



## Energy

Energy policy for Europe needs to focus on creating a competitive internal energy market offering quality service at low prices, on developing renewable energy sources, on reducing dependence on imported fuels and on doing more with a lower consumption of energy.

Research work at JRC provides scientific and technical support to policy and decision makers in the conception, development, implementation and monitoring of EU policies. JRC has developed special skills and unique tools to ensure that the production, distribution and use of both nuclear and non-nuclear energy are sustainable, safe, secure and efficient.



JRC energy-related activities focus on:

1. Sustainability of energy production systems, which is based on new and renewable energy sources and technologies.
2. Competitiveness, which aims at integrating knowledge on all energy sources.
3. Security of energy supply, a top EU priority, where the JRC goal is to be able to deal with the economic and geopolitical aspects of the supply of energy to the EU.

### SCIENCE MEETS POLICY

Joint Research Centre at the European Parliament

**Exhibition**  
**4-6 May 2010**

**EP Brussels**  
**Espace Distribution**  
**3rd floor, Spinelli Building**

## Some of the JRC energy-related activities

### JRC Information System on low carbon technologies

Europe, as in the rest of the world, is faced with a huge energy and climate change challenge. The EU has responded to this challenge through the European Strategic Energy Technology (SET)- Plan, proposing various ways in which the EU can create the best conditions to drive down the cost of existing energy technologies and to develop the next generation of technologies. The SET-Plan is considered to be the technology pillar of the EU energy and climate change policy.

The JRC runs SETIS (SET-Plan Information System) which is an open-access information and knowledge management system on low-carbon energy technologies and innovation capacities. It aims at supporting effective strategic planning in the field of energy technology objectives and build consensus around the SET-Plan programme.

In practice, SETIS performs an in-depth analysis across the EU-27 on the current public and private R&D expenditures of the SET-Plan low carbon technology priorities. It assesses the low carbon technological pathways and cost-effectiveness, along with their potential contribution to CO<sub>2</sub> emission reduction (according to the Kyoto protocol) and to the EU security of supply.

### Photovoltaic solar electricity: JRC support to international standardisation

The sun provides more than enough clean unlimited power to end our dependence on foreign oil as well as being a sustainable source of energy. Also known as Solar Generators, Photovoltaic Generators are able to harness the clean unlimited power of the sun and it is estimated that by 2020 between 12% and 20% of European electricity will be delivered by photovoltaic generators.



JRC develops standards and references to assess the technical and scientific issues raised by the large-scale implementation of these photovoltaic generators. The objective is to be able to determine the performance and longevity of photovoltaic technologies that will enable photovoltaic enterprises (manufacturing, system integrators, utilities and financial investors) to establish, in a harmonised and transparent way, the energy performance of power plants over time.

In addition, JRC is equipped with their own laboratory for the verification of the power and energy generation of photovoltaic devices through the development of experimental methods suitable for international standardisation.

### Biofuels: JRC sustainability criteria for its production and use

Biofuel is currently the subject of a wide-ranging debate on questions of costs, security of energy supply, greenhouse gas emissions, sustainability of production systems, impact on food production and biodiversity. JRC is carrying out active research on a wide range of scientific programmes to provide reliable data to support the development of biofuels. The research focuses on the definition, analysis and testing of sustainability criteria for the production and use of biofuels. Its aim is to identify criteria which would be able to eventually support certification systems. It also seeks to measure greenhouse gas emissions associated with land-use changes because of biofuels production. In previous research, JRC has shown that there are considerable uncertainties in greenhouse gas savings from biofuels, mainly related to indirect effects due to displacement of agricultural production.



### JRC Energy Security assessment

Securing the energy supply is a key driver of energy policy in Europe. The Energy Security Unit of the JRC's Institute for Energy provides up-to-date, independent analysis and tools to aid policy making related to the security of energy supply. The JRC action 'Security of Supply' aims to provide a comprehensive energy security assessment in its political, economic, technical and environmental dimensions to inform policy makers and enable scenario testing. Through modelling and the development of risk assessment approaches, the action focuses on primary energy supply, including geopolitical and macroeconomic aspects, to better understand short- and long-term security of supply and to define key energy security indicators to quantify all the impacts of energy security policies.

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