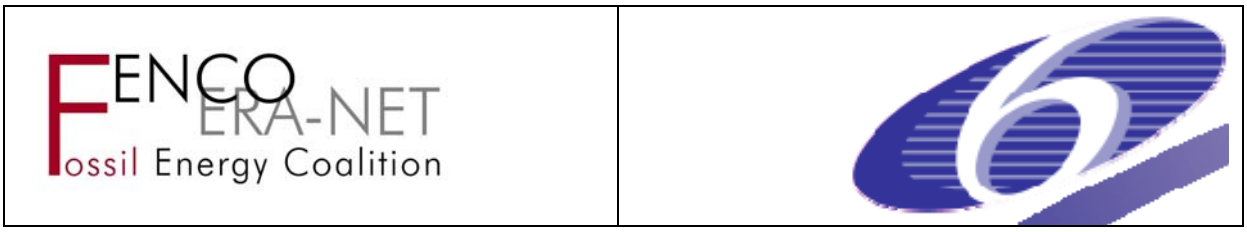

Project no. ERAC-CT-2005-016210

Project acronym
FENCO-ERA

Project title
Promotion of an Integrated European and National R&D Initiative for Fossil Energy Technologies towards Zero-Emission Power Plants

Instrument: Coordination Action

Thematic Priority: ERA-NET: Energy Technology

Laying the groundwork for Joint Transnational Research

Monitoring report concerning the implementation of common calls

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Organisation name of lead contractor for this working document:
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Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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1. Introduction

From February 2007 to the end of 2008 FENCO ERA-net developed and executing a joint Call for Proposals. From a procedural viewpoint, this Call for Proposals could be considered effective, efficient and successful although of limited size. The FENCO ERA-net call procedure looks like an excellent instrument for further joint research.[1]

This report describes the outcome of this joint Call for Proposals: the selected projects themselves. These were:

- StorageUtsira
- Impact of Communication
- EMACE

A fourth project was selected but could not be carried out because of funding problems.

[1] See FENCO report "Evaluation of first joint FENCO Call for proposals D-5.5.1".

2.1 StorageUtsira

Analysis of potentials and costs of storage of CO2 in the Utsira aquifer in the North Sea

Project parameters

Running time:	01/01/2009 – 28/02/2010 (extended)	
Partners:	Utrecht University- Copernicus Institute, group Science Technology and society	Netherlands
	Institute for Energy Technology (coordinator)	Norway
	UCL Energy Institute, University College London	UK
	University of Stuttgart- Institute of Energy Economics and the Rational Use of Energy (IER)	Germany
	Risø DTU	Denmark
Budget:	€ 500 000 (TO BE CHECKED)	

Project structure

Objective: To provide stakeholders with a detailed overview of the national and regional costs, benefits and bottlenecks of deploying a large-scale infrastructure in the North Sea region with the goal of transporting and storing CO2 into the Utsira formation.

Methods: The possibility of using Utsira as part of the national and regional strategies was assessed by taking into account the following aspects: a conservative and a strict climate policy (-20% and -80% reduction by 2050 respectively); trends in the development of the national energy systems (2005-2050); the availability and location of local sinks and national CO2 sources over time (2005-2050), and the current situation regarding possibilities and constrains, over time, for using Utsira as a mega-structure for CO2 storage for North West Europe.

Means: This analysis was done by developing a modelling tool within the framework of the continued model development on the basis of the Pan European NEEDS/TIMES model and/or national MARKAL/TIMES models.

Results: Analyses of CCS pathways in Denmark, Germany, the Netherlands, Norway and the United Kingdom for the period 2015-2050.
Cross-country comparison of the role, time and costs for an international offshore pipeline network in the North Sea region.
Identification of political, economic and physical synergies and conflicts at the national and regional level for the deployment of an offshore CO2 pipeline network in the North Sea.
Pan European TIMES (PET) model development and national MARKAL/TIMES models for the United Kingdom, the Netherlands (MARKAL-UU-NL), Germany, Denmark and Norway. Harmonization of data.

Project operations

Structure: One coordinating and 6 operating work packages.

