

## The Federal Government's Climate Change Policy and the Role of Carbon Capture and Storage

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In April 2007 the federal government introduced a new greenhouse gas policy, [Regulatory Framework for Air Emissions](#). On March 10, 2008, it tabled a series of additional documents: (1) Taking Action to Fight Climate Change, (2) Regulatory Framework for Industrial Greenhouse Gas Emissions, (3) Canada's Offset System for Greenhouse Gases, (4) Canada's Credit for Early Action Program, and (5) Detailed Emissions and Economic Modelling (all available [here](#)). These documents provide further guidance and detail on the implementation of the April 2007 proposals. Further details will be provided when the promised regulations appear in draft form but that will not happen before the fall of 2008.

In the meantime we can see that the policy seeks to encourage the widespread adoption of carbon capture and storage (CCS) technology as a means of achieving the proposed intensity-based targets. The purpose of this comment is analyse how the policy accommodates and encourages the adoption of CCS. In order to do that it describes the original April 2007 policy before turning to examine the elaborations and refinements contained in the most recent March 2008 documents.

### THE APRIL 2007 POLICY

The April 2007 Policy is based on the concept of reducing the emissions intensity of key parts of Canada's industrial sector. Emissions intensity refers to the amount of carbon dioxide (or equivalent in terms of global warming potential) CO<sub>2</sub>e emitted per unit of production. An improvement in emissions intensity therefore will reduce the amount of CO<sub>2</sub>e emitted per unit of production but will not actually reduce total emissions if the industrial sector grows at a faster rate. The April 2007 policy adopted 2006 as its base year for these targets rather than the Kyoto base year of 1990.

The April 2007 policy distinguishes between existing facilities and new facilities. Existing facilities will be required to make a 6% improvement each year (from a 2006 base level) beginning in 2007. Since the regulations have yet to be put in place the policy contemplates that these reductions will not be enforceable until 2010 but by then existing facilities will have to have achieved a cumulative 18% reduction in emissions intensity (3 years @ 6% per year).

A new facility is a facility whose first year of operation is 2004 or later. New facilities will be allowed to come on stream and will have a three year grace period before being required to reduce their emissions intensity. After that, the new facility will be required to improve its emission intensity by 2% a year. The initial standard will be based on so-called "clean-fuel standards" which in most cases will likely be the emissions profile that would result if the facility to use natural gas.

The 2007 policy contemplated that regulated emitters would be able to comply with their targets in a number of ways. These include: (1) actual reductions in emissions by the regulated entity through various means (including adoption of CCS technology), (2) contributions to a “climate technology fund”, and (3) emissions trading.

Contributions to the climate technology fund will be at the rate of \$15 per tonne from 2010 through 2012 and \$20 per tonne effective 2013 and escalating thereafter at the rate of growth of nominal GDP. A firm would not be able to meet its entire reduction commitments through this mechanism but would be subject to an initial cap of 70% falling to zero in 2018 such that contributions to the fund will no longer serve as a compliance option.

The 2007 policy contemplated that emissions trading could be used in several ways to meet commitments including, trading between regulated entities, purchasing credits through the Kyoto Clean Development Mechanism (maximum of 10% per firm) and purchasing credits through a domestic offset system with possible linkages to other trading systems both in North America and globally.

An offset system is designed to provide incentives to reduce emissions in other sectors of the economy beyond the regulated sector. The basic idea is that projects developed by non-regulated entities that produce actual, verifiable and additional (i.e. not required by law) reductions in emissions may produce certifiable emission reduction credits that can be traded to a regulated entity and used to satisfy (i.e. offset) the emission reduction obligations of the regulated entity.

### **Criticisms of the April 2007 Policy**

There have been numerous criticisms of the 2007 policy. Among the more important are these:

- The policy is based on the concept of improving emissions intensity rather than achieving absolute reductions in CO<sub>2</sub>e emissions which is what the Kyoto Protocol actually requires.
- The policy adopts a 2006 base year rather than the Kyoto prescribed base year of 1990. Measured against a 1990 base year the federal proposals are far less aggressive than they appear when measured against 2006 emission levels.
- Significant sectors of the economy are not subject to direct regulation and estimates of the capacity of the unregulated sector to deliver actual reductions in emissions, whether by way of the offset program or in other ways, are speculative.
- Federal estimates as to absolute reductions in GHG emissions are therefore highly speculative and likely optimistic.
- The default price of carbon (effectively established by the contribution rates to the technology fund) is too low to stimulate real innovation and in particular too low to encourage the widespread adoption of CCS.

