

European Technology Platform for Zero Emission Fossil Fuel Power Plants

Vision Statement

To enable European fossil fuel power plants to have zero emission of CO₂ by 2020

Climate change is a serious threat that will have significant impacts worldwide and the EU is committed to continuing its leadership role in reducing CO₂ emissions and hence combating climate change. The Zero Emission Fossil Fuel Power Plants (ZEFFPP) Technology Platform will play a crucial role in enabling the EU to fulfil this commitment and has the vision that new competitive options will be developed and deployed for zero emission fossil fuel power plants within the next twenty years.

Advanced technologies for zero emission fossil fuel power generation have been identified as one of the energy priorities for the 7th Framework Programme of the European Commission. These topics are also important elements of national research programmes and in industrial research and development efforts within Europe. The formation of the Technology Platform therefore represents an important opportunity to give a significant impetus to research, development, demonstration and deployment activities in this field and to provide the basis for a critical mass programme in Europe.

A common vision, as described above, will create the basis for joint industry, government and research institute actions aimed at identifying and developing a portfolio of technologies, taking into account time, funding, environment, public acceptance, fiscal and regulatory issues necessary for their successful deployment.

Massive reductions of CO₂ from fossil fuel power generation could be achieved through the introduction and deployment of zero emissions systems that involve CO₂ Capture and Geological Storage (CCS). Significantly improving the efficiency of the fossil fuel to electricity conversion process will be an essential element of this process and contribute to emission reduction and conserve resources. By 2020 it is targeted that fossil fuel power plant should be capable of delivering in an economically viable manner near zero emission in terms of CO₂ or in a position to be extended to include CO₂ capture. With full deployment worldwide, CO₂ emissions could potentially be reduced by ~100GtCO₂/yr over a 50 year period, thus firmly establishing zero emission fossil fuel energy as a major component in the carbon abatement portfolio. The development of the innovative technologies required for achieving this vision will place Europe in a forefront position in terms of industrial/economic competitiveness.

The focus will be on an integrated approach embracing all technologies and technology/societal infrastructure issues needed to support large-scale deployment. A critical issue will be the development of a framework and market conditions which together will create the demand for these technologies and hence non-technical barriers will be specifically addressed, particularly those of policy, regulation, fiscal and public perception. An important aspect will be the improved co-ordination of Member State and EC programmes with those of industry and the research community. Key outputs will be a Strategic Research Agenda that lays out the way forward for Europe in this area for the immediate timeframe and out to 2030+ and, equally important, a Strategic Deployment Document that addresses how the technology will be deployed into the market place. These important documents will provide the pathway with interim aim points for Europe to achieve the desired vision. This will play a crucial role in enabling the EU to maintain its leadership position in combating climate change while still ensuring global competitiveness and long term security of energy supply.