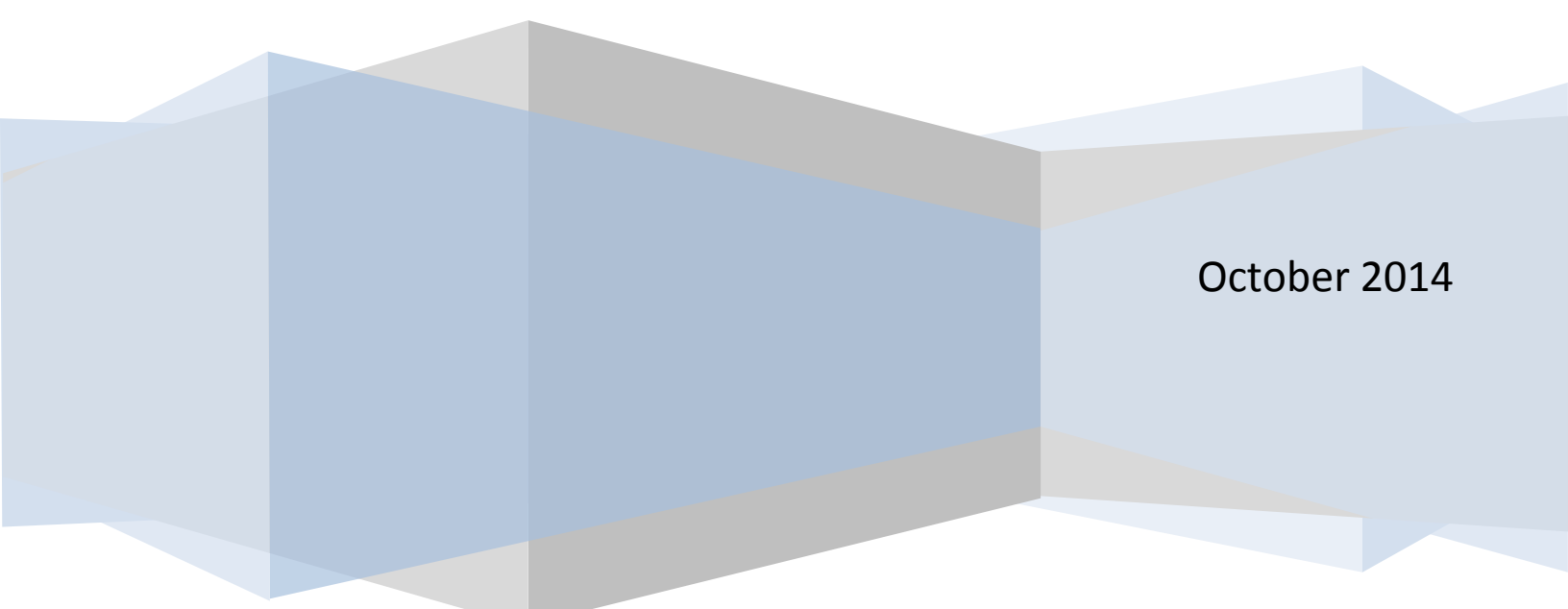


Province of British Columbia

# Carbon Capture and Storage Regulatory Policy

Consultation Summary Report

Ministry of Natural Gas Development



October 2014



# Carbon Capture and Storage Regulatory Policy Consultation Summary Report

## INTRODUCTION

The Ministry of Natural Gas Development (Ministry) intends to introduce a Carbon Capture and Storage (CCS) regulatory policy framework under the *Petroleum and Natural Gas Act* and the *Oil and Gas Activities Act (OGAA)*.

In the spring of 2014 the Ministry posted a *CCS Regulatory Policy Discussion and Comment Paper* (Discussion Paper) at [www.gov.bc.ca/carboncapture](http://www.gov.bc.ca/carboncapture) seeking comments on a proposed Carbon Capture and Storage Regulatory Policy Framework (CCS RPF).

This report contains a summary of comments received during the CCS RPF consultation process.

## BACKGROUND

CCS is an internationally recognized greenhouse gas emissions mitigation strategy that involves the long-term storage of carbon dioxide (CO<sub>2</sub>) in deep underground formations. In 2012, the *British Columbia Natural Gas Strategy* outlined the following government actions to promote the use of CCS:

- Complete development of a regulatory framework.
- Amend legislation, if required.
- Work with the British Columbia Oil and Gas Commission (OGC) to develop regulations.
- Evaluate potential projects.

