



BIOENERGY'S CONTRIBUTION TO THE EU ACTION ON CLIMATE CHANGE

Preliminary Study

Armando do Jogo
European Court of Auditors

Renewable energy sources in the context of climate change

In the EU, transport is responsible for almost one quarter of greenhouse gas emissions.

Nearly all the energy used for transport comes from oil, for which the EU is heavily dependent on imports.

According to the European Commission biofuels provide the best option in the short to medium term to replace a significant share of fossil fuels.

Biofuels are processed from biomass, a renewable energy source, and can be readily integrated into fuel supply systems.

In a broader context renewable energy sources in general play an important role in reducing greenhouse gas emissions and also improving the security of energy supply by reducing the EU's growing dependence on imported energy sources.

Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources defines renewable energy resources and biofuels.

Renewable energy sources in the context of climate change

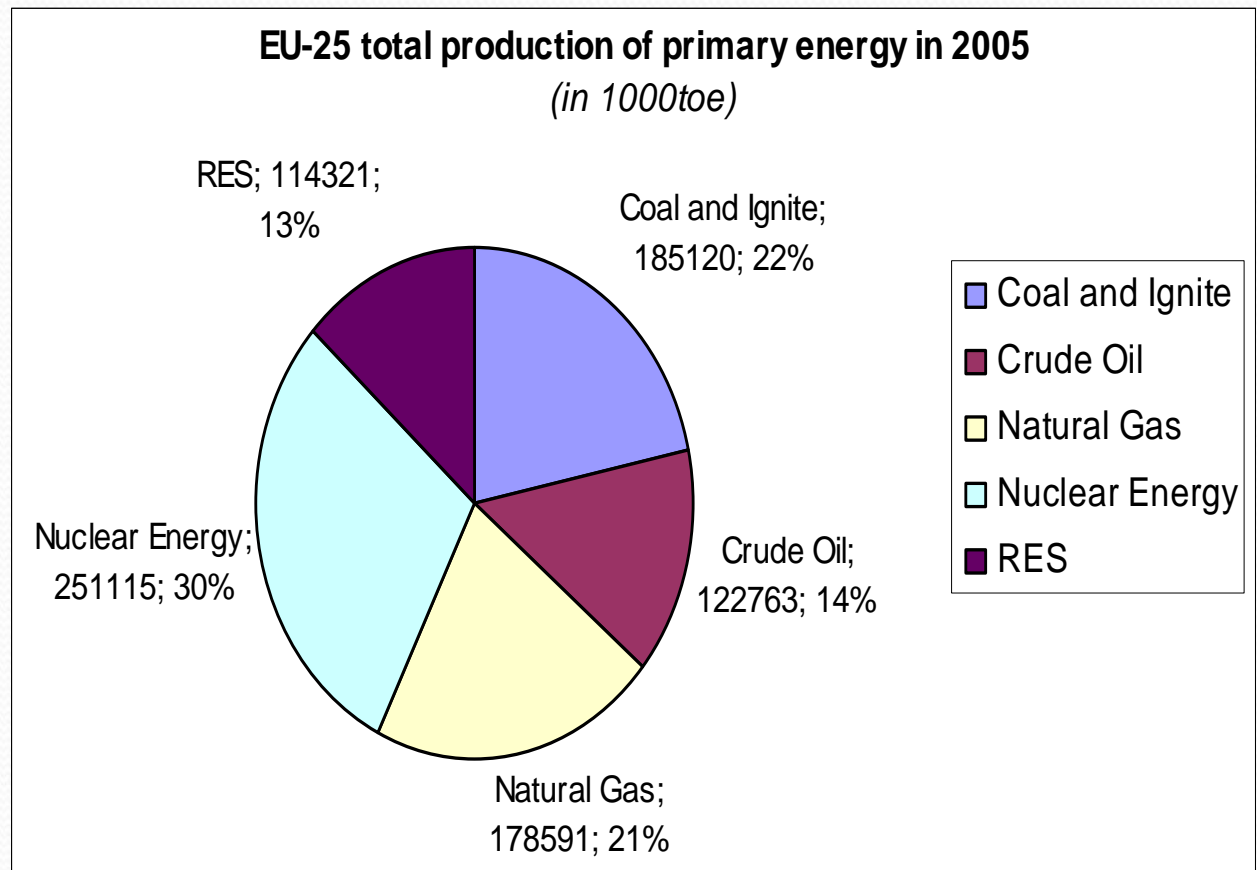
<i>“Renewable energy sources” as defined in Directive 2009/28/EC</i>	<i>Description according to the directive when available and other sources</i>
Wind	kinetic energy of wind converted into electricity in wind turbines
Solar	solar radiation exploited for solar heat (hot water) and electricity production.
Aerothermal	energy stored in the form of heat in the ambient air
Geothermal	energy stored in the form of heat beneath the surface of solid earth
Hydrothermal and ocean	energy stored in the form of heat in surface water
Biomass	the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste
Landfill gas	gases generated from the landfilled waste
Sewage treatment gas	gas produced during the process of removing contaminants from wastewater and household sewage
Biofuels	liquid or gaseous fuel for transport produced from biomass

