



EUROPEAN
COMMISSION

European
Research Area

International Cooperation

in EU Energy Research



Reaching Out – International

Challenges and opportunities
in energy research are global



cooperation in energy research...

The EU has long been a leader in the promotion of research into energy technologies, and energy research has a key role to play in helping the EU to cut its greenhouse gas emissions and meet its ambitious climate change targets.

Greater investment – both financial and human – in energy research is essential if we are to bring these technologies to market and ensure a greener future. The EU's Strategic Energy Technology Plan (SET Plan) lays down the steps Europe must take to develop and promote new energy technologies. The SET Plan is the 'technology' pillar of the EU's wider energy and climate change package.

However, the EU cannot act alone. The SET Plan recognises that now, more than ever, energy research must be a global endeavour, with international research cooperation leading to more effective results.

By cooperating with international partners on energy research, the EU hopes to:

- make Europe more competitive by forming strategic partnerships with other countries;
- address specific issues that other countries face as well as problems that are global in nature;
- use energy research cooperation to strengthen the EU's relations with other countries and support the EU's work in other areas, such as combating climate change, ensuring the security of energy supply and supporting developing countries.

Why international cooperation?

...aims to tackle climate change,


International research cooperation has a number of benefits for all involved:

- working together enhances synergies between the different partners;
- it speeds up the development of the clean technologies we need if we are to tackle our energy-related problems;
- partners can pool financial resources, share risks and set common standards for large or relatively risky research and development (R&D) projects;
- by linking up their efforts, partners can support a wider range of energy technologies and reduce the costs of key technologies;
- networking allows partners to better coordinate their energy research agendas;
- international research cooperation supports technology transfer to and technology deployment in developing countries and emerging economies.

Concrete benefits for all



ensure the security of energy supply and support development...



The EU finances research through the Seventh Framework Programme (FP7). Organisations from outside the EU may participate in FP7-funded projects, and in some cases are even eligible to receive FP7 funds.

Bilateral Science and Technology Agreements are another important tool used by the EU to further international research cooperation. Under these agreements, regular meetings are held in which the EU and the partner nation set priorities and decide on the most appropriate forms of cooperation. The EU has signed agreements with most of its main partners worldwide; most agreements contain specific clauses relating to energy research cooperation.

In addition, the EU works with its international partners via multilateral agreements. These include the many Implementing Agreements of the International Energy Agency (IEA), the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) and the Carbon Sequestration Leadership Forum (CSLF).

Tailor-made approaches
foster strategic cooperation with
key countries around the world

...while working together

Over the years, the EU has built up strong and lasting energy research cooperation partnerships on specific topics with certain non-EU nations.

This cooperation can take many forms – in some cases, EU-funded projects are ‘twinning’ with projects funded by the partner country. Alternatively, the EU and the partner country may coordinate their calls for proposals for joint energy research projects.

On a less formal note, the partnerships may include technical visits and the organisation of expert workshops where researchers from both parties can meet and share ideas and research results.

US

Department of Energy

A Working Group on Technologies, Research, Development and Demonstration was set up under the EU-US Energy Council. Activities set out in the group’s Joint Work Plan range from encouraging institutions to share information to potentially carrying out joint research projects in the future.



International research
cooperation in practice

for the **common** good!



Subjects addressed in the work plan include:

- carbon capture and storage (CCS) technologies;
- hydrogen and fuel cell technologies;
- solar power technologies;
- biofuel technologies;
- smart grids technologies;
- energy-efficient building technologies;
- nuclear fission technologies;
- nuclear fusion science and technologies;
- advanced materials;
- cooperation with other countries and international organisations.

Japan

Ministry of Economy, Trade and Industry (METI)
New Energy and Industrial Technology
Development Organization (NEDO)

The EU and Japan held a successful workshop on energy technologies and followed this up with a meeting to draw up a joint plan of activities. Initial areas of focus include power storage and CCS with particular emphasis on photovoltaics.

A problem **shared**

Russia

Federal Agency for Science and Innovation

The EU and Russia recently launched joint research projects in the fields of electricity network management and power generation from biomass.

Meanwhile, a regular EC-Russia Working Group in Energy Research has been set up to discuss and monitor cooperation activities and identify areas for possible collaboration. Currently, the Working Group is examining the potential for future cooperation and is looking at a number of areas including CCS and biofuels.

China

Ministry of Science and Technology

Energy research cooperation with China has focused largely on near-zero-emissions coal (NZEC) technology. In the first phase of this work, several EU-funded projects have been exploring the feasibility of and options for NZEC technology in China through CCS. More information on projects in this area can be found at <http://www.euchina-ccs.org> online.

Through FP7, the EU has also supported research projects with China on photovoltaics.



is a problem halved



India

Department of Science and Technology
Ministry of New and Renewable Energy
Ministry of Power

Recent calls for proposals from the EU have sought to promote research cooperation with India on biomass. The EU and India have also held a joint workshop on clean coal technologies.

In addition, FP7 funds have been made available for joint research in the field of solar energy – covering both photovoltaics and concentrated solar power.

Brazil

Ministry of Science and Technology (MCT)
National Council for Scientific and Technological
Development (CNPq)

Like other Latin American countries, Brazil has recently become an increasingly attractive partner for international energy research cooperation.

Increased discussions on cooperation between the EU and Brazil have resulted in FP7 support for joint research projects in the area of second-generation biofuels.

Bilateral dialogues



Brazil: biofuels

Canada: biofuels, CCS

China: wind, photovoltaics and concentrated solar power, biomass gasification, CCS, energy efficiency

India: solar, wind, biomass gasification, waste to energy, CCS, clean coal

include

Japan: power storage, CCS, photovoltaics

Latin America: biofuels

Mediterranean Partner Countries: photovoltaics and concentrated solar power

Russia: materials, hydrogen and fuel cells, energy efficiency, electricity networks, CCS, biomass

South Africa: clean coal, hydrogen and fuel cells, CCS, concentrated solar power

US: CCS, hydrogen and fuel cells, solar power, biofuels, smart grids, energy-efficient buildings, nuclear fission, nuclear fusion



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Find out more!

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Further information about international energy research cooperation can be found on the website of the European Commission's Directorate-General for Research

http://ec.europa.eu/research/energy/eu/policy/intl-coop/index_en.htm

SET plan

http://ec.europa.eu/energy/technology/set_plan/set_plan_en.htm

International Cooperation in FP7

http://cordis.europa.eu/fp7/energy/international-cooperation_en.html

Energy Research Website of the European Commission's Directorate-General for Energy

http://ec.europa.eu/energy/international/international_cooperation/international_cooperation_en.htm

Search for EU-funded projects

<http://cordis.europa.eu/search/>

EU climate change policies

http://ec.europa.eu/environment/climat/future_action.htm

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