

# Newsletter

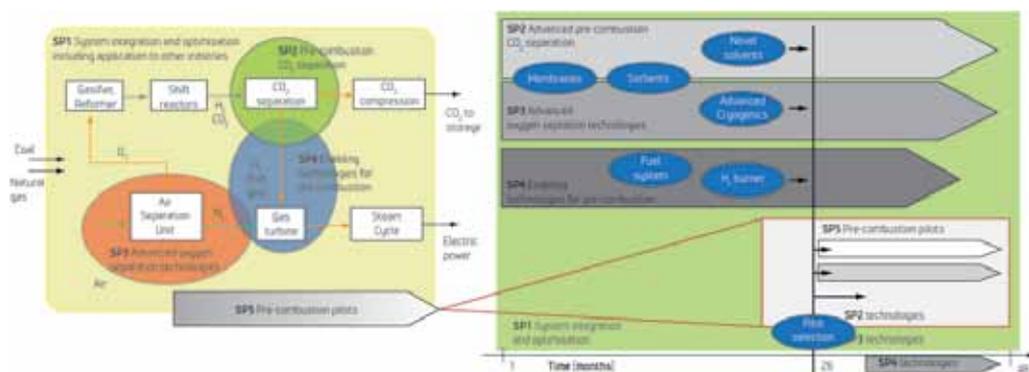
## 2-2009

# DECARBIT progress ultimo 2009

**DECARBIT** responds to the urgent need for further research and development in advanced pre-combustion capture techniques to substantially reduce emissions of greenhouse gases from fossil fuel power plants. The project will accelerate the technology development and contribute to the deployment of large-scale carbon capture and storage (CCS) plants, in line with the adopted European policies for emission reductions. The project focus is to pursue the search for improved and new pre-combustion technologies. DECARBIT is designed as a Collaborative Large-scale Integrating Project.

## Entering SECOND phase

has now passed the first two years and will during 2010 enter into the second phase, where pilot testing of selected technologies will be the main part of the work. The three sub-projects that will progress with pilot testing are SP2 (Pre-combustion separation), SP3 (Oxygen separation) and SP4 (Hydrogen combustion) which all have during the first two years performed studies on various technologies within the pre-combustion CO<sub>2</sub> capture route. In the second phase, the main part of the work will be done within SP5 (Pre-combustion pilots). The actual technologies to be pursued during phase II of DECARBIT will be selected following a thorough application process, in which the partners will need to describe their planned pilot testing in detail based on the results from phase I. The evaluation of these proposals will be performed by the "Technical and Exploitation Advisory Committee" under the leadership of Prof. dr. Klaus Hein which will result in a recommendation to the DECARBIT board. It is expected that the project will pursue 3-5 selected technologies for pilot-scale testing during phase II.



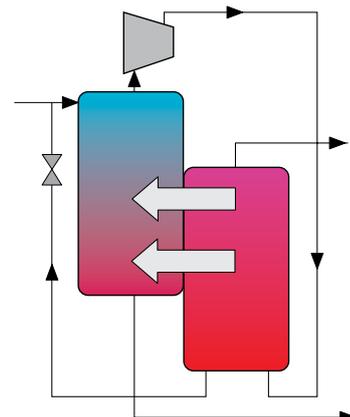
## Advanced oxygen separation technologies:

### Advanced cryogenic technologies

The main goal of SP3 is to reduce the energy use for oxygen production from air. One of the aims of WP3.3 is to investigate novel distillation column concepts. The efficiency of a distillation column can be increased by applying heat exchange along its length. This approach is used in a Heat Integrated Distillation Column (HIDiC). A HIDiC is a distillation column that is split into two parts that are positioned next to each other. Because they operate at different pressures, thermal energy can be transferred along the length of the columns.

Various theoretical and practical studies comparing HIDiCs to conventional columns report savings over 50%. Pilot scale HIDiCs are being tested in Japan; in Europe the activities have been limited to theoretical studies and small scale installations. So far, no savings estimate for cryogenic air distillation has been reported.

Current state-of-the-art air distillation processes use multiple columns in series. Thermal integrating is achieved by having their



feeds and products flow through various heat exchangers. Work is in progress that aims at predicting and verifying the potential gains of using a HiDiC for air separation. The results will be compared to current state-of-the-art air distillation processes.

## CESAR progress ultimo 2009

### Solvent process validation studies

Our pilot plant in Esbjerg was successfully upgraded and is operational for the testing of the CESAR solvents. A MEA test run has been performed with the upgraded plant. Laboratory pilot plant tests of various solvents have been performed and reported and are ongoing. The CESAR 1 campaign at Esbjerg is ongoing. The CESAR 2 campaign will run early March 2010.

Environmental impact assessment measurements will be performed during all test campaigns.

### CESAR Website

CESAR website is alive and continuously updated with the latest news and facts ([www.co2cesar.eu](http://www.co2cesar.eu))

### Dissemination

CESAR is preparing the 2010 CCS conference, to be held April 19th – 22nd of 2010 in Rotterdam, the Netherlands. The conference will be organized in cooperation with CAESAR, DECARBit, CO2NET and CO2GEONET.

This conference will give you an excellent opportunity to exchange views with European key players and to get updated on the newest findings on CCS. We will provide you a program with enough time for networking, excellent research results and visionary key note speakers. So please note this date in your agenda.

The conference will take place in Rotterdam, The Netherlands. The city with the ambition to reduce CO<sub>2</sub> emissions with 50% in 2025. It

will kick-off with an ice breaker party on the evening of April 19th, followed by a two days conference on April 20th and 21st. A visit to a local CCS plant will be organized on the 22nd.

If your project wants to give a presentation at the conference, please send in a short abstract (1/2 A4) to [peter.vanos@tno.nl](mailto:peter.vanos@tno.nl) and the



organizing committee will try to fit it into the program. No papers are needed. The presentations will be accessible for participants at the website after the conference.

**Conference website is: [www.ccs-conference.eu](http://www.ccs-conference.eu).**

Registration will open at the beginning of January.

## News from the European Benchmarking Task Force (EBTF)

European Benchmark Task Force activities are ongoing in cooperation with CAESAR and DECARBit concentrating on defining a common framework for technical and economic assessment of IGCC and post combustion CCS plants. Soon the CESAR deliverable of the work so far will be published on the website.



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