CO2 Enhanced Separation and Recovery

From 2008-02-01 to 2011-05-31, closed project

Objective

CESAR aims for a breakthrough in the development of low-cost post-combustion CO2 capture technology to provide economically feasible solutions for both new power plants and retrofit of existing power plants which are responsible for the majority of all anthropogenic CO2 emissions (worldwide, approx. 5,000 power plants emit around 11 GtCO2/year). CESAR focuses on post-combustion as it is the only feasible technology for retrofit and current power plant technology. Moreover, analysis of the current R&D in Europe shows that there is yet no follow-up to the post-combustion work in the CASTOR project while R&D aimed at other types of carbon capture technologies have been accommodated for. The primary objective is to decrease the cost of capture down to 15€/tCO2. CESAR aims at breakthroughs via a combination of fundamental research on Advanced Separation Processes (WP1), Capture process modelling and integration (WP2) and Solvent process validation studies (WP3) with duration tests in the Esbjerg pilot plant. CESAR will build further on the successes and high potential ideas from the FP6 integrated project CASTOR. Moreover, the pilot built in this project will be used for CESAR. Novel activities and innovations CESAR focuses at are: -Novel (hybrid) solvent systems -New high flux membranes contactors -Improved modeling and integration studies on system and plant level -Testing of new solvents and plant modifications in the Esbjerg pilot plant In the Esbjerg Pilot novel technologies are assessed and compared with mainstream techniques to provide a fast track towards further scale-up and demonstration. CESAR unites leading organisations within the field of CO2 capture, covering the whole value chain from research institutes to end-users. The consortium consists of 3 research organizations, 3 universities, 1 solvent supplier, 1 membrane producer (SME), 3 equipment suppliers, 2 oil and gas companies and 6 power generators (= industrial commitment).

Related information

Result In Brief

Preventing emissions from reaching the atmosphere

Report Summaries

Final Report Summary - CESAR (CO2 Enhanced Separation and Recovery)
Coordinator

NEERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO

ANNA VAN BUERENPLEIN 1
2595 DA DEN HAAG
Netherlands

See on map

Activity type: Research Organisations

Administrative contact: Peter Van Os
Tel.: +31 15 2692227
Fax: +31 15 2692111

Contact the organisation

Participants

GE POWER SWEDEN AB
N/A
601 87 NORRKOPING
Sweden

See on map

Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

Administrative contact: Peter Nilsson
Tel.: +46 70 51 87 710
Fax: +46 470762132

Contact the organisation

BASF SE
CARL BOSCH STRASSE 38
67063 LUDWIGSHAFEN AM RHEIN
Germany

See on map

Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

Administrative contact: Hugo Rafael Garcia Andarcia
Tel.: +49 621 6052375
Fax: +49 621 6052411

Contact the organisation
DOOSAN BABCOCK LIMITED
MANOR ROYAL CRAWLEY BUSINESS QUARTER DOOSAN HOUSE
RH10 9AD CRAWLEY
United Kingdom
EU contribution: EUR 34 027
See on map
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)
Administrative contact: Barrie Shepherd
Tel.: +44 1418853977
Fax: +44 1418853860
Contact the organisation

ELECTRABEL SA
Boulevard du Regent, 8
1000 BRUXELLES
Belgium
EU contribution: EUR 54 009
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)
Administrative contact: Gustaaf Boon
Tel.: +3223820565
Fax: +3223820241
Contact the organisation

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS
RUE MICHEL ANGE 3
75794 PARIS
France
EU contribution: EUR 112 500
Activity type: Research Organisations
Administrative contact: Eric Favre
Tel.: +33383175390
Fax: +33 3 83 32 29 75
Contact the organisation

E. ON UK PLC
WESTWOOD WAY
CV4 8LG COVENTRY
United Kingdom
EU contribution: EUR 60 000
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)
Administrative contact: John Bateman
Tel.: +442476192571
Fax: +44 115 9024006
Contact the organisation
ENGIE
1 PLACE SAMUEL DE CHAMPLAIN
92400 COURBEVOIE
France
See on map

Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)
Administrative contact: Samuel Sayset
Tel.: +33 1 49 22 47 33
Fax: +33 1 49 22 57 27
Contact the organisation

IFP Energies nouvelles
AVENUE DE BOIS PREAU 1 & 4
92500 RUEIL MALMAISON
France
See on map

Activity type: Research Organisations
Administrative contact: Gaele Valet
Tel.: +33 1 4752 6052
Fax: +33 1 4752 7064
Contact the organisation

NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU
HOGSKOLERINGEN 1
7491 TRONDHEIM
Norway
See on map

Activity type: Higher or Secondary Education Establishments
Administrative contact: Hallvard Svendsen
Tel.: +47 7359 4100
Fax: +47 7359 4080
Contact the organisation

POLYMEM
3 RUE DE L INDUSTRIE ZONE DE VIC
31320 CASTANET-TOLOSAN
France
See on map

Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)
Administrative contact: Olivier Lorain
Tel.: +33 5 61 317866
Fax: +33 5 61 317870
Contact the organisation
PUBLIC POWER CORPORATION S.A.  
CHALKOKONDYLI STREET 30  
104 32 ATHINA  
Greece  
EU contribution: EUR 30 000

Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

Administrative contact: Abraham Mizan  
Tel.: +30 210 5241280  
Fax: +30 210 5230068

Contact the organisation

RWE POWER AG  
HUYSSENALLEE 2  
45128 ESSEN  
Germany  
EU contribution: EUR 22 500

Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

Administrative contact: Peter Moser  
Tel.: +49 02011228562  
Fax: +49 02011227408

Contact the organisation

SIEMENS AKTIENGESELLSCHAFT  
WERNER-VON-SIEMENS-STR. 1  
80333 MUNCHEN  
Germany  
EU contribution: EUR 120 000

Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

Administrative contact: Guenther Haupt  
Tel.: +499131186379  
Fax: +499131181515307

Contact the organisation

STIFTELESEN SINTEF  
STRINDVEIEN 4  
7034 TRONDHEIM  
Norway  
EU contribution: EUR 591 250

Activity type: Research Organisations

Administrative contact: Thor Mejdell  
Tel.: +47 98243487  
Fax: +47 73596995

Contact the organisation
**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Administrative contact:** Mona Late
Tel.: +4790981326
Fax: +4773584282

Contact the organisation

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Administrative contact:** Ole Biede
Tel.: +45 2787 5566
Fax: +45 3385 8586

Contact the organisation

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Administrative contact:** Bernd Schallert
Tel.: +492096015368
Fax: +49 209 601 5040

Contact the organisation

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Administrative contact:** Philip Cahill
Tel.: +441793893622
Fax: +441793896251

Contact the organisation
VATTENFALL RESEARCH AND DEVELOPMENT AB
814 26 ALVKARLEBY
Sweden
EU contribution: EUR 55 000

Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

Administrative contact: Leif Linanki
Tel.: +4682396139
Fax: +4687396802
Contact the organisation

TECHNISCHE UNIVERSITAET KAIERSLAUTERN
GOTTLIEB DAIMLER STRASSE
67663 KAIERSLAUTERN
Germany
EU contribution: EUR 227 520

Activity type: Higher or Secondary Education Establishments

Administrative contact: Berthold Klein
Tel.: +49 631 205 3602
Fax: +49 631 205 4380
Contact the organisation

DONG ENERGY WIND POWER HOLDING AS
Kraftvaerksvej 53
7000 Fredericia
Denmark
EU contribution: EUR 255 000

Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

Administrative contact: Jacob Knudsen
Tel.: +45 30949951
Contact the organisation

Subjects
Other Energy Topics

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