

### **Policy Background**

*A European energy policy must pursue the objective of a sustainable, competitive and secure supply of energy. If the EU continues on its present course, this key objective will not be attained. In January 2007, the European Commission adopted an energy policy for Europe. This was supported by several documents on different aspects of energy and included an action plan to meet the major energy challenges Europe faces. Each European citizen must be informed of these challenges and the role they should play in meeting them.*

*Renewable energies help combat climate change while increasing security of supply.*

### **Key Issues**

Spain is currently far from its RES-E target. In 1997, a strong support programme in favour of RES was introduced. In 2004, hydro power still provided 50% of all green electricity, while on-shore wind and biomass had started penetrating the market. PV energy is also promising, with an average growth rate of 54% per year. Proposed changes to the feed-in tariffs and the adoption of a new Technical Buildings Code (2006) show increased support for biomass, biogas, solar thermal electricity, and solar thermal heat.

### **Current national RES target**

The Spanish “Plan de Energías Renovables 2005-2010” sets the goal of meeting 12% of total energy consumption RES in 2010. The target to be achieved in 2010 under the RES-E Directive is 29.4% of gross electricity consumption. The revised Plan de Energías Renovables of 2005 sets capacity targets for 2010, which include wind (20,155 MW), PV (400 MW), solar thermal (4.9 million m<sup>2</sup>), solar thermal electric (500 MW) and biomass (1,695 MW). In the Spanish report (2005) to the Commission under Biofuel Directive 2003/30/EC the national target for the marketing of biofuels and other renewable fuels is 0.40% of energy content by 31 December 2005. This is lower than the 2% target indicated in the Biofuel Directive. No further biofuel targets have been set.

### **Progress towards meeting national targets**

In Spain, the RES-E share of gross electricity consumption was 19.6% in 2004, compared to 19.9% in 1997.

The biofuels share by energy content was 0.44% in 2005. This exceeds the target that was set at the national level (0.40%).

### **Main supporting policies**

RES-E in Spain benefits from the following support mechanisms:

- *A feed-in tariff or a premium price* is paid on top of the market price. The possibility of a cap and floor mechanism for the premium is being considered. Also proposed in the draft law published 29 November 2006 are reduced support for new wind and hydro plants and increased support for biomass, biogas and solar thermal electricity.
- Low-interest loans that cover up to 80% of the reference costs are available.

The fuel tax exemption currently in place is applied specifically to the volume of biofuel. Adjustments might be made to prevent overcompensation.

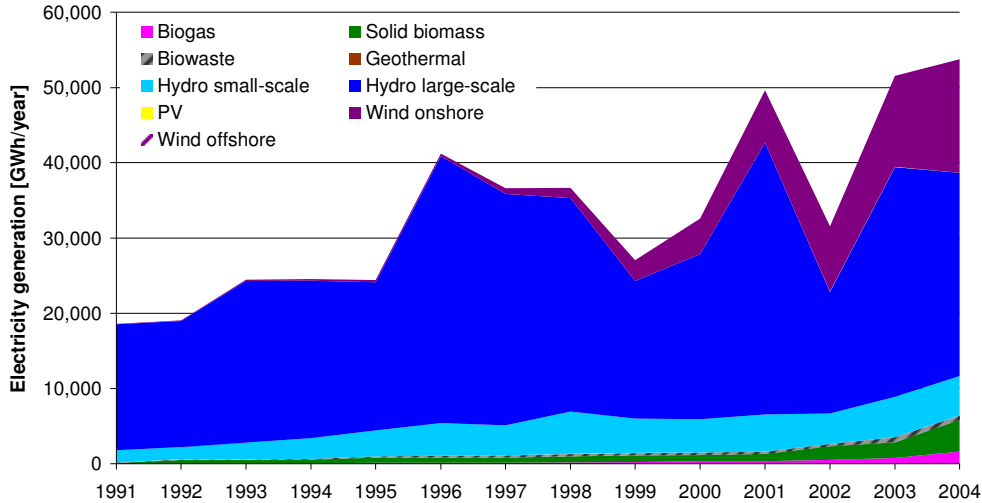
RES-H is supported through the new Technical Buildings Code (CTE, 2006). This includes an obligation to cover 30-70% of the domestic hot water demand from solar thermal energy and it applies to all new buildings and renovations. The assumed volume of hot water demand and the geographical location of the building determine the exact percentage that applies. Investments in RES-H are eligible for investment subsidies of 36.4% of the total cost.

