

Canada's big contribution to global greenhouse gas reduction

We have the potential to be a world leader in carbon capture, storage

By Greg Ebel, Freelance November 6, 2009

Carbon capture and storage (CCS) has been attracting a lot of attention lately. In February, it was given centre stage during U.S. President Barack Obama's visit to Ottawa. More recently, world leaders, including Prime Minister Stephen Harper and Obama, have pointed to CCS as a potential game-changing technology in the effort to reduce greenhouse gas emissions from coal-fired electric plants and upstream oil and gas operations, in particular.

While CCS is a technology that is still in the development stage for large-scale applications, it has already shown considerable promise, especially in the area of natural gas processing.

For example, much of the natural gas reserves found in British Columbia contain concentrations of carbon dioxide (CO₂). In accessing these natural gas reserves to generate a safe and combustible fuel--methane-- one of the most effective ways to reduce the "carbon footprint" is to separate the concentrations of naturally forming CO₂ through CCS.

On the global stage, CCS represents a viable greenhouse gas-reducing technology that Canada can bring to the UN Climate Change Conference in Copenhagen this December to demonstrate international leadership.

In the Western Canada Sedimentary Basin, there are 49 CCS projects underway.

Spectra Energy alone has eight existing CCS facilities in British Columbia and Alberta as part of our natural gas processing operations, and we are currently assessing the feasibility of a world-scale project in Fort Nelson, B.C.

At these natural gas processing facilities with CCS, CO₂ is extracted from raw natural gas and then injected into deep geological formations for permanent storage.

As most natural gas processing facilities are already designed to process or "capture" CO₂, they can be modified to accommodate CCS at much lower cost than facilities which are designed for fundamentally different purposes which require sophisticated solutions for capture technology, in addition to sequestration of the CO₂.

Overall, our experience with CCS has led to our recognition as a world leader in this area by the UN Intergovernmental Panel on Climate Change (IPCC) and the international Carbon Sequestration Leadership Forum.

Our experience tells us that CCS could very well be an important part of the solution to reducing greenhouse gas (GHG) emissions for world-scale natural gas processing facilities of the size and scope of Spectra Energy's Fort Nelson natural gas plant.

Admittedly, challenges remain: building the infrastructure for wide-scale implementation of CCS will be expensive; regulations need to be developed and agreements around ownership and responsibility for the underground formations where carbon will be stored need to be ironed out.

But beyond those challenges, CCS is steadily growing up to become an important component of a carbon-reduced future. Significantly, the IPCC believes that CCS is "an option in the portfolio of mitigation actions for stabilization of atmospheric greenhouse gas concentrations."

Note that the IPCC views CCS as an "option." It is but one avenue which should be fully explored and proved to address the issue of GHGs. That said, CCS has the greatest potential among all the emerging solutions to achieve major GHG reductions. According to the International Energy Agency, "CCS will need to deliver almost 20 per cent of the total greenhouse gas emissions reductions we need to achieve in 2050 if we are to cost-effectively stabilize GHG concentrations in the atmosphere at an acceptable level."

This is why the Canadian and U.S. governments are focusing their efforts on CCS. It is why the regulatory and ownership issues will be resolved in due course. And it is why Canada, the United States, Australia, the United Kingdom, Japan, Norway, China and 13 other nations, along with more than 80 companies and industry associations, are coming together to form the Global Carbon Capture and Storage Institute--a key step in implementing a global strategy for CCS.

The mitigation of climate change will neither be cheap nor easy, and any solution to reducing GHGs will come with a price tag.

But the challenges that face CCS as it develops should not make the technology any less palatable as part of a global solution.

It could very well hold the key to reducing GHG while fostering economic growth and prosperity--not just for Canada, but for the developing world. CCS for natural gas has clearly shown it is worth the further effort and investment required to realize its full potential.

This is no time to stop short of the end zone with CCS. We must continue to move forward.

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