

## A safe and Eco-Friendly Mix

Thanks to CCS it is possible to continue using fossil fuels – which have proven to be safe, efficient and reliable – with non or low CO<sub>2</sub> emissions.

In parallel with the development of CCS techniques, increasing the efficiency of power plants has to be the other priority.

Alongside the fact that increasing power plant efficiency makes economic sense, either alone or as part of a CCS project, it is also necessary because it saves scarce natural resources and cuts emissions. Combining increasingly efficient power plants with CCS technologies would rapidly and significantly reduce their greenhouse gas emissions.

### Combining Renewables, Efficient Plants and CCS

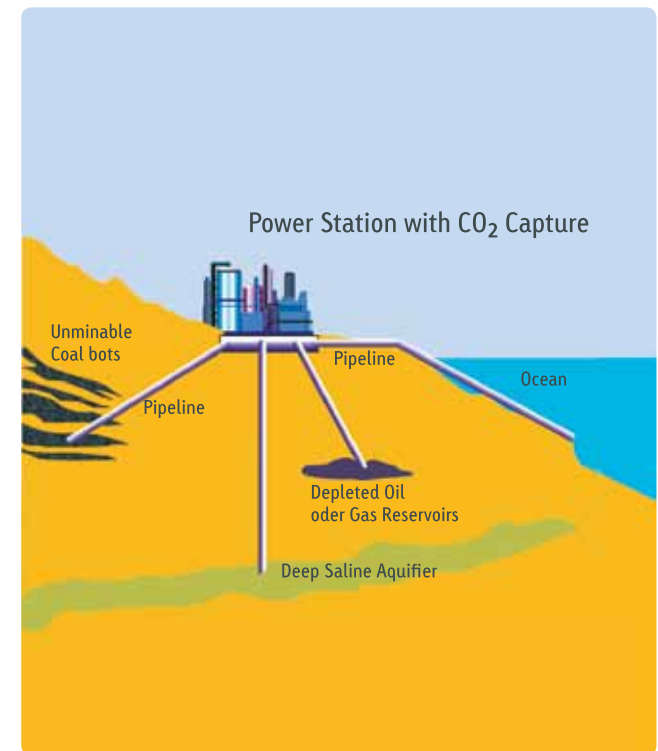
While the need to develop valuable renewable energies is fundamental, it is imperative to remember that the widespread use of fossil fuel for base-load (working 24 hours/day and 7 days/week) electricity generation cannot be changed in the short or medium term. It is however possible for the electricity generation sector to substantially reduce its CO<sub>2</sub> emissions by developing the use of CCS and increasing plant efficiency, alongside using more Renewables.



