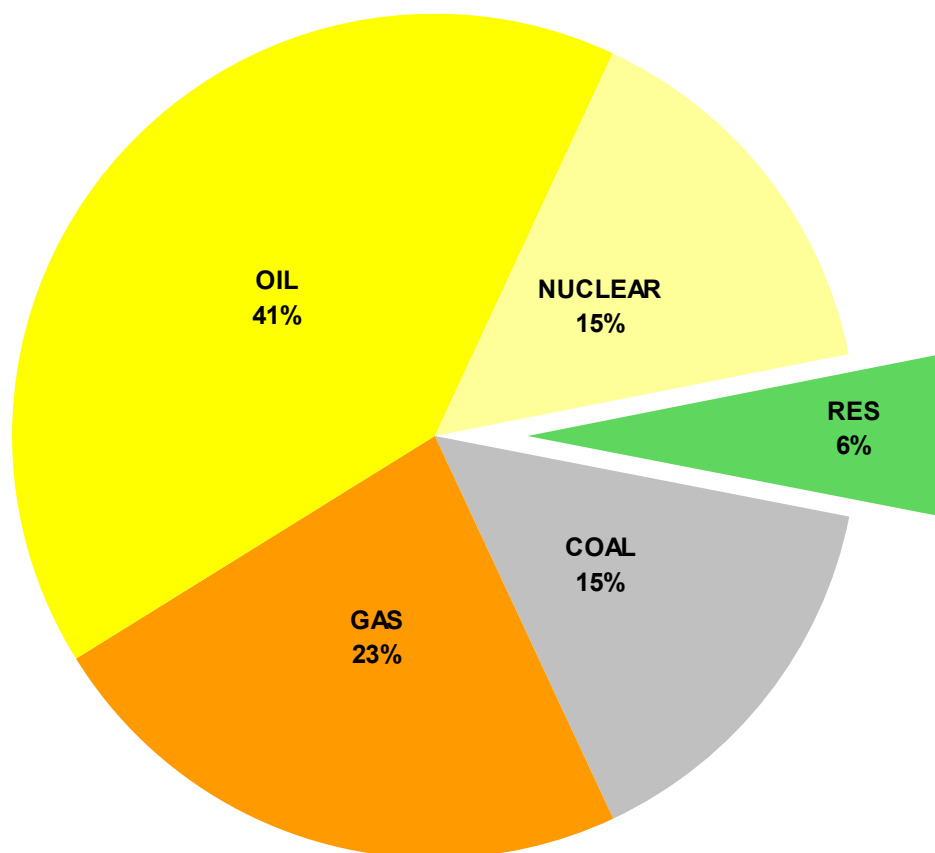
EU's import dependence in 2005: **48%**

- Oil: 76.6%
- Gas: 53.0%
- Coal: 35.4%
- Uranium: 100%

According to the pessimistic estimates
in 2030: **71%!**



EU-25 energy mix in 2005



RES: Renewable energy sources by 2010 12%



New energy policy of the EU

Aim: Development of a European Strategy for sustainable, competitive and safe energy supply

6 objectives:

1. Involvement of gas and electric power into the internal market of the EU;
2. Provision of safe energy supply;
3. Establishment of an optimal energy mix;
4. Integrated approach to the fight against climate change;
5. Encouragement of innovation on the basis of a strategic energy technology plan;
6. Establishment of a uniform energy foreign policy.



EU's energy packages

Package 1: (19 October 2006) **Energy Efficiency Action Plan.**

Energy consumption -20% (75 individual proposals)

Package 2: (EU summit in March 2007) **3x20% +10% RES, Energy efficiency, CO₂, + bio fuels**

Package 3: (01 July 2007) to eliminate the obstacles, monopolies in the competition of the gas and electric power sectors (production vs. transmission networks)



Renewable energy sources



Biomass: field crops, forestry and agricultural by-products;



Water: kinetic energy of water;



Geothermal: energy of terrestrial heat;



Wind: air movement;



Oceans: ebb and flow, waves, flows;



Solar: light and heat;

Photovoltaic: light and electric.



EU's objectives in renewable energy

Objectives for 2010 (EU15):

- × Rate of renewable energies 12% from total energy consumption;
- × Rate of renewable energies 22.1% from electric power consumption;
- × 8% reduction of the emission greenhouse gases;
- × Use of bio fuels in 5.75% in petrol- and diesel-driven trucks.

Objectives for 2020 (EU27):

- × Rate of renewable energies 20% from total energy consumption;
- × 20% increase in energy efficiency;
- × 20% reduction of the emission greenhouse gases;
- × Use of bio fuels in 10% in petrol- and diesel-driven trucks.



