The Trading Game

Danny Bradbury

Emissions trading schemes offer pollution as a market commodity.

WITH THE CHALLENGES signatory countries now face to meet their commitments under the Kyoto accord, an inventive concept has emerged to help reduce greenhouse gas emissions: let the market handle it. Emissions trading systems treat greenhouse gases as a tradeable commodity, allowing large polluters (such as power companies) to buy and sell pollution credits in order to meet emissions reduction targets. The concept has already caught on in Europe, and Canada is working on its own proposal to establish an emission trading system.

The EU system, which officially started trading on February 28, 2005, operates on what is known as a cap and trade basis. It imposes an absolute limit for greenhouse gas emissions by limiting the number of credits available within the trading system.

Each member state awards EU Allowances (EUAs) to eligible companies, and each EUA allows a company to emit a tonne of carbon dioxide ($C0_2$) or its equivalent (CO_2e).[1] Companies with a shortfall of allowances must buy more to meet their targets, while those with a surplus can sell them for a profit. Companies that cannot cover their emissions for the year will be fined €40 (about $56 CAN) for every missing credit.

The proposed Canadian scheme will be introduced in 2008 to coincide with the first phase of the Kyoto accord, which runs until 2012. Unlike the European model that places absolute limits on greenhouse gas emissions, the Canadian system is intensity-based. Heavy polluters (known as large final emitters) must cut emissions of the six greenhouse gases covered under the Kyoto Protocol as a percentage of their total industrial output. Those companies that reduce emissions further than their defined targets can trade the extra emission reductions as credits on the open domestic market. (See "What's a Carbon Credit," p. 15.)

The intensity-based system makes it possible for a business to meet its own emission targets while failing to contribute effectively to the country's overall Kyoto target. Because it looks at emissions in terms of intensities (percentages) rather than in absolute terms, an intensity-based system allows businesses to continue growing their absolute levels of greenhouse gas emissions if their industrial output increases, even though they may decrease the percentage of emissions.

How did this paradoxical situation come about? According to Warren Bell, an associate at the International Institute for Sustainable Development, Canada capitulated to industry when developing the system. "What Canada has done is tried to compromise and listened to industry, frankly," he says.

To lessen the burden still further, the Canadian government has imposed a $15 cap on the price of credits (though the government is investigating ways of restricting the number of credits available at that price). This stands in stark contrast to the European system, where prices are uncapped and have soared thanks to a combination of high oil prices, a cold winter and a hot summer. The higher value on European pollution credits makes it more likely that businesses will attempt to meet their targets, and less likely that they will try to flout their emission targets and swallow the cost of extra credits as a business overhead. It remains to be seen whether the Canadian government will take steps to prevent large final emitters from substituting credit purchase for emissions reduction and treating it as simply another cost of doing business.

"We've shifted most of the burden [of reducing greenhouse gas emissions] to federal taxpayers," continues Bell, pointing to the significant funds allocated within Project Green, Canada's 2005 manifesto for meeting its Kyoto targets. After all, with less of an onus on businesses to reduce absolute targets and with the government allocating significant amounts to other pollution reduction projects under Project Green, the money comes straight out of the Canadian taxpayer's pocket.

Canada's decision to use an intensity-based system and withhold an absolute ceiling for greenhouse gas emissions may seem like an unnecessary capitulation to industry in the face of the EU's tougher stance, but there are other factors at play. For one, Canada's largest trading partner to the south has refused any Kyoto commitments, resulting in a perception that the costs involved in following Kyoto protocols would place Canadian firms at a disadvantage. The government had to take this perception into account.

Rather than placing them at a disadvantage, companies may find it in their interest to pursue emissions reduction as aggressively as possible, argues Leigh

Mazany, senior economist at Environment Canada. "A number of companies have found that when they're forced to pay more attention to energy use than before, they can reduce emissions and increase shareholder value because they get cost savings that outweigh the cost of doing reductions," she argues.

Shell Canada is one large final emitter that is already making savings. It has installed a warm water loop project at its Sarnia, Ontario, refinery to help provide the heat needed for a new gas treatment plant. The warm water loop, which recovers the heat from steam, saved enough energy to lower projected greenhouse gas emissions by 10,000 tonnes – a net energy saving worth $1.6 million per year.

There are some inevitable kinks in the Canadian system that will have to be worked out. Because companies do not always know what their output for the year will be, they may find themselves scrabbling for credits to fulfill their commitments at the end of the year. Conversely, the EU issues credits at the start of each year.

Liquidity problems are likely to result from the fact that targets are decided in hindsight, warns Corinne Boone, managing director at C02e, a Cantor Fitzgerald subsidiary that consults with companies on developing greenhouse gas trading policies. "There's a trading period and then true-up period and you'll see a lot of companies waiting until the end. Those that wait until the end, end up paying the most. That may end up happening to one or two but they'll change their strategy," she predicts. And the fact that the Canadian government will be the largest purchaser of credits at over 100 million tonnes per year will only exacerbate these liquidity problems.

In the meantime, there are various mechanisms in the public and private sector that could alleviate the problem. If some credits are issued at the start of the year, speculative companies could be encouraged to trade early, making the market more fluid. Basing the allocation of credits at the start of the year on a company's output for the previous year would introduce some sort of accuracy into the process. The introduction of futures exchanges could also help to drive speculators into the market.

Carbon trading can give companies a reason to pursue emission reductions aggressively.

It would be unfair to criticize Canada's reluctance to impose absolute targets on industry without acknowledging its efforts to introduce offset mechanisms into its emissions trading proposals. Companies will be able to invest in alternative ventures (like landfill methane or biodigester projects, or possibly even renewable energy or carbon sequestration projects) as a means of earning domestic offset credits. These credits would be used to help meet emission reduction targets.

Similarly, companies will be able to obtain credits via the Clean Development Mechanism. This awards credit to businesses in the developed world for emissions reduction or sequestration projects undertaken in developing countries. It could, for example, give Canadian companies useful opportunities to export innovations in green technology to growing markets in the developing world. Joint Implementation is a second mechanism under Kyoto that companies can use to offset their emissions. It is similar to the Clean Development Mechanism except that it allows companies in developed countries to earn credits with projects undertaken in other developed countries.

Clive Dobson

Now the race is on to implement the domestic trading system by 2008. While critics and advocates may continue to debate the merits of the current proposal, the urgency of implementing a domestic emissions trading system will only grow, warns Andrei Marcu, executive director of the International Emissions Trading Association. "The more you wait, the less time you'll have to prepare yourselves," says Marcu, praising the level of detail given in the 2005 proposal for the Canadian system, which he says is much higher than the government's original plan, developed in 2002.

In a sense, the situation that Canada finds itself in with the current proposal mirrors that of the larger Kyoto accord; Canada's proposed carbon trading system may not be perfect, but with time running out, and with the level of complexity involved, it may be the best chance for success.

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Note

[1] *(With over 250 known greenhouse gases, it is necessary to measure them according to some standard. Regulations require them to be stated in their equivalent to the most prevalent greenhouse gas, CO_2.)*

The International Emissions Trading Association offers a wealth of information on the science of climate change, as well as international policy and market mechanisms for emissions trading. Learn how greenhouse gases are traded, what's involved in a typical greenhouse gas transaction and more about current national emissions trading schemes: **www.ieta.org**

Discover a unique resource for companies that gives an overview of different national emissions trading markets and brokerage services for greenhouse gases, renewable energy and other environmental products by visiting **www.co2e.com**

See the Canadian government's plan to reduce greenhouse gas emissions in *Project Green, Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment*: **www.climatechange.gc.ca/kyoto_commitments**