### **THE MARCH 2008 POLICY PAPERS**

The March 2008 policy papers are designed to flesh out the structure provided in April 2007 and to provide some necessary clarifications. There have been no significant changes in the broad outlines of the 2007 policy but there have been interesting elaborations with respect to the coverage of the scheme, the technology fund and the offsets scheme. In addition, the documents also provide further guidance as to how carbon capture and storage may be integrated into the policy framework. Most of the discussion below is based upon the document entitled *Turning the Corner: Regulatory Framework for Industrial Greenhouse Gas Emissions*.

## **Coverage**

The term “coverage” refers to the entities that are to be subject to direct regulation (as opposed to those who might be incented to participate in achieving sink or emission targets through an offset scheme). The regulatory framework contemplates “covering” ten major industrial sectors including the electricity sector, oil and gas and fertilizers and chemicals. Perhaps the most important point for present purposes is that the scheme’s coverage is significantly broader than the provincial *Specified Gas Emitters Regulation (SGER)*, Alta. Reg. 139/2007. The SGER applies to designated facilities that emit more than 100,000 tons CO<sub>2</sub>e per year. The proposed federal regulations will apply to chemical, fertilizer and natural gas pipeline operations that emit more than 50,000 CO<sub>2</sub>e per year, to electricity generators of more than 10 MW and to upstream oil and gas facilities with minimum emissions of 3,000 CO<sub>2</sub>e “and 10,000 BOE/day/company.” However, the federal framework does hold out the prospect of further discussions with the provinces in order to seek ( at 8 ) “a common practical approach to emissions coverage”.

## **The technology fund**

The 2008 Regulatory Framework retains the fund approach as an alternative means of achieving compliance. This is significant for at least two reasons. First, it has some implications for how the federal government will seek to justify the constitutionality of the overall scheme. There is at least some reason for thinking that if a regulated entity can meet a supposed prohibition by contributing to a research fund, then it will be difficult to justify the overall regulatory scheme on the basis of the federal parliament’s criminal law power. Second, and more pragmatically, the existence of the fund option for compliance may make it easier to integrate federal and provincial schemes and especially Alberta’s SGERs. In this context industry will no doubt take huge comfort from the suggestion in the federal policy that a contribution to a provincial fund may satisfy both provincial and federal requirements (at 16):

Contributions to other funds that meet all the necessary requirements could potentially be recognized; in particular, contributions to provincial funds. As with the federal fund, a firm contributing to such a fund would be eligible to receive credits, at the contribution rate and up to the contribution limit.

The decision to recognize another fund will be the responsibility of the federal government. To ensure a nationally consistent approach, other funds would be required to fulfill equivalent mandate and criteria as those governing the technology fund.

Additional flexibilities that are built into the fund compliance option are dealt with below under the heading “carbon capture and storage”.

The March 2008 documents also contain the important statement that fund contributions will not be used to effect inter-regional wealth transfers (at 3) suggesting that there will be considerable room for negotiations between the provinces and the federal government to determine eligible investments for the Fund.

## **The offset scheme**

The March 2008 documents offer considerably more guidance on the proposed domestic offset scheme not least because they devote a specific paper to this topic. The main Regulatory Framework offers the following guiding principles (at 17):

- Offset projects must achieve emission reductions or removals and should provide a net environmental benefit.

- Reductions or removals must occur in Canada.
- The system will promote projects in as many sectors and for as many project types as practical.
- The system must be as simple and cost-effective to administer as possible, and the administrative burden for participants should be minimized.
- The system will build on the experience of Canadian pilot projects and the work of other jurisdictions.

Further guidance is offered on the incremental or additionality criterion as follows (at 17):

- Reductions or removals must be beyond a baseline;
- Reductions or removals must be surplus to all legal requirements, including the regulations under this framework, whether federal, provincial, territorial, or regional;
- Reductions or removals must be beyond what is expected from receipt of other climate change incentives from a provincial or territorial government, or the federal government;
- Only projects that began to achieve their emission reductions or removals after January 1, 2000, will be eligible; and
- Only those emission reductions or removals that take place after January 1, 2008, may generate credits.

