

An ENGO Viewpoint on the Geologic Storage of Carbon Dioxide

Mary Griffiths*

The Pembina Institute, Edmonton, AB
maryg@pembina.org

Summary

The geologic storage of carbon dioxide (CO₂) is still a relatively new concept for the general public. They are likely to look to environmental non-governmental organizations (ENGOS) for an independent assessment. It is thus important for industry to understand current ENGO views on carbon capture and storage (CCS) and to address ENGO concerns about it. These include technical aspects that can be addressed by geoscientists, such as site selection, risk assessment and long-term storage. There are also regulatory and legal issues that must be resolved, including who owns the pore space where CO₂ will be stored, who will conduct the monitoring and who will pay compensation in the event of leaks. The potential role of CCS as part of an overall strategy to reduce greenhouse gas emissions will be discussed and the Pembina Institute's perspective will be outlined.

Introduction

Geoscientists naturally focus on the technical aspects of geologic storage. However, public perception of this new approach to reducing greenhouse gas emissions may affect the speed and manner in which CCS proceeds. Since public perception is considerably influenced by the views of environmental groups, it is important for the industry to understand those views and to address ENGOS' concerns about CCS.

Various Perspectives on Geologic Storage

Canadian ENGOS hold a range of views on CCS. Some see it as an "entrenching technology" that will maintain the use of fossil fuels. Others recognize CCS as one of many approaches needed to reduce CO₂ emissions as rapidly as possible. Those who accept a role for CCS usually emphasize that it is an "end-of-pipe" waste disposal option and must not divert resources from energy conservation and low-impact renewable energy sources.

The Pembina Institute's perspective¹ is that the development and deployment of CCS should be conditional on:

- a massive scale-up of energy efficiency and low-impact renewable energy,
- the regional context of application of CCS, notably the availability of more sustainable options,
- the geological and regulatory context of CO₂ disposal, and
- a fair distribution of investment between taxpayers and polluters.

We believe that Canada's CCS strategy should be focused on permanent "disposal," not temporary "storage," and that the most reliable and secure location for CO₂ disposal is in deep saline aquifers. While we recognize that CO₂ will be used for enhanced oil recovery, this is not a disposal solution, but a use which may or may not lead to a reduction in global greenhouse gas emissions.

Issues That Need to Be Addressed

Of primary concern to ENGOs and the public is the security of storage locations and the risk of CO₂ leaking into shallow groundwater or to the surface. Although there are regulations in place, they need to be reviewed to ensure they are comprehensive as well as transparent. ENGOs and the public need to understand what will be done to minimize risks through site selection, risk assessment, storage operations and site-closure procedures. Clarity is needed about who is responsible for monitoring, verification and remediation, both in the short and long-term. Issues related to liability and compensation, in particular during the centuries-long post-closure period, must be addressed.

Legal issues which must be resolved include the actual ownership of pore space. Rules for accounting for emission reductions realized using CCS (e.g., for the purpose of issuing credits) also need to be determined, and must take into account the additional emissions created through the CCS process itself.

Draft CO₂ storage guidelines from other jurisdictions provide a useful checklist with which to compare current Canadian regulatory requirements and potential ways to resolve these issues.²

Conclusions

It is important for ENGOs and the public to have access to full and sound information on the geologic storage of CO₂ and for outstanding issues to be addressed before major storage projects are initiated. Geoscientists can help with understanding of the physical aspects of storage, but there are also legal and regulatory issues that must be resolved.

References

1. The full Pembina Institute "Perspective on Carbon Dioxide Capture and Storage" is available online at <http://pubs.pembina.org/reports/Pembina-perspective-CCS.pdf>.
2. See, for example, the Interstate Oil and Gas Compact Commission. 2007. *Storage of Carbon Dioxide in Geologic Structures: A Legal and Regulatory Guide for States and Provinces*, available online at <http://www.iogcc.state.ok.us/docs/2007-CO2-Full-Report.pdf>.