

Carbon Capture and Storage
A promising technology towards a lower carbon World

Rome, 3rd October 2008

New Fiera di Roma - *Via Portuense, 1645 – 1647*
East Entrance - Hall 5 - VESTAS Conference Room

Afternoon Session: 2.30pm - 6.00pm

Overview

It is widely recognised that fossil fuels will still play a major role in the energy mix for several decades to come: in the transport sector oil products will continue to almost represent the key option, and electricity demand - notwithstanding a fast growth of renewable energies - will require increasing amount of natural gas and coal. This business-as-usual pattern implies growing concerns in terms of energy security, energy availability, and consequences in terms of climate change.

According to IEA's Energy Technology Perspectives (ETP), the baseline scenario foreshadow a 130% rise in CO₂ emissions in the absence of policy changes by 2050. In particular, power generation will continue to lead world CO₂ emissions, with coal estimated to remain the primary source of electricity generation and increasing its share from the actual 40% to about 50%. Since about 70% of all anthropogenic CO₂ emission are energy related, a responsible energy policy is needed: boosting R&D, delivering cleaner alternative forms of energy, increasing energy efficiency and developing new promising clean technologies in the most efficient and cost-effective manner. This will reduce the impact of climate change and promote a sustainable use of energy also for the 1.6 billion of people that still today have no access to modern energy services.

Among the different options available, CO₂ capture and storage (CCS) represents one of the most important technology for reducing greenhouse gas emissions.

According to WEC Report, Carbon Capture and Storage: a WEC "Interim Balance", CCS has the theoretical potential to reduce the emissions from coal-based power plants by 80-85%, even if capture technologies requires additional energy, which reduces overall efficiency. In IEA' s ETP most ambitious (and challenging) scenario, CCS can contribute between 20 and 28% of the achievable global CO₂ emission reductions.

European Union has recognised CCS as a crucial element for pursuing the 2020 targets and in November 2007, the EU Strategic Energy Technology Plan (SET-Plan) included the demonstration of the use of CCS in fossil fuels-based power generation as one of the areas on which European technology development should focus resources. Moreover, European Commission at the beginning of 2008 endorsed a proposal of directive on the CO₂ geological storage aimed to create the legal framework for its implementation.

However, several regulatory issues have to be defined in order to make CCS pilot projects successful, enhance its cost reduction and commercial application, boosting R&D as well as promoting CCS implementation among all Member States avoiding market distortions.

Achieving the CCS potential CO₂ emission reductions will require to work out adequate solutions to many technical, regulatory, economic and financial issues. For instance CCS technology is already known and implemented in some industrial applications but not yet incorporated into large-scale power plants. Public and private funding in R&D have a very pivotal role to play in mitigating the decrease of the efficiency performance of CCS-equipped generating plants and in reducing CCS costs to make technology marketable.

A mix of financial government incentives should also be adopted in order to assure the largest engagement of the industries on the CCS, mainly through international cooperation.

The inclusion of this technology into international mechanisms such as CDM projects could encourage companies to realise CCS power plants in developing countries, where the bulk of the future capacity will be installed. Likewise, since CO₂/t value influences significantly the economics of CCS projects, it would be extremely important to reach a global, stable and predictable CO₂ price.

Finally, CO₂ transportation and storage activities need a regulatory framework and public opinion safety concerns about eventual sink leakages will require a careful management and adequate reassurances.

Many aspects are to be discussed about and they provide for the extent of the challenge we have to face to make CCS able in decreasing "world carbon intensity". The goal for all of us is to contribute in building a "lower carbon world" for the benefit of all.

14.30 – 15.00

Presentation WEC Study – Clean Fossil Fuels System

Ugo Dionigi

Technical Secretary WEC Italy

Presentation EU SET Plan

Raffaele Liberali

Director Energy, Directorate-General for Research, European Commission

15.00 – 16.00

Round Table:

“Institutional and Regulatory Issues in CCS development”

Marcello Capra

Member of Government Group of EU Zero Emission Platform, Italian Ministry of Economic Development

Roberto Garosi

Member of EU Zero Emission Platform

Andrea Ketoff

General Director, Assomineraria

Luigi Napoli

Development Department Assoelettrica

Giorgio Palazzi

Director Technology Department for Energy, Renewables and Energy Efficiency, ENEA

16.00 -18.00

“The Industry Point of View”

Enzo Caetani

Managing Director, Tecnimont

Mario Marchionna

Head of Planning and Operating Control Corporate Research Projects, Eni

Rajiv Menon

General Manager - Commercial & Business Development TICB - Maire Tecnimont Group

Giuseppe Montesano

Head of Environmental Policies Regulation and Environment, Enel

Mario Porcu

Chairman Sotacarbo

Alessandro Possenti

Senior Project Manager, Tecno Project Industriale

Giampaolo Russo

Director of Regulatory and Public Affairs of Edison

Marcus Scholz

Sales Director IGCC & Syngas Applications, GE Energy - Europe

Frédéric Vény

Joint Managing Director Sofregaz – Maire Tecnimont Group