The purpose of developing a CCS RPF is to identify and address any regulatory gaps; ensure that CCS is done safely to protect the public and the environment; and provide transparency in CCS development.

The CCS RPF aims to address regulatory policy barriers to CCS projects and provide certainty to industry in order to enable CCS projects to proceed and ultimately reduce greenhouse gas emissions.

## SUMMARY OF PUBLIC COMMENTS – WHAT WE HEARD

The Ministry received 20 submissions containing over 100 different comments, questions and suggestions in response to the Discussion Paper. The Ministry reviewed all comments received and carefully considered all submissions.

A summary of the responses has been prepared and categorized by key area as outlined in the Discussion Paper.

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## 1. Comments regarding CCS site selection and storage reservoir leases.

### **General Comments**

Some respondents voiced concerns with proposed policy regarding:

- potential to use a competitive bid process;
- activity occurring in geological zones above the storage reservoir and designated cap rock;
- the ability of the Minister to reduce the area of the storage reservoir lease if underutilized; and
- determination of the liable party if CO<sub>2</sub> migration occurred or damaged adjacent reservoirs.

### **Questions and comments seeking further clarification:**

- details on the application, consultation and site selection technical requirements;
- applicability of the framework to enhanced oil recovery;
- ability of existing oil and gas production rights owners to retain disposal rights;
- the referral timelines for CCS;
- the criteria required to pass from one storage lease category to the next;
- the potential for grandfathering current injection schemes; and
- the acceptable forms of financial security.

### **Suggestions and recommendations:**

- ensure a one-window approach to government approvals to avoid significant delays;
- the Ministry should identify and reserve geological areas of the province suitable for CCS;
- have no time limit on the developmental storage lease category;
- do not require Minister's approval for transfer of a lease if the company is sold;
- ensure a fair fee structure for access to CCS reservoirs;
- add the evaluation of geo-chemical considerations to the application process;
- support use of international best practices for CCS reservoir site selection;
- ensure maximal use of the storage space by ordering projects to avoid sterilization;
- require tenure for the full storage container including the reservoir, caprock, the modeled maximum extent of the CO<sub>2</sub> plume, and the associated pressure front.

## 2. Comments on CCS operations and permitting.

### **General comments:**

Some respondents voiced concerns with proposed policy regarding:

- application of the framework to natural gas storage, acid gas disposal, and water disposal;
- not providing pre-existing production rights holders with priority for CCS reservoir leases; and
- the use of one regulatory framework to manage both CO<sub>2</sub> disposal and natural gas storage.

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## ***Questions and comments seeking clarification:***

- precedence of a Canadian Standards Association (CSA) standard versus a regulation;
- clarification of the applicability of B.C. Reg 204/2013 Emergency Management Regulation to CCS projects, and any additional requirements for CCS under the regulation; and
- the regulatory approach for a storage reservoir that crosses the provincial border.

## ***Suggestions and recommendations:***

- the current acid gas and water disposal regulatory process should be retained as is;
- acid gas injection and conventional well regulations would not be appropriate for CCS projects;
- different guidelines should apply for CCS projects with low or no hydrogen sulfide content;
- any production drilling should be held to the same CSA standards as CCS wells;
- the framework should include adequate vertical and horizontal spacing requirements between storage reservoirs to protect the integrity of each reservoir;
- approval should be required for the casing materials, and pressure and cement testing results;
- specific pipeline regulations should apply to transporting CO<sub>2</sub> or acid gas versus natural gas; and
- the consultation process should involve all subsurface rights holders and occupants of lands above the plume and appreciable pressure front.

## ***3. Comments on the proposed considerations for CCS monitoring.***

### ***General comments:***

- proposed monitoring requirements were generally accepted; while some suggested the current acid gas disposal monitoring requirements were satisfactory and should be applied to CCS;
- data sharing is important to advance the CCS industry;
- public safety and emergency response planning should show that risk is being addressed; and
- monitoring for CO<sub>2</sub> credit verification purposes is important if the project generates offsets.

### ***Questions and comments seeking clarification:***

- whether non-invasive technology such as 3D seismic would be acceptable in lieu of monitoring wells that penetrate the reservoir;
- details on the distances and layout requirements for monitoring wells; and
- details on the approval process for the scope of the monitoring plans.