EU supports for RES

"Hardware"-type investments, technological research and development programs, introduction of new energies and infrastructure

- **Structural and Cohesion Fund**
 - KEOP - 4.1 19.09.2007 Support for the generation of heat and/or electric power (HUF 13.3 billion in 2007) – In 2007-13, EUR 7.6 billion (!) is available in grant applications for Environment and Energetics
- **Research framework programme 7**
- **LIFE+**

"Software"-type support

- **IEE** – Intelligent Europe Energy Program. Main Community initiative for non-technological (theoretical) energy projects.

Other sources:

- **JESSICA, CONCERTO, INTERREG,...**



Research FP 7

- Support of the EU for research purposes;
- In the context of EU's Research FP 7 (2007-2013) launched this year, four areas have been designated:
 - Cooperation, Ideas, People, Capacities;
- In the **Cooperation** Chapter there are 11 additional topics, including **Energy**;
- Within Energy, a subchapter is the support to researches related to **2.4 Geothermal energy**.
- For the entire FP 7, the European Parliament approved **EUR 53.27 billion (!)** (more than HUF 13,000 billion).

Further information: <http://cordis.europa.eu/fp7>



LIFE+ 2007-2013

The new **LIFE +** programme (L'Instrument Financier pour l'Environnement - Promouvoir L'Union Soutenable):
EUR 1.9 billion in 2007-2013

To embrace the current LIFE-Environment, LIFE-Nature, Forest Focus and Urban Programmes, as well as other support funds announced by DG Environment.

Eco-innovation programmes announced within FP Competitiveness and Innovation.



INTELLIGENT ENERGY – EUROPE (IEE) PROGRAMME

- **Intelligent Energy - Europe Programme (IEE)** established by the joint resolution of the European Parliament and the European Commission (1230/2003/EC) on 26.06.2003
- IEE - 350 European projects in 5 areas.
- **Renewable energies:** Electric power generation, heat generation, alternative fuels, small number of applicants.
- **In 2007, EUR 52 million** can be withdrawn with 75%+ support rates.



Renewable energy

Intelligent Energy  Europe

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pannonplast



IEE Geothermal energy project

Currently, 7 support funds can be employed in the field of geothermal and heat energy

Legal, political environment: K4RES-H
GTR-H

Market transformation: WasteWaterHeat
ProHeatPump
IGEIA

Influencing behaviour: Groundreach

Training: EARTH





- **CONCERTO** is an initiative of the Commission to support sustainable energies on the local level in the context of **FP6**. **DG Energy and Transport** is responsible for the programme.
- Currently, a total number of 9 projects are being implemented in 28 local communities; all of them head for the highest possible level of self-supplying energy management.
- The core objective of the European initiative is the involvement of all the players (politicians, designers, energy suppliers and inhabitants) in the provision of decentralized energy supply and the development thereof with the use of renewable energy sources, with respect to energy efficiency in all the sectors.



Jaspers-Jeremie-Jessica

JESSICA: Joint European Support for Sustainable Investment in City Areas

JESSICA is an initiative of the European Commission in cooperation with the [European Investment Bank \(EIB\)](#) and the [Council of Europe Development Bank \(CEB\)](#) for the popularization of sustainable investments (PPP) in urban areas.

