



POLICY GROUP

Report from Financing CCUS Task Force

Summary of January 2012 and September 2012 Finance Roundtables

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CSLF IS GOING GREEN*

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SUMMARY OF JANUARY 2012 AND SEPTEMBER 2012 FINANCE ROUNDTABLES

Note by the Secretariat

Background

The CSLF Financing CCUS Task Force was created in 2009 and focuses its work on CCUS at commercial scale in both developing and developed countries. Since its formation, the Task Force has held several roundtables on financing CCUS, involving people with considerable relevant expertise from law firms, insurance companies, and financial institutions, as well as from industry and government. This document presents a summary of the Task Force's January 2012 and September 2012 Roundtables.

Action Requested

The Policy Group is requested to review the Financing CCUS Task Force report

* **Note:** This document is available only electronically. Please print it prior to the CSLF meeting if you need a hardcopy.

Report from Financing CCUS Task Force

Summary of 21 January 2012 Finance Roundtable

The Financial Roundtable held by CSLF in collaboration with Société Générale and the Global CCS Institute (GCCSI) in Paris on January 21, 2012 showed that carbon capture, utilization and storage (CCUS) has triggered a strong interest in various parts of the world. An example of this potential is the first of a kind poly-generation industrial project in Texas, being developed by Summit Energy, selling electricity, CO₂, and urea with long term contract, indexed or floor price and take or pay!

Simple Ideas that emerged from January 21 Financial Roundtable

- Projects that are simple (avoiding too many partners along the chain) and with not too large budgets (avoiding, e.g., long & over-dimensioned pipelines) are the best suited for demonstration.
- The idea of an incentive for decarbonized electricity to enable CCUS to compete on a level playing field with other low carbon technologies was shared by several participants.
- Need for avoiding perverse effect from some incentives. Mandating CCUS (e.g., by emission performance standards) before realizing the demonstrators could drive investors away. Also, an emission trading scheme (ETS) is a tool to reduce greenhouse gases at lowest cost, not for supporting emergence of a technology.
- Need for specific incentives for demos BUT also need a vision post-2020.
- Several questions on what do we want to demonstrate with demonstration projects. A frequent answer (especially from financial institutions) is: “the integrated chain” because it has never been done before.
- Transforming transport and storage business into regulated assets could be helpful to create “certainty” for banks.
- Prioritize CO₂ storage from gas fields with high CO₂ content as the CO₂ will need to be stripped and this could generate reliable storage.

20 September 2012 Finance Roundtable

Preliminary notes

(Washington, DC)

All participants had wished a follow-up of the Paris Roundtable. At the CSLF-IEA-GCCSI Workshop on Risks and Liability, it became clear that one of the outstanding roadblocks is the lack of advantages for First Movers. There are no longer early movers' advantages but significant disadvantages. It was decided to hold a roundtable on what should be learned from "First Movers". This meeting took place in Washington D.C. on 20 September. The following preliminary notes are some of the findings that emerged from this Roundtable.

In the US, 5 years ago, the understanding was that large capacity for CO₂ sequestration was expected to be in saline aquifers. EOR was considered as a bridging solution with 20 to 30 years capacity before saline aquifers would offer a replacement solution with much larger capacities. Now EOR is reevaluated with a capacity of up to 100 to 150 years (someone mentioned 200 years) for CO₂ sequestration. Additional oil production through EOR is believed to rise from formerly expected 5% up to 40%. EOR is also expected to be a major issue in Middle East and in China, providing particular value for these countries as it is domestic oil production (US & China).

Real figures on EOR potential are very difficult to get hold of as they impact on evaluation of reserves which are strategic info for O&G companies. But EOR operators need large volumes and good availability of CO₂ which is difficult to start developing if EOR strategic capacities are not made public. US is not ready to provide new financing programs at the level of Billions of dollars. **The only way for CCS to further develop is with clear business plan involving EOR.**

The US has the biggest number of projects in development than any other country or region (28 projects, of which 8 are being operated – GCCSI data base).

- Denbury pays now 40\$/ton CO₂ for EOR. Price is linked to oil price (currently 80\$/barrel).
- A new US proposal on tax incentive that provides a \$10/ton credit for CO₂ used in EOR and \$20/tonne for CO₂ placed directly into secure geological storage.
- It is a fact that shale gas interests has distracted efforts/expectation on EOR but potential is there with advantages:
 - CO₂ is used as a "simple solvent" for EOR;
 - Use of water resources for shale gas are not necessary for EOR with CO₂
 - Fracturation is not required in EOR with CO₂ as in shale gas.
- In Texas there are no new coal PP project (consequence of integrating the uncertainty on future CO₂ impact from coal PP). Peak price were up to >4000\$/MWh, next summer it is expected to reach 9000\$/MWh .

- Projects which go ahead are those that have more than one revenue (e.g.: long term contract for decarbonised power + contract on CO₂ for EOR + contract for urea) or because it is (incremental) to cost and of strategic nature for future of oil & gas. However, these projects required some equity financing as first of a kind.

High level conclusions

According to GCCSI representative, 8 projects currently under operating conditions providing for the storage of 25 Mton/year. This is more in terms of CO₂ than the impact of the whole renewable program of countries such as the UK or Australia.

- CCS cost are lower than renewable (especially offshore or taking into account impacts of intermittent production) and associated with EOR provide for accrued domestic oil production
- In the US, several large scale CCS projects to come to operating conditions in next 3 to 5 years (2015-2017). CCS stakeholders are already considering next generation of capture technology.
- We must ask the question: can we afford to be wrong on the issue of Climate change? If no there is no reason why we should forbid ourselves to use any technology that allows for CO₂ reductions: CCS is necessary.
- CCS is not to be considered exclusively for coal. Next to come is gas.