### ***Suggestions and recommendations:***

- require an effective buffer zone to prevent a reservoir breach by third parties;
- require abandonment with zonal isolation of the storage reservoir;
- minimize or eliminate monitoring activities that would penetrate the cap rock;

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- extend emergency response planning requirements to CCS projects;
- provide CCS proponents with access to an up-to-date well database;
- consider providing grants to assist with monitoring expenses; and
- the monitoring, measuring, and verification (MMV) program should be: clearly defined, project specific, required at the time of tenure application, focused on the injection well, similar to acid gas disposal requirements, and updated on a periodic basis.

## 4. Comments on the Closure or Post Closure Assurance periods for CCS projects.

### **General comments:**

- respondents generally supported a 10-15 year minimum Post-Closure Assurance Period and the establishment of a Storage Reservoir Stewardship Board;
- important linkage between monitoring program and demonstration of performance measures;
- risks to industry can arise if there is uncertainty of monitoring requirements; and
- the focus should be on proper abandonment to reduce long-term risks.

### **Questions and comments seeking clarification:**

- whether the proposed 15 year minimum Post-Closure Assurance Period can be reduced based on plume behavior and monitoring results;
- what performance measures will be used to determine the end of the assurance period; and
- more information on the guidelines for the Storage Reservoir Stewardship Board's membership.

### **Suggestions and recommendations:**

- monitoring should be continued during the Post-Closure Assurance Period;
- the government should explicitly identify allowable uses of the Stewardship Fund; and
- the Storage Reservoir Stewardship Board members should have considerable CCS expertise.

## 5. Comments on the proposed CCS long-term liability framework.

### **General comments:**

- respondents strongly supported the Crown taking over long-term liability for CCS projects;
- the setting of stringent criteria to be met prior to handing over long-term liability to the Crown will encourage good site selection, facility design, and operations; and
- the proposed proponent liability of wells into perpetuity appears to be a compounded liability.

### **Questions and comments seeking clarification:**

- clarification of the procedures regarding title transfer to the Crown and ownership of CO<sub>2</sub>;

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- the forms of liability the Crown proposes to assume; and
- details of the reservoir stewardship fund including the amount of the injection fee; its calculation; and if there will be a refund mechanism based on risks to CO<sub>2</sub> containment.

## ***Suggestions and recommendations:***

- disclose the fund calculation prior to project approval and include a mechanism for dispute;
- the Crown should accept all forms of liability including tort, climate, and liability for all assets;
- require the completion of a rigorous monitoring plan to assess the performance of the reservoir;
- require operators to carry sufficient insurance;
- identify the party liable for carbon costs if stored CO<sub>2</sub> is accidentally released to atmosphere; and
- the reservoir stewardship fund levy calculation should take into consideration any incentives, credit, or profit received by the project proponent.

## **6. Additional comments.**

### ***General comments:***

- regulatory certainty is important for investment decision purposes;
- the high cost of CCS implementation is a significant barrier to developing the technology;
- a CO<sub>2</sub> injection levy would add additional cost and further impede CCS;
- there is a need for policies that create economic incentives to encourage investment in CCS;
- market forces should drive CCS projects, not long-term subsidies;
- more sustainable energy funding is needed;
- use a carbon tax and not CCS to manage emissions; and
- any taxation policy must consider the overall competitiveness of BC's natural gas industry.

### ***Questions and comments seeking clarification:***

- details of the consultation requirements at different phases of a project and specific industry requirements for the Engagement Plan; and
- details on the Province's program for CCS offsets and verification requirements.

### ***Suggestions and recommendations:***

- expand existing regulations rather than develop new regulations;
- review the recommendations from the Alberta Regulatory Framework Assessment;
- the government should provide CCS outreach materials to communities;
- the government should provide funding to explore CCS in the Horn River Basin;
- natural gas storage should be regulated by the OGC only, and not both the OGC and the British Columbia Utilities Commission; and
- further review and consult on regulatory areas such as monitoring, closure and liability.

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## CONCLUSION

The Ministry would like to thank all of those who provided feedback on the Discussion Paper. For further information on the CCS regulatory policy framework, please review the FAQ document available at: [www.gov.bc.ca/carboncapture](http://www.gov.bc.ca/carboncapture).

If you have any questions on the CCS regulatory policy framework or this Consultation Summary Report, please contact [CCS.PolicyComments@gov.bc.ca](mailto:CCS.PolicyComments@gov.bc.ca).

Thank you.