http://ec.europa.eu/regional_policy/funds/2007/ijj/jessica_en.htm



**An example from
the EU**

GERMANY

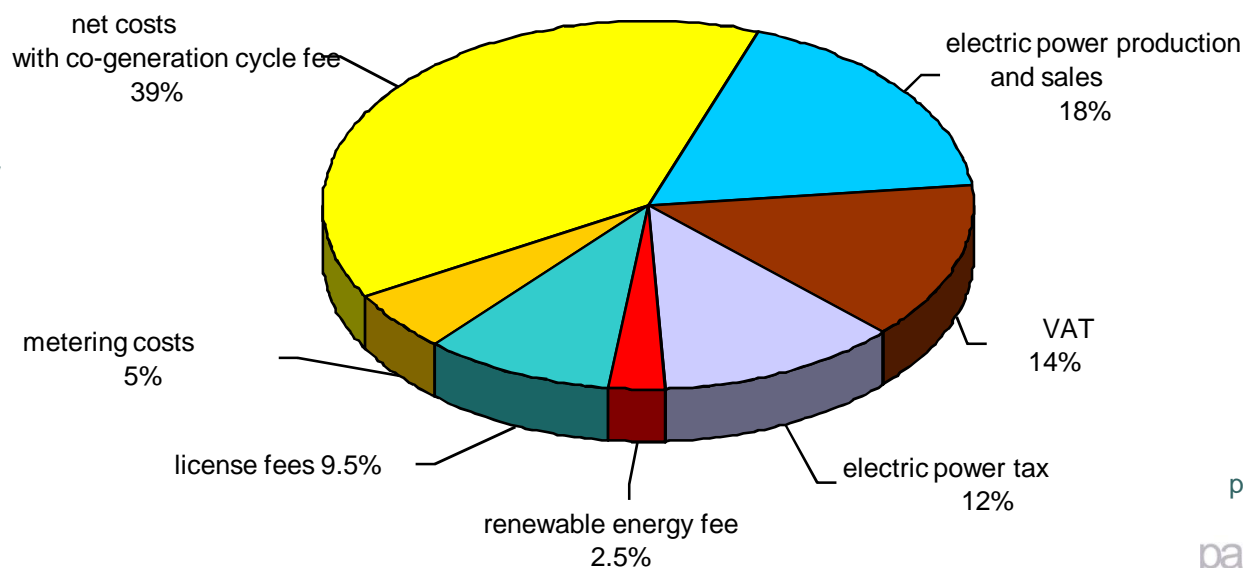


GERMANY: ACT ON RENEWABLE ENERGY SOURCES

- Federal Act (improvement of the Electric Power Distribution Act of '91);
- Priority for the distribution of renewable energies;
- Extensive regulation of network access;
- Statutory take-over fees
 - Long-term perspective and safety of investments (20–30 years),
 - Encouragement of the employment of new opportunities and technologies (mainly biomass and geothermics),
 - Encouragement of the enhancement of efficiency due to the degressive reduction of the fee.

Average electric power consumption costs of German households

**16.87 Cent/kWh
(approx. HUF 42)**





GERMANY: DISTRIBUTION FEE AS REGULATED IN THE ACT ON RENEWABLE ENERGIES, 2005

	2005 Cent/kWh	Rate of degression
Water power	6.65 – 9.67	0%
Biomass	8.27 – 21.33	1.5%
Geothermics	7.16 – 15.00 (HUF18 – HUF38)	1.0% (from 01.01.2010)
Wind energy (on land)	5.39 – 8.53	2.0%
Wind energy (at open sea)	6.19 – 9.10	2.0% (from 01.01.2008)
Photovoltage	43.42 – 59.53	5.0 – 6.5%

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GERMANY: ELECTRIC POWER FROM GEOTHERMAL SOURCES

Distribution fee	Cent/kWh	Under the former Act on renewable energy sources
To 5 MW	15	8.95
10 MW	14	8.95
20 MW	8,95	8.95
> 20 MW	7,16	7.16

- 1% degression from 01 January 2010

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Support to heat generation

- Federal Ministry of Environmental Protection "Market Introduction Program": Support to Geothermal District Heating via the support of the German Reconstruction Bank (KfW) featuring special, low interest rates (2-3% TACC).
- Provincial-level facilities, e.g. Baden Württemberg supports the installation of heat pumps.
- "Renewable Heat Act": draft bill now in the Federal Legislation:
 - on the basis of the Barcelona Principles, a given % of heating-hot water is to be produced from renewable energy sources.

Useful links



CORDIS:

http://cordis.europa.eu/fp7/home_en.html

EUROPA:

http://europa.eu.int/comm/dgs/research/index_en.html

http://europa.eu.int/comm/research/energy/index_en.html

http://europa.eu.int/comm/energy/index_en.html

INCO and Marie Curie

<http://www.cordis.lu/inco/home.html>

http://europa.eu.int/comm/research/fp6/mariecurie-actions/indexhtm_en.html

Renews

<http://europa.eu.int/comm/research/energy/pdf/renews3.pdf>

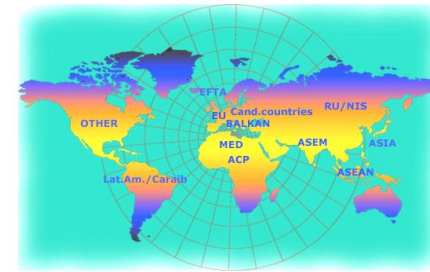
Information days and conferences

http://ec.europa.eu/research/energy/gp/gp_events/article_1567_en.htm



[Mission](#) | [Site map](#) | [FAQ](#) | [Links](#)

SUSTAINABLE ENERGY SYSTEMS
FISSION & RADIATION PROTECTION
FUSION



RENEWABLE ENERGIES FOR EUROPE
RESEARCH IN ACTION



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