Importance of EU renewable sources

The EU-25 total production of primary energy in 2005 was 852 197 000 tonne of oil equivalent (toe), to which

Nuclear Energy makes the largest contribution to this amount by 251 115 000 toe (30 %) and

Renewable Energy Resources the least with 114 321 000 toe (13 %).

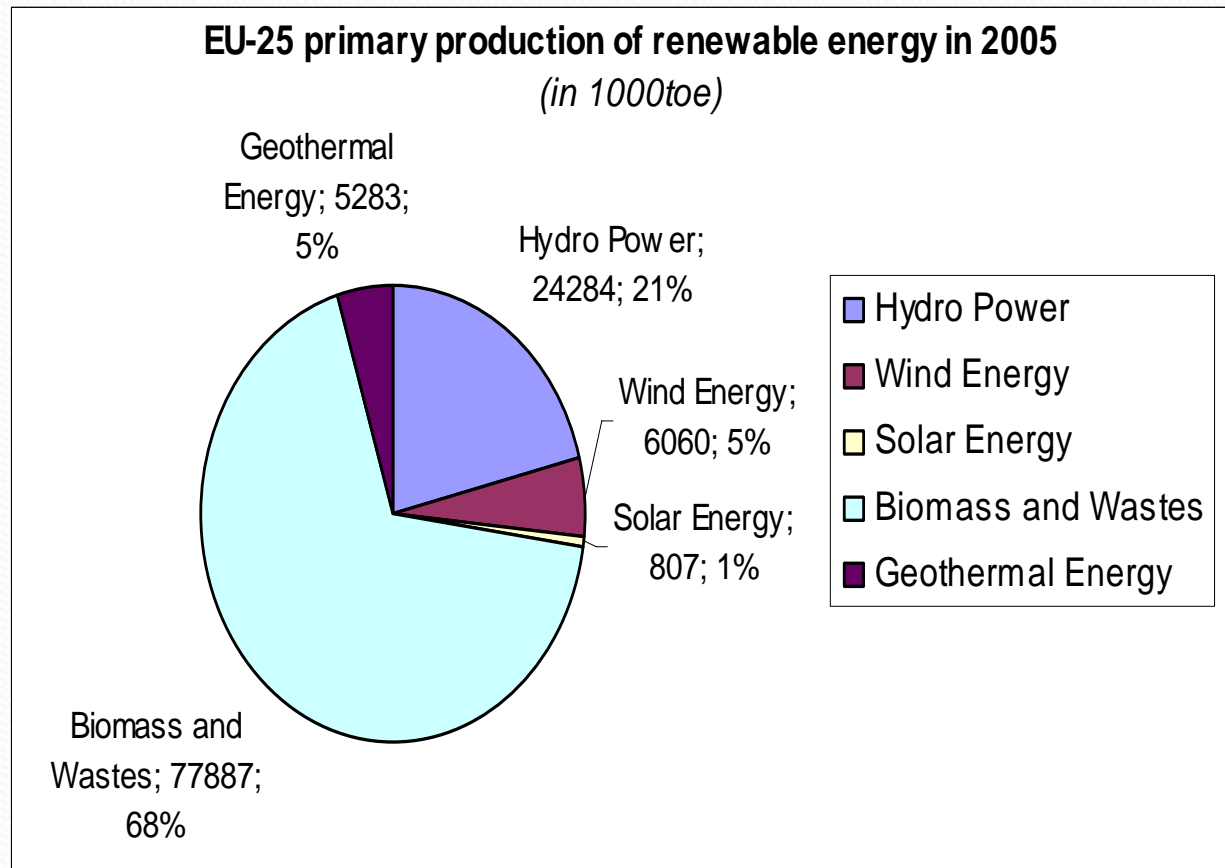


Importance of EU renewable sources

In 2005, the largest share (68,1%) of renewable energy sources produced within the EU-25 came from

Biomass and Wastes, broadly wood/wood waste, municipal waste, biogas and biofuels.

The second largest contribution (21,2 %) to the production of renewable resources was **Hydro Power**.



EU funding of renewable energy (Up to 10 billion € / year !!!)

Common Agricultural Policy	DG AGRI	Single Area Payments Energy crop premium Rural development LEADER CAP Health check
Environment	DG ENV	LIFE + GEEREF
European Economic Recovery Plan	DG ECFIN	Offshore wind energy projects
Regional development	DG REGIO	Intelligent Energy Europe II Structural and Cohesion Funds
Energy	DG TREN	European Strategic Energy Technology Plan Clean Sky Joint Technology Initiative
Research	DG RTD	Projects in the field of energy efficiency, saving and renewables

Non-financial support measures in force

- *Cross Compliance* requires farmers to observe minimum environmental standards in order to receive full direct payments
- Set aside obligations
- Promote the use of forest biomass for energy generation
- Biomass production and extraction from special areas of conservation sites
- Limits on intensive production of energy crops
- European Climate Change Programme main instrument to discuss and prepare the further development of EU's climate policy.
- Directive 2003/87/EC established a scheme for greenhouse gas emission allowance trading
- Import duties for bioethanol tariffs for biodiesel and special treatment for developing countries
- Measures to increase the development of biomass energy
- Promotion of Biofuels
- Long term strategy for renewable energy in the EU. (20% share of RES and 10% share of Biofuels in the energy consumption by 2020)

