

Renewable energy to take off in Europe ?

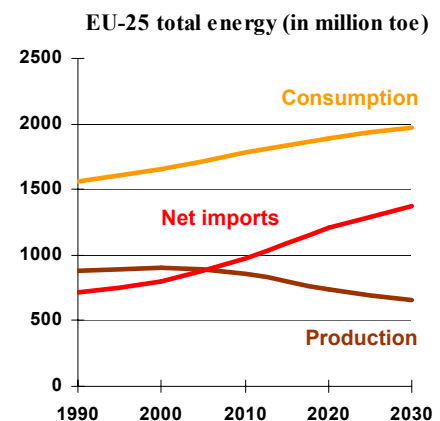


2004 – overview and scenario for the future

The Commission reports, in a Communication to the Council and the Parliament, on the share of renewable sources in the energy balance of the 15 EU Member States. The Commission takes stock of the current situation and lists the actions that have been undertaken since 2000 to promote renewable energy in Europe. Assessing that current progress makes it unlikely that EU targets for 2010 will be achieved, the Commission calls on Member States to do more and presents new avenues, particularly in terms of financial support.

Why do we need renewable energy?

We are increasingly dependent on fuel and natural gas imports, as was highlighted in the Commission's Green Paper on Security of Energy Supply (2000). The European Union now imports 50% of its energy needs. Around 2030, this figure is forecast to rise to 70% with an increasing share for fossil fuels. This situation makes us particularly vulnerable economically, politically and with regard to the environment. Additionally we have committed ourselves internationally to reducing greenhouse gas emissions.



In this context and even though traditional fossil fuels and nuclear energy will continue to play the main role, Europe has a special part to play in promoting renewable energy. Despite their higher cost and climatic and geographic constraints, this is an attractive option to diversify the EU's energy supply: renewable sources are available locally, they bring environment benefits and they contribute to employment and the competitiveness of the European industry.

What have we developed since 2000?

A new legislative framework to promote renewable energy and energy demand management

On the basis of recommendations in the Green Paper, the Commission has launched a considerable number of new legal instruments since 2000 most of which have been adopted and two are in the process of being adopted:

- the Directive on the promotion of electricity produced from renewable energy sources
2001/77/EC - OJ L283/33 – 27.10.2001
- the Directive on the promotion of biofuels
2003/30/EC - OJ L123/42 – 17.5.2003
- the Directive on energy performance of buildings
2002/91/EC - OJ L1/65 – 4.1.2003
- the Directive on the promotion of cogeneration
2004/8/EC - OJ L52/50 – 21.2.2004
- the Directive for the taxation of energy products and electricity
2003/96/EC - OJ L283/51 – 31.10.2003
- the Directive on energy efficiency requirements for ballasts for fluorescent lighting
2000/55/EC – OJ L279/33 – 01.11.2000
- the Directives on labelling of electric ovens, of air-conditioners and of refrigerators
2002/40/EC - OJ L283/45 – 15.5.2002
2002/31/EC - OJ L86/26 – 3.4.2003
2003/66/EC - OJ L170/10 – 9.7.2003
- the Regulation on Energy Star labelling for office equipment
2001/2422/EC - OJ L332/1 – 15.12.2001
- the Directive on Eco design requirements for energy using products
Proposal COM (2003) 453
- the Directive on energy efficiency and energy services
Proposal COM (2003) 739

Built up programmes for financial support

In June 2003, the Commission launched a new Community support programme in the field of energy, "Intelligent Energy – Europe", to last until 2006. This new programme allowed the various existing programmes to be reoriented and grouped together in a single coherent and efficient programme. The overall budget is now € 250 million over 3 years in comparison to the € 220 million for the Save and Altener programmes from 1993 to 2000. "Intelligent Energy – Europe" is intended to promote renewable energy and energy demand management by catalysing national, regional and local efforts across the EU. The programme focuses on the removal of administrative and market barriers which hamper innovative projects to be implemented on a large scale.

Additionally the Sixth RTD Framework Programme (2002-2006) supports basic and applied research with a budget of € 810 million in the field of renewable energy and energy demand management.

