

# FACTSHEET CCS

INFORMATION ABOUT CCS – CARBON CAPTURE AND STORAGE

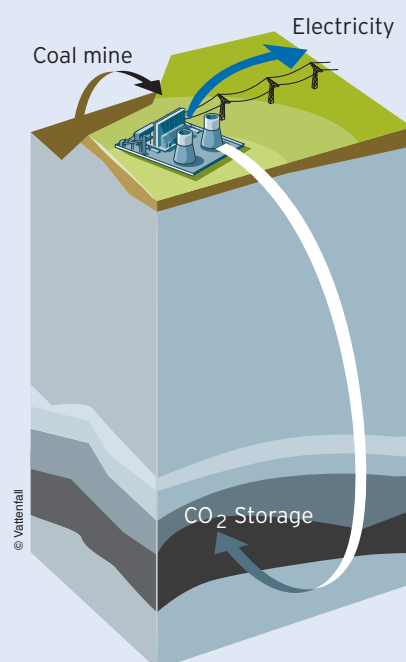
## CCS DEMONSTRATION PROJECT IN JÄNSCHWALDE

**Vattenfall intends to build a CCS demonstration plant in Jänschwalde, in the German federal state of Brandenburg, that should commence operations in 2015. The installation will investigate both Oxyfuel and Postcombustion.**

The integration and arrangement of two different CO<sub>2</sub> capture technologies has been established as follows: A new unit carrying forward the Oxyfuel process will be built, holding a capacity of 250 MW<sub>el</sub>. At the same time, the Postcombustion process will be retrofitted via the flue gas path of an existing boiler, capturing an equivalent of 50 MW. This combination allows both technologies to be demonstrated and developed for commercial application. A feasibility study investigated both the concept and design of post combustion capture and the Oxyfuel process at demonstration scale. Both techniques were considered from a thermo-dynamic point of view, as well as regarding arrangement and integration into the complete cycle.

Integrating two capture technologies in one demonstration plant will increase the complexity of the project, but will also deliver more important results regarding future commercial implementation of CCS. Also, the commercial phase will require the retrofit of existing power plants with Postcombustion technology, while at the same time, constructing new power plants/units which use other

### CARBON CAPTURE AND STORAGE (CCS)



CCS stands for the technologies used to capture and store the carbon dioxide (CO<sub>2</sub>) generated in combustion processes, for example in a power plant. Essentially, three different processes are available: Oxyfuel, Postcombustion and Precombustion (IGCC). Today, all three technologies are available in the Vattenfall Group. The common aim of all these processes is to produce a concentrated stream of CO<sub>2</sub>, compress it and then store it underground instead of releasing it into the atmosphere.

capture technology options (e.g. Oxy-fuel) at the same location. A big commercial advantage would exist if both technologies could use the same CO<sub>2</sub> transport and storage infrastructure. This project will deliver the answers to these important questions.

The demonstration plant will allow electricity generation using carbon capture and will feed the electricity into the German transmission grid no later than 2015. It is the link between the pilot plant, with a thermal capacity of 30 MW, and

future commercial power plants with capacities up to 1000 MW<sub>el</sub>.

The demonstration project has been ranked as the most advanced CCS demonstration scheme within the European Union. It has thus received funding of €180 million from the "European Energy Programme for Recovery" (EEPR). Vattenfall estimates the investment cost to total to €1.5 billion. With a CO<sub>2</sub> capture rate of well over 90%, up to 1.7 million tonnes per year of this greenhouse gas could be kept out of the atmosphere.



Commissioning 2015
Oxyfuel-Unit ( 250 MW <sub>el</sub> ) + Post-Combustion (50 MW <sub>el</sub> )
Net efficiency 36 %
CO <sub>2</sub> capture (full load) 1,73 Mio t/a
CO <sub>2</sub> capture rate > 90%
Investment costs app. 1.5 billion €



As at: June 2010

Read more about Vattenfall's project on CCS at [www.vattenfall.com/ccs](http://www.vattenfall.com/ccs)