

# CAPTURE AND GEOLOGICAL STORAGE OF CO<sub>2</sub>

## ACCELERATING DEPLOYMENT

ENERGY SAVINGS  
LET'S GO FAST  
IT'S HEATING UP

Energy from fossil fuels has enabled the developed world to achieve a high standard of living, and developing countries are also counting on this energy source to achieve the same. Given this common aspiration, the demand for energy – mainly based on fossil fuels (oil, natural gas and coal) – is expected to rise sharply in the coming decades, leading to an unsustainable increase in greenhouse gas emissions. Among these gases, CO<sub>2</sub> will represent the main share. To find solutions to help combat CO<sub>2</sub> emissions and fight global warming, we need to simultaneously:

- 1 - Reduce energy consumption
- 2 - Reduce the carbon content in the energy mix
- 3 - Capture CO<sub>2</sub> and store it in underground geological formations

CO<sub>2</sub> capture and storage has the potential to account for 20% of global greenhouse gas reductions. A number of initiatives are underway to encourage widespread deployment. Pilot sites are being run around the world and several countries and federations are already establishing directives and regulations to guide the development of this emerging technology.

To build on the growing success of the first two international symposia on emission reduction and CO<sub>2</sub> capture and geological storage, held in Paris in 2005 and again in 2007, IFP, ADEME and BRGM are organising a third event on the same topic in November 2009. This time, the focus will be on the urgency of industrial deployment. Indeed, the IPCC 4th assessment report indicates that the world must achieve a 50 to 85% reduction in CO<sub>2</sub> emissions by 2050 compared to 2000, in order to limit the global temperature increase to around 2°C. Moreover, IPCC stresses that a "business as usual" scenario could lead to a temperature increase of between 4°C to 7°C across the planet.

Researchers, manufacturers, economists and financiers from all involved sectors, and public- and private-sector decision-makers who make economic and financial choices in this area, are the targeted audience for this symposium, which takes a global and cross-disciplinary approach.

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2009





**THE MAIN THEMES**

**Regulatory framework and strategies for enabling CCS deployment**

- National/regional/international frameworks being set up and remaining disparities in CCS deployment.
- Storage site selection methodologies; monitoring and verification protocols for CO<sub>2</sub> retention.
- How can CCS be deployed quickly and effectively? What are the infrastructure needs? How can the industry guarantee it will have the ability and capacity to respond to the challenge?

**Demonstration projects**

- Technologies that have been selected for capturing, transporting and storing CO<sub>2</sub>.
- Knowledge acquired while developing a number of cases operated worldwide.
- Remaining disparities to be dealt with to accelerate early deployment of CCS worldwide.

**Technological challenges**

- Pre- and post-combustion capture technologies and review of their current efficiency levels.
- CO<sub>2</sub> transport from compressors to wellhead.

- Establishing and maintaining formation injectivity, and site monitoring techniques.
- Uncertainties in understanding and modelling the dynamics of CO<sub>2</sub> in the subsurface.

**Structuring the CO<sub>2</sub> sector: finance, capacity, society**

- Expected cost of capture and storage in 2012 based on previous experiences and ongoing demonstrations.
- Which cost reduction scenario is compatible with a reasonable increase in CO<sub>2</sub> permits or carbon value to ensure CCS economic competitiveness?
- Lessons on local public acceptance drawn from existing projects.



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