Dissemination and public awareness campaigns

- the campaign for Take-Off, launched in 1999
- the ManagEnergy initiative: www.managenergy.net

Are we on the right track?

Outside electricity generation from hydro-energy and the use of wood for heating, one can only say that the share of renewable energy in the EU energy mix remains modest. All member states have initiated support systems for renewable energy but for these to take-off, administrative, legislative and market barriers need to be removed.

There are considerable differences between Member States according to the various renewable energy sources and geographic conditions. It is still early to assess the results of the new legislative framework. However member states should continue to strive to implement the right policies if there is to be any chance of achieving the targets.

In the 2001 directive, the EU set itself the target to achieve 22% of green electricity in total electricity consumption by 2010.

1 Can we achieve the 22% target of green electricity in 2010?

Yes, if member states reach the national objectives they have all adopted under the 2001 directive on the promotion of electricity from renewable energy sources.

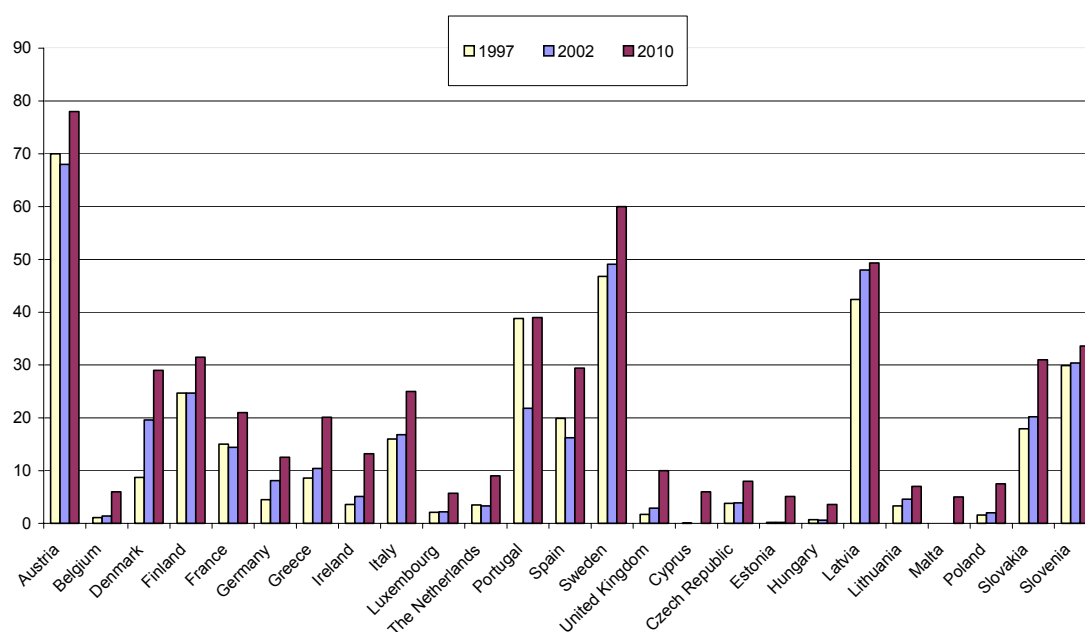
But it is difficult at this stage to anticipate whether current policies and measures implemented in the member states will allow these national objectives to be reached. On the basis of current trends, it is likely that 18 to 19% total electricity consumption in 2010 will be produced from renewable energy sources.

However there are considerable differences between member states. EU countries can be roughly divided into three groups that are more or less on track towards achieving their targets for the share of green electricity:

- Denmark, Finland, Germany and Spain have initiated energy policies that should allow them to achieve their national targets.
- Austria, Belgium, France, Ireland, the Netherlands, Sweden and the United-Kingdom have started to implement appropriate policies that could allow them to reach their objectives.
- Greece and Portugal need to reassess their policies if they also wish to be on track.

Finally the new member states whose situation will be assessed in 2006. These countries adopted the green electricity directive only recently. However national targets were set in the accession Treaty and the total renewable electricity target for the enlarged Union is 21% of overall electricity consumption by 2010.

