



NER 300 COMPETITION AND CANDIDATES PROJECTS

**CCS PROJECTS IN EUROPE - DIALOG WITH THE DIPLOMATIC REPRESENTATIVES IN ROMANIA
= FROM DEBATES TO ACTIONS =**

Carmencita Constantin, Energy & Environment Division Director, ISPE



Demonstration programs NER 300 Funds CC

EU Commission Decision voted in February 2, 2010 (1)



Project Company



➤ **Demonstrative projects are considered research project** and not commercial projects. After the construction and operation for few years, the technically and economically feasible can become early trade - 2020 and will become mature only in 2030



➤ The request for funding will be submitted by MS



➤ Financing of CCS demonstrative projects with minimum capacity of 250 MWe in different CO₂ capture and storage technologies, (most applications stop at the minimum)

Technical Consortium

➤ A part of NER 300 funds will be designed for innovative RES demonstration projects



➤ NER 300 Financing is made as follows:

- 200 millions EUA

at December 31st, 2011

- 100 millions EUA

at December 31st, 2013



➤ For a CCS demonstration project can be granted 45 millions EUA. From the information will not be required more than 12+20 millions EUA. Considering the value of an EUA at 15 €, the amount that can be financed a project is about **300 million €**



➤ **50% financing of relevant costs**, which are defined as the sum of:
- implemented technology costs for the entire chain (capture, transport, storage), and
- exploitation costs for 10 years of operation

Technical Support





Project Company



Technical Consortium



Technical Support



Level

SELECTION PROCESS – 1st round of calls

Indicative Timeline

EU

Calls for proposal – EU Official Journal

Trim I 2011

MS

MS to collect applications from project operators
+ Select on the basis of eligibility

MS to shortlist projects they support
& send them to EIB

EIB

EIB assesses technical & financial viability of projects
+ to make recommendations for the award decision to Commission

Trim III 2011

EU

Commission to assess projects

Trim IV 2011

CCC consulted

MS are consulted to confirm their support

EIB to sell allowances for this round of calls

Commission to adopt award decision with the exact amount of money (in €) for each project

Trim III/IV 2012

MS

MS to disburse the revenues to project (upfront payment possible)

Source: Alstom





Project Proposal submitted to MS by 9 February 2011 – First Call (1)

153 project proposals submitted by project sponsors to Member States pursuant to the First Call for Proposals under NER300.

25 Member States participating to First Call:

- | | | |
|------------------|----------------|-------------------|
| 1 Belgium | 10 France | 19 Portugal |
| 2 Bulgaria | 11 Italy | 20 Romania |
| 3 Czech Republic | 12 Cyprus | 21 Slovenia |
| 4 Denmark | 13 Lithuania | 22 Slovakia |
| 5 Estonia | 14 Hungary | 23 Finland |
| 6 Germany | 15 Malta | 24 Sweden |
| 7 Ireland | 16 Netherlands | 25 United Kingdom |
| 8 Greece | 17 Austria | |
| 9 Spain | 18 Poland | |



Project Company



Technical Consortium



Technical Support





Project Proposal submitted to MS by 9 February 2011 – First Call (2)

22 CCS Projects

153 project proposals

131 Renewable Projects

6 Pre-combustion

46 Bioenergy

22 Concentrated Solar Power

8 Post-combustion

14 Photovoltaics

8 Geothermal

4 Oxyfuel

22 Wind

10 Ocean

4 Industrial applications

9 Distributed renewable management





BEI Due Diligence for CCS Projects



1. Technical

Project
Company



- (i) - Technical scope
- (ii) - Costs
- (iii) - Implementation
- (iv) - Operation
- (v) - Environmental Impact



2. Financing

3. Procurement Procedures

Based on 15 Application Forms and 10 Submission Forms with details, for each project.

Technical
Consortium



Technical
Support





Ranking for CCS Projects

CPUP = Cost Per Unit Performance
≈ Amount of CO₂ stored / Investment



Project Company



Technical Consortium



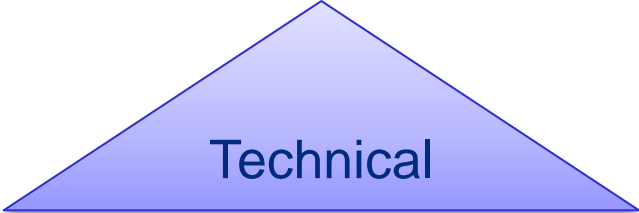
Technical Support



≥ 3
Projects with hydrocarbon reservoir storage

1÷3 Projects for each CO₂ capture technology:
•Pre-combustion
•Post-combustion
•Oxyfuel
•Industrial app.

≥ 3
Projects with saline aquifer storage





GETICA CCS Project (1)



Due diligence:

1. *Technical*

(i) *Technical scope*

Full Chain CCS Project:

- ✓ Post-combustion Innovative Carbon Capture Technology – Chilled Ammonia Process (CAP), for equivalent of 250 MWe;
- ✓ CO₂ pipeline: onshore, underground;
- ✓ CO₂ storage: onshore deep saline aquifer.

(ii) *Costs*

- ✓ Less operational costs due to the use of ammonia, a cheap and commonly used chemical, as reagent for the CAP, and a more environmental friendly by-product (ammonium sulfate), than in conventional amine based post-combustion carbon capture processes.
- ✓ Less energy penalty than conventional amine based post-combustion carbon capture processes, due to lower temperatures in the process, and higher pressure of the CO₂ stream before compression.



Project Company



Technical Consortium



Technical Support





GETICA CCS Project (2)



Due diligence:

(iii) Implementation

- ✓ The full chain CCS project will be implemented for a 330 MW lignite fired, retrofitted, Power Unit.

(iv) Operation

- ✓ The full chain CCS project is designed to operate on the entire lifetime of the Power Unit.

(v) Environmental Impact

- ✓ Contribution for achieving the national reduction target related to GHG emissions
- ✓ The Chilled Ammonia Process (CAP) will also have an additional *positive impact on air quality due to reduction to almost "0" of the sulfur dioxides and particulate matters*

Project Company



Technical Consortium



Technical Support





GETICA CCS Project (3)



Project Company

Due diligence:

2. *Financing*

✓ Getica CCS Project has governmental support

3. *Procurement Procedures*

✓ The Project Planning will assure the operation until 31 December 2015



Technical Consortium



Technical Support



The CCS Project Network – EEPER Projects

Institutional & Financial Support



Project Company



Technical Consortium



Technical Support



Hatfield, UK

Rotterdam, NL

Compostilla, ES

Porto Tolle, IT

Belchatów, PL

Jämschwalde, DE



Useful sites



Project
Company



➤ http://ec.europa.eu/clima/funding/ner300/index_en.htm

➤ www.globalccsintitute.com

➤ www.zeroemissionsplatform.eu

➤ www.iea.org

➤ www.cslforum.org

➤ www.bellona.org

Technical
Consortium



Technical
Support



Institutional
& Financial
Support



Project
Company



Technical
Consortium



Technical
Support



WE STAND FOR THE DEVELOPMENT OF CCS PROJECTS IN ROMANIA

Thank you for
your attention !

Carmencita Constantin
Director

ISPE
Energy&Environment Division

T +4021 2102457
carmencita.constantin@ispe.ro

