

The EU strategy for promoting fuel cells and hydrogen technologies: the Fuel Cells and Hydrogen Joint Technology Initiative (JTI)

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With the rapid growth of energy demand and the approaching decline in fossil fuel production, new strategies and technologies are needed to improve energy security, mitigate the climate change, ensure a sustainable development, and increase the competitiveness of the European Union (EU) industries. Hydrogen, as an energy carrier, and fuel cells, as efficient energy converter, may play an important role in the successful transition to a more sustainable energy system. Although during the last years significant public funds have been directed to research, technological development and demonstration (RTD&D) on fuel cell and hydrogen technologies, there are still important technical and non-technical barriers to be overcome for commercial availability. This requires a more efficient and consistent EU long-term, integrated RTD&D and market strategy for this field.

In addition to the use of the traditional instrument of collaborative research in the EU 7th Framework Program, the European Commission has proposed to set up a Joint Technology Initiative Joint (JTI) for Fuel Cells and Hydrogen technologies (FCH JTI). The JTI is a new way of realising public-private research partnerships at European level. Public and private interests are brought together into a new, industry-led structure. This ensures that the jointly defined RTD&D programme will better match industry's needs and expectations, and accelerate the hydrogen and fuel cell technology acquisition and deployment process.

The RTD&D programme of the JTI takes into account the Implementation Plan produced by the industry-led European Hydrogen and Fuel Cell Technology Platform at the beginning of 2007 (HFP). This Plan contains a fully integrated RTD&D programme with prioritised concrete and measurable actions needed to deliver robust hydrogen supply and fuel cell technologies to the point of commercial take-off in the time-frame of 2010–2020.

The FCH JTI will contribute to deliver robust fuel cell technologies for commercialisation in 2010 for early market applications (e.g. handheld devices, portable generators, specialist vehicles), in 2015 for stationary applications (domestic and commercial Combined Heat and Power) and in 2020 for transport applications. It should also contribute to the supply 10–20% of the hydrogen energy demand with CO₂ lean or CO₂ free hydrogen by 2015.

The FCH JTI is expected to cover part of the high and medium priority R&D activities of the Implementation Plan, as well as basic research, and cross cutting activities (such as regulations, codes and standards, technology and environmental assessment). The JTI will also interface national and regional programmes on fuel cells and hydrogen technologies.

The implementation of the RTD&D programme of the JTI will be through calls for proposals. JTI projects will be open also to participation of third countries organisations. JTI is in course of developing its own international cooperation strategy.

The FCH JTI will be set up for a period of 10 years (with funding initially assured from the EU 7th Framework Program). The European Commission may thus contribute with around 470 M€ for the 6-year period until 2013. This should at least be matched by private investments in JTI projects. Other public sources of funding can be leveraged (such as national and regional funds).