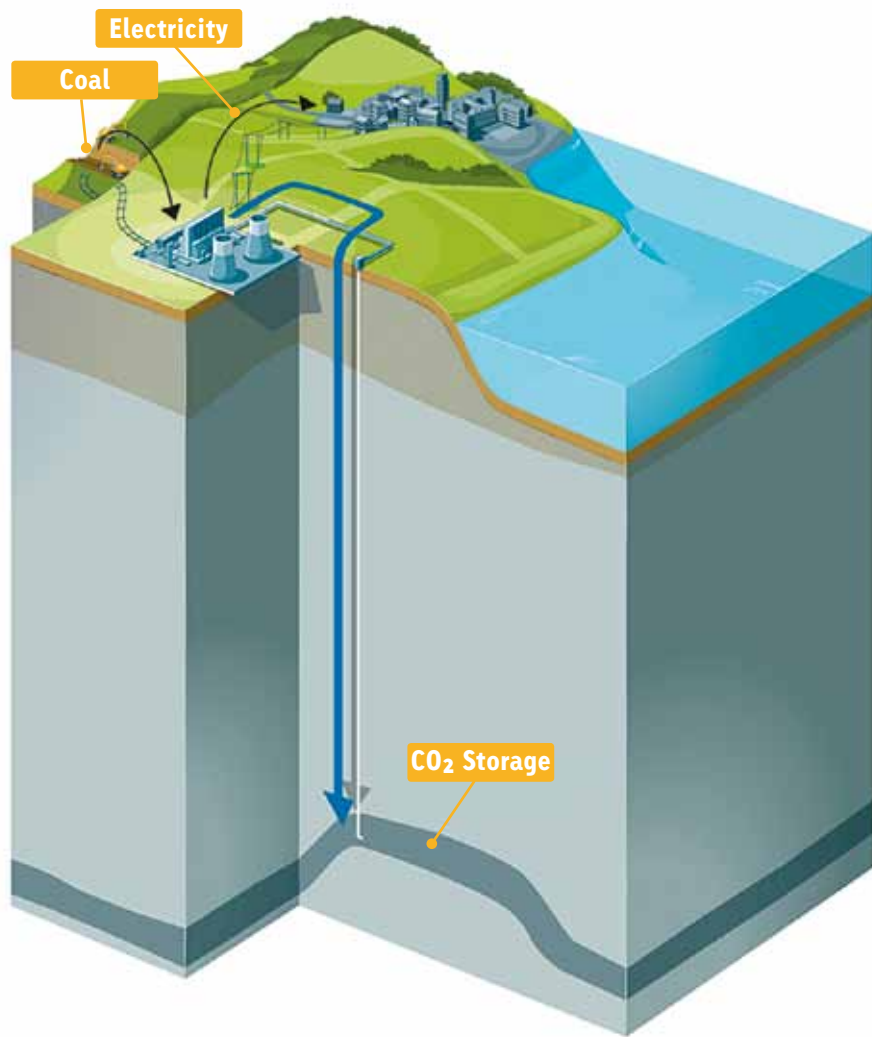
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## Carbon Capture and Storage – Why?

Leaflet 1 of 2



European Power Plant Suppliers Association



## Carbon Dioxide The target

Any form of combustion, such as the operation of a fossil fuelled power plant, generates Carbon Dioxide (CO<sub>2</sub>). When large quantities are emitted into the atmosphere, this contributes to climate change. In its 2007 Spring Council, the EU targeted a 20% reduction in CO<sub>2</sub> emissions by 2020.

Carbon Capture and Storage (CCS) is a process that substantially reduces the emission of CO<sub>2</sub> into the atmosphere.

### ■ Fossil Fuels: The Source

Fossil fuels, based on carbon, such as oil, gas and coal, extracted from below the ground constitute the backbone of the energy sources we use to generate electricity. When we burn these fuels, CO<sub>2</sub> is generated.

### ■ Carbon Capture and Storage: The Solution

The goal of Carbon Capture and Storage is to prevent the CO<sub>2</sub> generated from being released into the atmosphere. Instead, the CO<sub>2</sub> is stored underground.

### ■ Proven Technology in the Oil and Gas industries

CCS has long been used by the Oil Industry (in a process known as Enhanced Oil Recovery). This involves injecting CO<sub>2</sub> deep underground into oil reservoirs – so that it increases the pressure and forces more oil out.

CO<sub>2</sub> can be stored in deep saline aquifers, which hold the CO<sub>2</sub> in the same way that a sponge holds water within its pores. Like the water in a sponge, liquefied CO<sub>2</sub> can be locked indefinitely within aquifer layers, which are abundant on Earth.

The Utsira formation in the North Sea alone can store the CO<sub>2</sub> emissions from all European power plants for at least 600 years.

CO<sub>2</sub> storage has proven environmentally safe in all experiments conducted so far. 3 million tonnes of CO<sub>2</sub> every year are stored in test sites located in North America, the North Sea and the Sahara.

### ■ Application to Fossil Fuelled Power Plants

Applied to the electricity generation domain, CCS can be used to permanently store the CO<sub>2</sub> resulting from the operation of a fossil fuelled power plant, thus preventing almost all greenhouse gas emissions into the atmosphere.