### **Key renewable energy statistics**

*Electricity from RES:* The production of green electricity increased from 36 609 GWh to 53 750 GWh between 1997 and 2004. In 2004, hydro power accounted for almost 60% of all RES-E production. The penetration of on-shore wind is significant as well (just under 30% of all RES-E in 2004) and is increasing fast. Between 1997 and 2004, this sector grew at an

average rate of 54% per year. In 2004, bio-electricity covered 12% of the market. While solid biomass made the largest contribution in absolute figures (4,250 GWh), biogas recorded the highest average growth rate per year (42%). The contribution of PV grew from 3 GWh in 1997 to 57 GWh in 2004. Spain ranks second highest in the EU after Germany, in terms of both its electricity production from PV and its installed onshore wind power capacity.

**Electricity generation from renewable energy sources by type (GWh)**



Source: European Commission  
[http://ec.europa.eu/energy/res/legislation/share\\_res\\_eu\\_en.htm](http://ec.europa.eu/energy/res/legislation/share_res_eu_en.htm)

**Biofuels:** In 2005, Spain produced the largest amount of bioethanol in the EU-25. Total bioethanol for transport production was 240 kt in 2005. The level of production reached 218 ktoe. In Spain, the market share of bioethanol is three times that of biodiesel.

**Heating and cooling:** In Spain, the main source of RES-H is biomass. In 2004, the production of biomass heat totalled 3453 ktoe. Average growth rates between 1997 and 2004 were higher for solar thermal heat and geothermal heat (12% and 4%, respectively) than for biomass heat (1%).

	Penetration 1997 (ktoe)	Penetration 2004 (ktoe)	Av. Annual growth [%]
Biomass heat	3262	3453	1%
Solar thermal heat	25	54	12%
Geothermal heat incl. heat pumps	7	8	4%

Source: European Commission  
[http://ec.europa.eu/energy/res/legislation/share\\_res\\_eu\\_en.htm](http://ec.europa.eu/energy/res/legislation/share_res_eu_en.htm)

**Good example: Project "Plataforma Solare 10 (PS10)" (NNE5 1999/356)**

The project PS10 consists of a concentrated solar power thermoelectric plant of 11 MW. It produces more than 23 GWh/year via 624 reflective heliostats of 120 m<sup>2</sup> surface each and a 115 m tower (where the solar receiver for steam generation to feed the steam turbine is located). PS10 plant is situated 25 km west of the city of Seville and is promoted by the company Abengoa. PS10 investment cost has been about EUR 35 million. The project has been awarded a contribution of EUR 5 million because it is highly innovative. Project execution took 54 months, from 1 July 2001 to 31 December 2005. Work ended with the construction of the solar thermal power plant for electricity production and commercial operation. The plan is very ambitious, as PS10 intends to be the first of a set of solar electric power generation plants to be constructed in the same area and totals more than 300 MW by 2013.

### **For further information**

To find out more about renewables, go to: [http://ec.europa.eu/energy/res/index\\_en.htm](http://ec.europa.eu/energy/res/index_en.htm)  
[http://ec.europa.eu/energy/intelligent/index\\_en.html](http://ec.europa.eu/energy/intelligent/index_en.html)

To find out more about the current situation of renewables in the Member States, go to  
[http://ec.europa.eu/energy/res/legislation/electricity\\_member\\_states\\_en.htm](http://ec.europa.eu/energy/res/legislation/electricity_member_states_en.htm)  
[http://ec.europa.eu/energy/res/legislation/share\\_res\\_eu\\_en.htm](http://ec.europa.eu/energy/res/legislation/share_res_eu_en.htm)

To find out more about support measures, go to  
[http://ec.europa.eu/energy/res/legislation/support\\_electricity\\_en.htm](http://ec.europa.eu/energy/res/legislation/support_electricity_en.htm)

To find out about a project or contact an energy agency in your region, go to  
<http://www.managenergy.net/emap/maphome.html>

Further fact sheets on Spain and other Member States can be found on:  
[http://ec.europa.eu/energy/energy\\_policy/facts\\_en.htm](http://ec.europa.eu/energy/energy_policy/facts_en.htm)

### **What is meant by.....?**

*RES: Renewable Energy Sources*

*RES-E: Electricity production from renewable energy sources*

*RES-H: Production of heat and cold from renewable energy sources*

*Biofuels: Mainly includes biodiesel and bioethanol*

*Biomass: Includes solid biomass, biowaste and biogas*

*CHP: Combined Heat and Power*

*GWh: gigawatthour*

*Kt: kilotonnes*

*ktoe: Thousand tonnes of oil equivalent*

*MW: megawatt*

*PV: Photo-voltaic – technology for the production of electricity from solar energy*

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