Further discussion of the details of the offset scheme is properly the subject of another comment.

### **Carbon capture and storage and the federal policy documents**

The federal policies contemplate that CCS projects may be relevant to compliance strategies in at least four ways. First, and most obviously, a regulated entity may engage directly or indirectly in a CCS project for its own emissions stream in order to meet its obligations. Second, a merchant CCS project created by a third party and sequestering emissions from non-regulated entities may qualify as an offset project, and a regulated entity may purchase credits generated by such a project in order to satisfy its own obligations. Third, a regulated entity may choose to dedicate contributions to the technology fund to a CCS project. In this context the current March 2008 papers offer considerably enhanced flexibility for regulated entities in targeting their contributions through a mechanism described as “pre-certified investments” (dealt with in more detail below). And finally, the policy indicates that CCS will be used (presumably in much the same manner as the clean fuel standard for post 2004 projects) to determine the emissions intensity target for new facilities that come on stream post-2012 in the oil sands and electricity sectors.

The policy also offers additional flexibility to so-called new projects in certain eligible sectors (oil sands, electricity, petroleum refining, chemical and fertilizer sectors) who seek to comply using CCS. As stated above, new projects (i.e. post 2004 facilities including significant expansions) must meet a continuous 2% improvement requirement after three years in service. The March policy provides (at 10):

In those sectors in which carbon capture and storage is a viable option for reducing emissions, for new facilities that do not meet the cleaner fuel standard but that are built capture-ready, the standard would not apply until 2018. This would mean that the 2% annual continuous improvement target would apply to the facility’s actual emission intensity. This incentive for carbon capture and storage will apply to the oil sands, electricity, petroleum refining, chemical, and fertilizer sectors.

This seems to offer an additional opportunity to defer the entry into force of the requirement in much the same manner as existing facilities have been put on notice that they must achieve a 6% per annum improvement effective 2007 while understanding that this will not bite until 2010 when the regulations come into force. In the same manner a “new facility” within one of the eligible categories will be subject to the 2% per annum improvement but the cumulative requirement of this improvement will not enter into force until 2018 provided that the new facility is built “capture-ready”. The effect of this is to create two categories of “new project” for the purposes of the regulatory framework.

### **Pre-certified investments and CCS**

The April 2007 policy as outlined above proposed to cap the extent to which a regulated emitter might meet its commitment by contributing to the Fund. The March 2008 documents maintain that general policy but add several flexibilities. The first is that a regulated entity instead of contributing to the general Fund may instead receive the same credits (but subject to the same caps) if it invests directly in “large-scale and transformative projects, either its own or joint-venture projects, selected by the firm from a menu set out by the federal government”. Second, one such category of pre-certified investments will be CCS projects for the oil sands and coal fired electricity sectors. In this case the March 2008 policy contemplates that a company will be able to meet 100% of its regulatory obligation by investing in such a project. This additional compliance eligibility is stated to be limited (at 16) to “firms that can make direct use of carbon-capture-and-storage technology in the following sectors: oil sands, electricity, chemicals, fertilizers and petroleum refining”.

### **An assessment of the March 2008 Documents**

The fundamental criticisms voiced above with respect to the original April 2007 policy statements remain. In particular the current scheme remains committed to an emissions intensity approach rather than an approach of absolute emission reductions. This seems particularly problematic given the three year free ride accorded to “new facilities”. Similarly, the default price of carbon remains unrealistically low.

But in addition to these criticisms which retain their currency these most recent elaborations are open to the criticism that they add layer upon layer of complexity, especially with respect to the Fund mechanism of compliance and its application to pre-certified investments generally, and CCS projects specifically. It is not hard to imagine the politics, lobbying and federal/provincial negotiations that will unfold as particular projects seek “pre-certified” approval. In short, while CCS is a vitally important mitigation technology which requires and deserves support it is questionable whether the federal government has adopted the best mechanism for encouraging its uptake. A higher price for carbon might be a cleaner, clearer, fairer and more efficient method of securing adequate investment in CCS technology.