- Work package 1: Physical description of Utsira
- Work package 2: Modelling of CCS and scenario development
- Work package 3: National modelling of CCS pathways
- Work package 4: Regional analysis of North Sea level
- Work package 5: CO2 pipeline in the North Sea
- Work package 6: Final results and conclusions
- Work package 7: Project Coordination and Management

Coordination and Management consultations

Project meetings: 3 in total on project and work package level, in months 1 and 6 of 2009, and month 2 of 2010.

Decision moments: Month 1, discussion on proposed methodology
Month 6, Go/No Go decision on WP5, due to consistency of results in WP 3 and 4.
Month 2 of 2010, finalising of recommendations

Linkages between work packages

Work package 1 "Physical description of Utsira", fed into work package 2 "Modelling of CCS and scenario development". Work package 2 fed into Work packages 3, 4 and 5 (national, regional modelling and CO2 pipeline). The linkage between the work packages worked well in practice. However, it is noted that the coordinators (both general and work package leaders) lacked means of power in order urge work package leaders to deliver their work in time. Due to interdepency of the work packages this has caused some delay in the overall process.

International collaboration

There was a good cooperation between the partners and all partners were very dedicated. Partners could cooperate well with each other through email contact, phone and project meetings.

Tie-ups with other projects and initiatives

In all participating countries the results were used in one way or the other, either to connect to existing projects, new projects or to initiate activities in this field. In Denmark, for instance, the results were used to inform the Danish government. In Norway collaboration is sought with SINTEF. In Germany the PAN/EU model is updated with a CCS-function. In The Netherlands the results are fed in CATO-2.

Balance of resources deployed and objective

It is the impression that the (financial) resources available could cover the expenses and thus facilitate in reaching the end goal, however it is acknowledge that there were differences in financial capacities within countries.

Dissemination

Publications: All partners have delivered reports with respect to their role in their respective work packages. So for all countries involved reports are available regarding the national and region costs of using Utsira as a means of CO2storage. These reports are (public) publications, next to confidential ones.
One article of WP3 and 4, and another one on WP5 will be/is published in relevant Journals.

Presentations: Presentations were given on the ETSAP (Energy Technology Systems Analysis Program, IA of the IEA) in December 2009 and June 2010.
On the GHGT-10 (September 2010, Amsterdam) a poster presentation was given, together with an abstract.
A presentation will be given on the ERA-Net FENCO conference (Brussels, November 2010).

Response from the field: A lot of interesting and valuable feedback was received the on presentations. Further in-debt studies were advised to execute. Information was also sent to IEA-GHG.

Collaboration after the StorageUtsira project
As an example that this ERA-NET FENCO project has stimulated collaboration between partners, the Utrecht University and University College London are working on publishing and article as an extra deliverable.

General remarks
Partners were satisfied with the functioning of this call within the ERA-NET FENCO. They appreciated the freedom to define the scope of work, the relatively simple call procedures and low administrative burden in comparison to certain other calls. Also, the close cooperation with representatives of the NFA's was appreciated.

2.2 Impact of Communication

Scrutinizing the impact of CCS communication on the general and local public

Project parameters

Running time: 01/01/2009 – 31/03/2010 (extended)

Partners:

Forschungszentrum Jülich GmbH, Institute of Energy Research, Systems Analysis and Technology Evaluation (IEF-STE) - Coordinator	Germany
Wuppertal Institute for Climate, Environment and Energy	Germany
Centre for Research and Technology Hellas/Institute for Solid Fuels Technology and Application (CERTH/ISFTA)	Greece
University of Macedonia, Economic and Social Sciences Department of Applied Informatics	Greece
Leiden University	The Netherlands
Stiftelsen SINTEF	Norway
Natural Environment Research Council (British Geological Survey)	The United Kingdom
University of Cambridge	The United Kingdom
National Institute of Marine Geology and Geoecology (GeoEcoMar)	Romania
Institute for Studies and Power Engineering	Romania
National School of Political Studies and Public Administration	Romania

Budget: € 1.000.000

Project structure

Objective: To develop recommendations for the communication of CCS which would enable the public to establish well-informed and well-considered opinions.