Share of green electricity in the member states consumption of electricity in relation to the national targets for 2010





Amongst the various renewable energy sources available to generate electricity, the EU is using nearly all its hydro potential¹. Technologies that rely on wind, sun and biomass should therefore be promoted as the most hopeful additional sources.

The strong growth of wind power means that it can be expected to contribute 50% of the increase needed to achieve the target set for the share of renewable energy in electricity consumption by 2010.

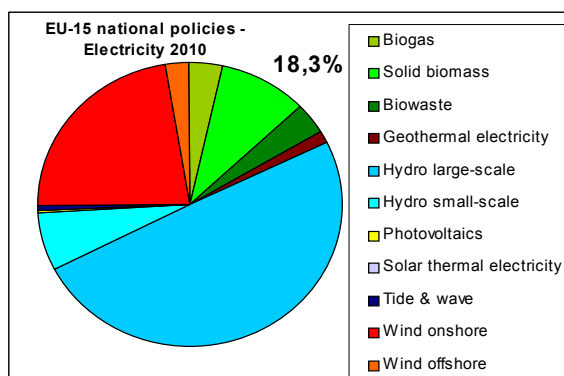
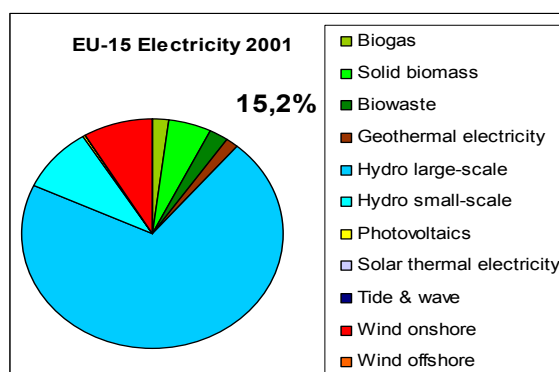
The European wind industry has 90% of the world equipment market. Denmark, Germany and Spain contribute 84% of total EU15 wind power capacity. Their experience suggests that successful expansion of wind power relies on various factors such as an attractive long-term financial framework, uniform planning procedures and licensing systems, and non-discriminatory grid connexion conditions.

By comparison, the development of biomass technologies is hampered by a lack of political coordination and financial support.

This is unfortunate because of the potential it has for heating and transport and for cogeneration applications. Denmark, Finland and the United-Kingdom are the only countries in which there is steady growth in biomass electricity. Member states do not all have the same natural potential; however there is considerable capacity unexploited. This is particularly so in some of the new member states (the Baltic States, the Czech Republic, Hungary and Slovakia).

Electricity generation from solar energy remains very small; however this is increasing and a steady growth can be expected in the long term.

Share of the various renewable energy sources in the production of green electricity



¹ However, in the new member states, particularly in Hungary, Lithuania and Slovenia, there is still an important potential to increase hydro energy generation.

3 What was planned to achieve 12% energy from renewables by 2010?

In addition to the promotion of green electricity and energy demand management, member states have committed themselves to encourage biofuels and renewable energy for heat production.

The fate of biofuels remains largely dependent on taxation policies. Today seven member states have partly or completely removed taxes on biofuels, following European legislation: Austria, France, Germany, Italy, Spain and the United-Kingdom. It is though still too early to assess the impact of legislation on the promotion of biofuels. However it is clear that their success will depend on the active policies that the member states will put in place.

Greater use of renewable energy for heating should be better encouraged. This is still a sector dominated by traditional wood biomass use. Yet other sources for heating such as geothermal, solar and biogas energy have all a growth potential that needs to be developed. New support policies are also necessary to make the use of wood more competitive and to promote other forms of biomass.

EU targets for 2010

- Double the share of **renewable energy** in national gross energy consumption from **6% to 12%**
- Increase the share of **green electricity** in total electricity consumption from **14% to 22%**
- Raise the share of **biofuels** in the transport fuel market **to 5,75%**

4 Forecasts for the share of renewable energy in the EU energy mix in 2010

- **9%**
 - if current trends continue in heating
 - if member states implement their national plans for green electricity
 - if member states fulfil in full the requirements of the biofuels directive
- **10%**
 - if current trends continue in heating
 - if member states fulfil in full the requirements of the green electricity directive
 - if member states fulfil in full the requirements of the biofuels directive
- **12%**
 - if member states initiate more vigorous policies in heating
 - if member states fulfil in full the requirements of the green electricity directive
 - if member states fulfil in full the requirements of the biofuels directive



What can we do more in the years to come?

