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Tax Green House Gas Emissions — No Caps, No Trades

A number of Canada's large industrial and electrical generation operations are major producers of greenhouse gases (GHG). Over the years since the Kyoto accord was signed, the expansion of these operations, particularly in resource extraction, has contributed significantly to the growth of the nation's GHG emissions, resulting in Canada moving farther from its targets rather than closer to them.

Years of studies, and not a little political reluctance, have resulted in no implementation of any scheme that would provide an incentive to these corporations to reduce their GHG emissions.

The problem of designing and applying incentives is not unique to Canada. The European Union, however, has implemented a 'cap & trade' scheme, in which corporations that find it expensive or currently technologically impractical to reduce these emissions to the 'cap' set by their governments may purchase 'GHG credits' from other EU industries that are below their 'caps.'

In addition, the United Nations has instigated the 'Clean Development Mechanism (CDM)' scheme (involving the World Bank and large financial organizations) which permits corporations to compensate for their emissions by purchasing GHG credits from development projects in countries that do not enforce 'caps.' The funds are to be used by the projects to reduce GHG emissions from what they would otherwise have been. But some CDM projects have been less than straightforward in expressing the GHG savings that could be made, and the credits available to sell.

Trading GHG Credits

The 'trade' part of 'cap & trade' is presented as a 'market solution' to the incentive problem. The price per tonne of GHG credits has varied wildly since the market was started (or as the UK's *Stern Review on the Economics of Climate Change* politely suggests, pricing is 'still bedding in'). Some nations set generous 'caps' for their industries; other industries and other nations set 'caps' which were tight and, via the market, exacted an almost immediate financial penalty upon corporations. Low or uncertain prices serve as a disincentive to emitters to

consider more expensive schemes to reduce GHG emissions.

However, there are technical problems both with measuring GHG emissions and setting 'caps.' The financial houses which took on the role of 'market makers' serve their own interests in trading this newly invented 'currency'. And finally, the three nations which are the largest emitters of GHG—the US, China, and India—do not have 'caps' at all.

The effect of these 'markets' is to satisfy the regulatory requirements of Kyoto's prime signatory nations at the minimum cost to corporations, without proof that world GHG emissions are being reduced. The application of a 'market solution' to this problem of nations may be based on ideology rather than common sense, and totally inappropriate.

Whither Canada?

Canada, which shoulders a significant part of the GHG burden of providing energy to the US, has particular problems since its growth in emissions is, in some ways, not under its control. Nevertheless, we must develop a scheme which will, as soon as possible, reduce our emissions while maintaining our economy.

Given the nation's reliance on exports, it is not open to us to reduce our emissions by reducing our production, either of commodities, energy, or manufactured goods. It is not sensible to penalize our industries or our governments by purchasing ill-priced credits from abroad. And we do not have a large enough industrial base to operate a stable GHG credit trading market internally.

For Canada, then, why not a straightforward GHG emission taxation system? This could provide strong incentives, predictability for industry, fairness and equity, and make use of conventional government procedures.

Setting Caps

Clearly, in implementing any sort of incentive system, the determination of caps—or what a reasonable target for emissions would be for any given industry—is problematic. Caps, after all, set the level of emissions which each industry is expected to achieve. It is also difficult to reconcile caps with a

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national target, because it requires us to assign our national GHG reduction targets between emission sources: industrial, consumer, transportation, natural sources, etc. This will be a source of endless, fruitless, theoretical argument.

In a Canadian context, it would necessarily be the subject of lengthy consultation and negotiation, and a great deal of political posturing and maneuvering.

We have already seen this in the form of a largely theoretical argument over whether GHG caps should be set on a per unit of production basis, or whether they should be set as absolute limits for each 'point source' of GHG emissions. Obviously absolute limits penalize a growing industry compared to a static or shrinking industry. But 'per unit' caps permit the total emissions to grow as production increases. And choosing an acceptable baseline year is downright difficult.

But the real point is that if you are not actually trading GHG credits, you don't need caps. Without them, and with taxation dependent on the absolute net tonnage of GHG from each source, the obvious objective for each taxable entity is to reduce GHG emissions to the minimum possible.

Isn't that what we wanted? After all, the Kyoto targets were not based in any way on what was possible, just what each country was emitting at the time. And whether we are attempting to meet them or not, we need the maximum reduction that can be made, not just a reduction to arbitrary 'caps'.

The GHG Tax

The following example demonstrates the principles of a simple GHG tax which requires no caps to be set and no trading regime.

1. We will need credible means of measuring annual net GHG production for each source. The measurement is in net tonnes of CO₂ equivalent (CO₂e). This would apply to each source geographically located in Canada, no matter what the nationality of its owners. Call this figure Q.

2. The recent Stern report set the eventual economic cost to the world of each tonne of CO₂e at U\$85 (C\$100), so let's use that figure as a tax per tonne. Call this figure R for rate.

3. The annual GHG tax for each point source is \$QxR. In order to provide flexibility to ease the transition into payment of GHG taxation (and possible effects on product pricing and share values), the tax could be based on a five-year moving average, and provision could also be made for its partial

deferral (shown on corporate books as long-term debt).

4. Each year the corporation must pay a set minimum percentage of the cumulative deferred tax to Revenue Canada.

5. Interest on the deferred tax total would also be payable each year, the interest rate to be set by Revenue Canada.

6. Taxes due but unpaid would be subject to the usual interest and penalties applied by Revenue Canada.

This would set up a taxation regime which is simple, predictable, and easy to understand, and provides clear and strong incentives to reduce GHG emissions. The averaging and deferral provisions give several clear options to deal with its effect on the financial health of corporations and industries. Corporations would be able to easily calculate the economics of investments in technology to reduce emissions.

The same rate would apply to all emitters in Canada, and need not vary by industry; there need be no caps, deductions, or credits in the Canadian system.

Tar Sands Oil

To put this calculation into perspective, current net GHG emissions from synthetic crude production from the tar sands are reported to range between .10 tonnes CO₂e per barrel (bbl) for in-situ steam extraction to .13 tonnes CO₂e/bbl for surface mining/processing. This would result in taxation of say \$10/bbl. (Crude prices have recently ranged widely between \$50 and \$75/bbl.)

Technological improvements, such as sequestration (re-injection of CO₂ deep below ground) have the potential to reduce these levels significantly. The deferral provision would give time for each operation to reduce its multi-year average emissions through technological innovation; in other words, time for the incentives inherent in this system to work.

Equity and Fairness

This simple approach avoids inequities in charging industry for its use of the atmospheric commons. The target in every case is zero GHG emissions; again, there are no caps, deductions, or credits. The rate applied is the same for all emitters. The averaging and deferral provisions provide options which can be used to compensate for differing levels of flexibility in product pricing and cash flows, particularly during the early years of implementation. Finally, it is relatively easy for corporations to calculate whether investments in GHG reduction are worthwhile over both the short and long terms. ☞

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