Methods: Two main methods were applied in all countries:
WP2: a comparative study of CCS communication methods (focus group discussions (FGD) and Information-Choice Questionnaire (ICQ)) and

WP3: a representative survey of citizens in order to investigate the awareness and knowledge of the public concerning climate change, energy policy and CCS.

Means:	Selection of identical composition of groups, computer programs and databases, questionnaires .
Results:	WP2: 6 National studies, definition of basic principles of the methodological design and development of materials and instruments which were used in all countries in the same manner, development of moderator and expert scripts for focus groups for each country and computer-aided questionnaire, Information Choice Questionnaires for each country by computer, cross-national analyses of the comparative studies (for both FGD and ICQ). WP3: 6 National and 4 supplemented regional surveys and comparison

Project operations

Structure:	One coordinating and 3 operating work packages.	
	Work package 1:	Project Coordination and Management
	Work package 2:	Comparative study of CCS communications
	Work package 3:	Representative surveys public awareness, knowledge and opinions concerning CCS
	Work package 4:	Development of recommendations for CCS communications and dissemination activities

Coordination and Management consultations

Project meetings:	4 in total on project and work package level, in months 1, 4, 8 and 12
Decision moments:	Month 4, development of materials and instruments for WP2 en WP3 Month 8, plan analysis WP2 data, finalisation questionnaires WP3 and structural equation model for WP3 data Month 12, relevance results WP2 for communication, plan for analysis for WP3 survey data, procedures and timetables for development of recommendations on CCS communication and dissemination
General remarks:	In March 2009 a decision was made how to execute regional surveys in Norway, United Kingdom, Germany and The Netherlands. The project was well coordinated. Also, back-up was foreseen for work package leaders.

Linkages between work packages

Work package 2 “Comparative study”, ran parallel to work package 3 “Respresentative surveys”. Work packages 2 and 3 fed into Work package 4 “Recommendations and dissemination”. There was a good linkage between the work packages.

International collaboration

There was a good cooperation between the partners and all partners were very dedicated. Partners could cooperate well with each other through email contact, phone and project meetings.

Tie-ups with other projects and initiatives

Links were established between this project and national programmes. As an example, in the Netherlands the programme CATO-2 (on CO2 capture, transport and storage) also contains a work package on public perception/communication of CCS, and the University of Leiden made sure that the was a cooperation between this Fenco-project and CATO-2. It is assumed that this is also valid for the other partners.

Balance between resources deployed and objective

It is the impression that the (financial) resources available could cover the expenses and thus facilitate in reaching the end goal, however it is acknowledge that there were differences in financial capacities within countries.

Dissemination

Internet: A dedicated website was build (www.ccs-communications.gr) and information was also placed on the ERA-NET Fenco website (www.fenco-era.net/Impact_of_Communication). Three newsletters were published, two additional ones also via Bellona and IEA.

Publications: Two articles about the research approach and results of the project are published [Schumann, 2009, Schumann et al., 2010]. An article for publication in Public Opinion Quarterly under the leadership of the Leiden University team has been published. Additionally, the project consortium submitted three abstracts as papers for GHGT-10 (September 2010 Amsterdam).

Presentations: Presentations were held on the Climate Change Congress in Copenhagen (March 2009), the CCT 2009 (May 2009) in Dresden and during the first meeting of IEA-GHG Social Research Network in Paris (November 2009).
An extra day during FENCO ERA-Net Workshop "CCS and Public Engagement" was dedicated to communication on CCS and results of this project were presented there (May 2010, Amsterdam).
Three presentations were held during GHGT-10 (September 2010, Amsterdam).

Response from the field: In the general the results of this project were received with great attention. The project has shown that the claim that focus group discussion were supposed to be better than information choice questionnaires is not valid. This is an important outcome, for in other countries like the United Stated, Japan and Australia, usually focus groups are used.

Collaboration after the "Impact of Communication" project

The initiative was taken by Greece to mutually submit a FP7-proposal on this topic, under the Mobilisation and Mutual Learning (MML) Action plans on Societal Challenges published by the Science and Society programme of FP7. Furthermore, Leiden University and FZJ have discussed plans to work together and submit a proposal to the German Research Foundation. During the execution of this project it became clear to the partners that social scientists are needed when dealing with issues like communication on CCS.