Facing a mixed balance and an uncertain scenario, the Commission is proposing new concrete actions to support member states in their efforts to increase the share of renewable energy.

1 The heart of the problem: invest more in renewable energy

One estimate puts the gross investment cost for the EU to achieve the 12% target at € 10 to 15 billion par year². In fact each energy source has benefited over time from substantial public funding. There is no reason why renewable energy should be treated differently and there is little hope of it taking off without these initial investments.

In the current context of poor growth and taking into account the imperative for society as a whole, investment should be a shared responsibility between the various levels of government.

A renewed political will from member states

Now that the legislative framework is in place, Member States need to implement vigorous policies to promote renewable energy. **They have several means at their disposal to do so such as tariff policies, tax exemptions, green certificates**, that could help increasing the profitability of renewable energy and give them a greater weight in the energy balance.

The EU as well can do “more and better”– how?

- **A new financial instrument should be created to bridge the gap between successful demonstration of innovative technologies and their effective entrance on the market** – this instrument would replace from 2007 onwards the first “Intelligent Energy – Europe”
- **EU support for research and technological development in renewable energy should be strengthened**
- **Support for renewable energy needs to be coordinated with other key EU policies and programmes such as the Structural Funds and the Cohesion Fund**, the Common Agricultural Policy, regional policy and development cooperation policy – the European Investment Bank has already set itself the target of doubling the share of renewable energy loans in its loans for energy from 8 to 16%.
- **Finally the EU has an important role to play in removing institutional and administrative barriers, raising awareness amongst local and regional actors, facilitating the exchange of know-how and good practices.**

² A. Zervos, « Updating the impact of the Community strategy and action plan for renewable energy sources », draft final report, 2003 (based upon 2001 prices).

2 More wind, more sun and more biomass...

A new plan to promote biomass

The Commission will bring forward **a specific plan to develop the use of biomass to generate electricity and heating and as transport fuel**. First, the biomass potential in the various member states needs further assessment in terms of land availability and different renewable biomass applications. Second, effective use of biomass for energy purposes depends on interactions between public policy in the fields of energy, agriculture, rural development, environment and trade. The Commission will focus on the coordination of Community policies and financial mechanisms to secure adequate supplies of biomass. Finally, specific attention will be paid to the new member states taking into account the high and unexploited biomass potential that many of them have.

What is biomass?

"Biomass" means the whole of living substance. Since the first oil shock, this term has been applied to organic vegetable and animal products used for energy or agronomy purposes.

Biomass is used as an energy source to generate heat and electricity and as transport fuel: inter alia, heat generation through combustion of agricultural residues (straw, chicken litter...), wood industry residues (saw dusts, shavings...) and forestry material, or through combustion or transport use of vegetal oils. Heat and electricity can also be generated through methanisation of organic waste, particularly in domestic waste sewage and purification plants.

A renewed effort to place biofuels on the market

The Commission is considering whether it is appropriate to modify the directive on the promotion of biofuels so that **higher blending limits are allowed to increase the share of biofuels in gasoline and diesel** (beyond the current 5,75%).

New initiatives to develop renewable energy in heating

The Commission will bring forward further initiatives, if necessary legislative proposals, to accelerate the fulfilment of three key technologies: **modern biomass heating, solar heating and the use of geothermal heat**.

Special support to offshore wind

Infrastructure investments for the grid adaptation and integration of off-shore projects will have to be made – the trans-European energy networks have already started to support these investments. Governments will need to establish legal regimes that give them relevant jurisdiction for the area outside the territorial seas. Finally the Commission will review the obstacles and objections that may block the development of off-shore wind, the environmental requirements that need to be met and will develop guidelines for member states.

MEMO is prepared by the Strategy, Coordination, Information and Communication Unit of DG Energy and Transport. Don't hesitate to contact us for further information (tel +32 2 2968 042)

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