



## Strategic Energy Technology Plan COM(2007) 723

### Commission Communication entitled 'Towards a Low Carbon Future'

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#### Summary

On 22<sup>nd</sup> November, the European Commission presented the European Strategic Energy Technology Plan (SET-Plan), a communication aimed at accelerating the development and implementation of low-carbon technologies. The SET-Plan proposes the delivery of joint strategic planning; effective implementation; an increase in resources; and a reinforced approach to international co-operation.

The SET-Plan commits the EU to set up a series of new priority European Industrial Initiatives that will target sectors which have the potential to add value on a pan-European level, including among others a European Wind Initiative and a Bio-energy Europe Initiative. To co-ordinate and strengthen national industrial research and innovation, the creation of a European Energy Research Alliance is proposed, which will ensure improved planning and foresight at European level for energy infrastructure and systems. The communication mentions setting up an information system to ensure a clear picture of energy technologies across Europe and to establish a process that will enable Member States to better plan energy technology research.

The Communication signals the need for increased funding in the research field and a detailed document on financing low carbon technologies will be presented later on in 2008.

## 1. Background

Energy technologies are crucial in the fight against climate change and securing world and European energy supply. The use of technology is vital in achieving the European climate change targets of limiting temperature to 2 degrees above pre-industrial levels. To meet the targets, we need to lower the cost of clean energy and put EU industry at the forefront of the rapidly growing low carbon technology sector.

Current trends and their projections into the future, however, present a different picture. Public and private energy research budgets in the EU have declined substantially since peaking in the 1980s in response to the energy price shocks. This has led to an accumulated under-investment in energy research capacities and infrastructures. If EU governments were investing today at the same rate as in 1980, the total EU public expenditure for the development of energy technologies would be four times the current level of investment.

The Strategic Energy Technology Plan (SET-Plan) aims to fill this gap and accelerate the development and implementation of low-carbon technologies, focusing more on joint

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planning, making better use of the potential of the European Research and Innovation area and fully exploiting the possibilities opened up by the Internal Market.

## 2. Main Issues

According to the SET-Plan, in order to meet the 2020 targets, the main EU technology challenges are:

- Making second generation biofuels competitive alternatives to fossil fuels, while respecting the sustainability of their production;
- Enabling commercial use of technologies for CO<sub>2</sub> capture, transport and storage through demonstration at industrial scale;
- Doubling the power generation capacity of the largest wind turbines;
- Demonstrating commercial readiness of large-scale Photovoltaic (PV) and Concentrated Solar Power;
- Enabling a single, smart European electricity grid able to accommodate the massive integration of renewable and decentralised energy sources;
- Bringing to mass market more efficient energy conversion and end-use devices and systems, in buildings, transport and industry, such as poly-generation and fuel cells;
- Maintaining competitiveness in fission technologies, together with long-term waste management solutions.

**The SET-Plan will deliver through four main pillars:**

### A. Joint strategic planning

Proposals include:

- The establishment of a Steering Group on Strategy Energy Technologies, early in 2008. The Group, chaired by the Commission, will be composed of high level government representatives from Member States, with a mandate of conceiving joint actions, through coordinating policies and programmes.
- The organisation of a European Energy Technology Summit in the first half of 2009. The objective would be to engage all stakeholders in the entire innovation system, from industry to customers, to review progress, disseminate achievements and foster cross-fertilisation between sectors.
- The creation of a European Energy Technology Information System, which will be an open-access information and knowledge management system. The aim of this data system will be to map technologies and capacities developed by the Commission's Joint Research Centre.

### B. Effective implementation

Proposals include:

- The Commission intends to strengthen industrial energy research and innovation through the creation of European Industrial Initiatives that target sectors which, due to barriers, scales of investment and risks involved, Community level collaboration will add most value. Based on the results of the consultation process, the Commission proposes to launch the following new priority initiatives, starting in 2008:
  - European Wind Initiative: focus on large turbines and large systems validation and demonstration (relevant to on and off-shore applications).
  - Solar Europe Initiative: focus on large-scale demonstration for photovoltaics and concentrated solar power.
  - Bio-energy Europe Initiative: focus on 'next generation' biofuels within the context of an overall bio-energy use strategy.
  - European CO<sub>2</sub> capture, transport and storage initiative: focus on the whole system requirements, including efficiency, safety and public acceptance, to prove the viability of zero emission fossil fuel power plants at industrial scale.
  - European electricity grid initiative: focus on the development of the smart electricity system, including storage, and on the creation of a European Centre to implement a research programme for the European transmission network.
  - Sustainable nuclear fission initiative: focus on the development of Generation-IV technologies.

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- The creation of a European Energy Research Alliance that will co-ordinate the efforts of research across European universities. To launch the process the Commission will, in the first half of 2008, open a structured dialogue with the CEOs of the National Research Institutes and bodies of a similar character (e.g. higher education establishments) with significant programmes.
- The initiation in 2008, of an action on European energy infrastructure networks and systems transition planning. The aim is to optimise and harmonise the development of low carbon integrated energy systems across the EU and its neighbouring countries by developing foresight in areas such as smart electricity grids, CO2 transport and storage, and hydrogen distribution.

## **C. Increased resources**

The increased budgets of the Seventh Framework Programme, as well as the Intelligent Energy-Europe Programme, are a step forward in terms of increased energy research and innovation investment. In the former, the average annual budget dedicated to energy research (EC and Euratom) will be €886m, when compared to the €574m of the previous programme. The European Investment Bank is also dedicating more resources to energy projects (€5-7 billion in the coming years).

To increase the quality and the number of researchers capable of facing the new energy innovation challenges, the Commission will use the Marie Curie Actions of the Research Framework Programme to boost the training of researchers in the energy field. The actions of the SET-Plan, such as the European Industrial Initiatives and the European Energy Research Alliance are expected to generate further education and training opportunities.

## **D. Reinforced approach to international co-operation**

For developing and emerging economies, the Community interest lies in helping those countries develop and grow in a more sustainable manner, while building new market opportunities for EU industry and ensuring effective collaboration in resources.

## **3. Next Steps**

The Commission is looking for an endorsement by EU member states during the March 2008 Spring European Council. The crucial issue of financing SET-Plan's ambitions will need to be decided during 2008. The Commission is expected to propose a separate communication on SET-Plan financing by the end of the year.

## **4. Opportunities for the region**

The proposals put forward can influence positively numerous areas within the region, notably the higher education institutions and economic clusters that lead in the climate change research sector. Industry and businesses could also benefit since one of the main objectives of the SET-Plan is to join and harmonise intelligence flow between research and industry. Finally, there is obvious potential to influence this policy through the European Energy Research Alliance, as the Commission intends to open a structured dialogue with higher education establishments with significant programmes.

## **5. Documentation**

For a list of all the SET-Plan Commission documents, as well as additional information on the subject: [http://ec.europa.eu/energy/res/setplan/communication\\_2007\\_en.htm](http://ec.europa.eu/energy/res/setplan/communication_2007_en.htm)

The SET-Plan was identified as part of the Energy Package proposed by the Commission in January 2007 and endorsed by Member State Heads in March 2007. For more information: [http://ec.europa.eu/energy/energy\\_policy/doc/2007\\_03\\_02\\_energy\\_leaflet\\_en.pdf](http://ec.europa.eu/energy/energy_policy/doc/2007_03_02_energy_leaflet_en.pdf)

For information on the European Joint Research Centre, please visit the following web-site: <http://ec.europa.eu/dgs/jrc/index.cfm>