General remarks

Partners were satisfied with the functioning of this call within the ERA-NET FENCO. They appreciated the ample opportunities to disseminate knowledge and also the relatively simple call procedures and low administrative burden in comparison to certain other calls. Also, the close cooperation with representatives of the NFA's was appreciated.

2.3 EMACE

Economic modeling and assessment of CCS implementation in Europe

Project parameters

Running time:	01/04/2009 – 31/12/2010 (extenden)	
Partners:	Institute of Physical Energetics	LV
	Technical University of Crete	GR
	Centre for Research and Technology	GR
	Instituto Superior Tecnico	PT
Budget:	Approx. € 100 000. This is a substantial reduction from the original € 240 000.	

The initial partner Graz University of Technology from Austria dropped out at the last moment. For this and other reasons the budget had to be reduced. The scope of the project had to be reduced but at the same time the comprehensiveness was preserved.

Project structure

Objective:	Solid and verifiable information of CCS technologies feasibility New solutions in energy supply economic-environmental modelling Identification of implementation scenarios and measures Establishment of database of technologies and clients
Methods:	Database creation and model development followed by national studies. Feeding these three into final preparation of recommendations concerning viable CCS technology and support policies.
Means:	Same
Results:	Database 3 National studies Modelling results and their interpretation

Project operations

Structure: One coordinating and 3 operating workpackages.

Workpackage 1:	Project Coordination and Management (leader LV)
Workpackage 2:	CCS database creation (leader GR)
Workpackage 3:	Modelling and Economic assessment of CCS (leader PT)
Workpackage 4:	Dissemination and promotion of CCS (leader LV)

Coordination and Management consultations

Project meetings:	3 in total on project and workpackage level, in months 1, 5, and 12 (projected). These were combined with meetings on workpackage level.
Decision moments:	Month 5, discussion on proposed modelling methodology Month 20, finalising of recommendations.

Linkages between workpackages

Workpackage 2 “CCS database creation”. This database is specific for modelling and was created in close contact with Ministries because of the sensitive nature of some of the data. It feeds into workpackage 3 “Modelling and Economic Assessment of CCS”. Workpackage 3 feeds into Workpackage 4 “Dissemination and promotion of CCS”.

International collaboration
Good connections with countries in the Baltic region. However, fostering these connections were hampered by budget reductions.

Tie-ups with other projects and initiatives
Efforts have been made to collaborate with parties in Russia to set up a Russian modelling exercise. Possibilities have been identified to invlude the EMACE approach into a larger project in Belarus with Belarus. EMACE should be of interest too to the Ukraine but it is difficult to liase with authorities.

Balance of resources deployed and objective
Good. The tight budget required the running of a tight shop.

Disemination

Publications:	1 Joint [publication in preparation. LV preparing 2 papers. GR preparing 1 research paper In LV an expert network has been set up . Models are linked to policy formulation e.g. a recommendation to authorities concerning geological investigations.
Presentations:	One seminar in Latvia in the beginning of december. Knowledge sharing on municipal (!) level
Respons from the field:	First reactions: CCS is too expensive.

Collaboration after the EMACE project
See also tie-ups above.

In Latvia the modelling tools will be moved under the State Research Programme. Participation has enhanced the preparedness to participate in FP7.

General remarks
The administrative burden for this call is very friendly for the researchers. Operational freedom is given for the participants to make meetings and develop the database and national studies in accordance with the project proposal. There were no problems or constraints for project participants. The most serious obstacle for successful implementation of the project was the delay of the national funding (for all 3 participating countries) and reduction of the funding (esp. in the case of Latvia).

3. Conclusions

The general picture is that these three projects ran well although some delays took place. Financial constraints occurred, sometimes quite severely.

The budgetary range of the projects came out very broad, a factor 10.

In all cases the project results were well disseminated and in some instances followed up by more permanent communication structures or proposals to other programmes. The results found their use with external parties and so made a contribution to the fostering of CCS.

The simple procedures, low administrative burden and low constraints of the call were appreciated and made collaboration comfortable.