

ENEL: INAUGURATION OF ITALY'S FIRST CCS PILOT PLANT IN BRINDISI

- *Fulvio Conti, Gunther Oettinger, Stefania Prestigiacomo, Massimo Ferrarese and Domenico Mennitti launched the first test for promising "zero-emissions" technology supported by the EU and within the joint strategic testing agreement signed with ENI in 2008.*

Brindisi, March 1st, 2011 – Today Enel inaugurated an innovative pilot plant for capturing and storing carbon dioxide at its Federico II power plant in Brindisi. Joining Enel CEO and General Manager **Fulvio Conti** for the ceremony were the EU Energy Commissioner, **Gunther Oettinger**, the Italian Minister for Environment, Land and Sea, **Stefania Prestigiacomo**, the President of the Brindisi Province, **Massimo Ferrarese**, and the mayor of Brindisi **Domenico Mennitti**.

The pilot plant in Brindisi is the first of its kind in Italy, one of the first in Europe and it is part of joint activities set forth by the strategic agreement signed with ENI in 2008. It will be able to treat 10,000 cubic meters per hour of fumes from the Federico II coal plant, separating out 2.5 metric tons of carbon dioxide (CO₂) per hour, up to a maximum of 8,000 metric tons per year, equivalent to the CO₂ absorbed by around 800,000 trees or a 10 Km² forest. Thanks to innovative Carbon Capture & Storage (CCS) technologies, CO₂, one of the major greenhouse gases, can be captured from the fumes discharged from fossil fuel plants and, once liquefied, can be transported and stored in a geologically secure site.

Enel CEO and General Manager Fulvio Conti commented, "*The completion of this pilot plant in Brindisi is an important step forward in the development of new technologies upon which the world's future energy system will be built. Carbon dioxide capture and sequestration will allow the further use of fossil fuels, drastically eliminating emissions of CO₂, which is not in itself a polluting gas but it is thought to be chiefly responsible for the greenhouse effect. It will be, along with renewables and nuclear power, a winning response to the challenge of having steady supplies of environmentally-friendly energy. Enel is a world leader in research and technological development to improve the performance of thermal power plants, which are destined to play an important role for decades to come. In Italy, using a balanced mix of energy from renewables, clean coal, nuclear power and gas, we should be able to cut the electricity bills of households and businesses to bring them in line with those of other European countries.*"

The goal, in line with the European "Zero Emission Fossil Fuel Power Plants" Platform, is to make zero-emission fossil fuel plants a reality within a decade. The post-combustion capture technology used in Brindisi is the most mature and appropriate for retrofitting existing thermal power plants. Following the combustion process, the CO₂ is separated from the fumes using a chemical absorbent system. The absorbent is then heated with

steam and releases the captured CO₂ in pure form, ready to be liquefied and stored. The development of the capture project is part of a combined Enel and ENI project aimed at testing the first integrated Italian pilot. CO₂ released by the Brindisi power plant will be transported at the ENI/Stogit site in Cortemaggiore where it will be injected and permanently stored underground thus acquiring useful know-how to design future applications of such technology on a larger scale. The pilot storage plant is expected to be operational by 2012. The design stage has been completed and Enel and ENI are awaiting for the final authorizations. In the meantime basic monitoring has already been carried out for some months to assess existing CO₂ levels in the area under exam.

The tests in Brindisi will help Enel gain more experience in designing and operating post-combustion carbon capture plants, in streamlining the process and in assessing its environmental impact, thereby improving Enel's know-how. The first application on an industrial scale will be at Enel's new coal plant in Porto Tolle (Rovigo). The plant will treat 810 thousand cubic meters of fumes per hour (40% of those from one of three 660 MW units operating at the plant), separating up to 1 million metric tons of CO₂ per year, which will be stored in a saline aquifer deep below the Adriatic Sea.

The European Union granted Enel 100 million euros in funding through the European Recovery Programme for Energy for its pilot project in Brindisi and for preliminary work on the Porto Tolle plant.

In further demonstration of its commitment in this area, Enel is also part to international agreements for developing CCS in China and South Korea.

The "Federico II" thermal power plant plays a key role in the generation of electricity in Italy. It is made up of four 660 MW coal-fired units with a total installed capacity of 2,640 MW. Its use of sophisticated pollution abatement equipment and its receipt of the ISO 14001 environmental certification make it one of the most efficient and clean plants running. The plant started operations in 1997.