Reasons for the audit

Risk:

- The environmental benefit of biofuels is controversial: according to certain opinions the quantities of fertilizer and water required for growing first generation biofuels come very close to negating any positive effect on greenhouse gas emissions.
- Biofuel industries increase the demand for cereals, sugar crops and vegetable oils and this provokes higher prices leading to food security difficulties for the least well-off. Hence consumers of food products will have to pay more.
- In its Health Check the Commission proposed to abolish the energy crop scheme based on current very strong demand for bioenergy.

Reasons for the audit

Materiality:

- Farmers producing bioenergy crops can benefit from single payment schemes. The legislative amendments which followed the Health Check abolished the energy crop scheme.
- In the EU's rural development policy for the years 2007–2013, various support measures are designed to encourage the development of renewable energy. They include, *inter alia*, support for investments and the use of unused biomass by forest holders.

Reasons for the audit

Relevance:

- There is an increasing awareness among the EU population and the Institutions in respect of environmental and the public intervention issues in that area and, in particular, the EU commitment to combat climate change.

Reasons for the audit

Coverage:

- Up to now, the European Court of Auditors has not conducted an audit specifically on this topic.
- The Work Programme of the Court had already covered the energy sector in previous audits (e.g. the audits on the programmes Joule, Thermie, Altener and, recently, Intelligent Energy).

Issues/questions for discussion

- Taking into account the wide number of actions/programmes how could the audit scope be limited?
- Considering the horizontal nature of the task in which way could the work between different thematic audit units be coordinated?
- The objective of the audit will be to evaluate the effectiveness of the measures taken by the Commission. What should be the main questions to answer?