



Pick Your Poison

Every Harmful Policy Approach to Reduce Emissions

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EXECUTIVE SUMMARY

Much of the public controversy about climate policy in Canada focuses on the perceived advantages and disadvantages of so-called “carbon pricing”. This term refers to the use of taxes, fees and emissions trading systems (i.e., “cap and trade”) to raise the cost to consumers of using energy services produced by hydrocarbons (oil, natural gas and coal). This article argues that the debate over what role carbon pricing should play is a distraction from the far more important questions that Canadians should ask themselves about the measures that governments are taking to reduce emissions in Canada.

Most Canadians are unaware of the over 300 climate measures already being implemented by federal and provincial governments, or of their costs. The existing measures vary both in terms of the policy instrument used (e.g., taxes, regulations, subsidies and others) and in terms of the considerations that should apply to the choice of such instruments.

Ideally, governments should apply five broad standards, or sets of policy considerations. The key considerations relate to cost, effectiveness, efficiency, the degree of complexity, and the balance between government control and individual freedoms.

When one examines the current measures, one finds that regulations and subsidies are different from taxes but only by degree. They all are intended to change the underlying incentives to produce and to purchase. They all involve some degree of political and/or administrative discretion. Carbon pricing is at the centre of the federal government’s current climate policy approach, but the present system departs significantly from the theoretical model that economists use to justify it. Taxes can be portrayed as leaving the decisions of whether to spend or not in the hands of the consumers and producers. In fact, they represent a corruption of the role of prices in a free market economy, where high prices signify scarcity and low prices plenty. In the case of climate policy, the taxes increase the prices of energy services that are often increasingly plentiful and cheap.

It is easier politically to sell subsidies and other actions that allocate advantages to favoured “clean” industries and to “virtuous” consumers. This is probably why they were the favoured climate policy instruments of Canadian governments in the period 1992 to 2002. Only one type of climate policy-inspired subsidy seems to have fallen out of favour due to the experience in Ontario – charging electricity consumers sky-high feed-in-tariffs for renewable energy generation facilities. Subsidies provided through the tax system, however, have the enduring advantage that their cost to government treasuries does not show up on

governmental budgets, so they remain largely unseen by the public eye, and therefore more acceptable.

Regulations notionally have the advantage of having a more certain outcome. Though monitoring, compliance and the use of penalties, governments can ensure that emissions will be reduced. In fact, the last fifty years of energy policy in North America were characterized by the consistent failure of government action. Governments have far more often been wrong than right in their efforts to steer the energy economy, and their efforts have produced far more unintended consequences than good results.

The list of problems with the current climate policy approach is a long one. There is no complete national inventory of the programs. There is no assessment of how effective or cost effective they are, individually or as a group, in reducing emissions. There has been no benefit-cost analysis done on most of these programs. There is no commonly-agreed standard against which to judge which measures are cost effective and which are not. For example, no serious effort is usually made to assess the cost per tonne of the emissions avoided and to set an upper limit against which measures will be deemed unjustified. In fact, the prevailing philosophy appears to be that, "It does not matter what it costs, when we are saving the planet." No one can assess the comparative benefits, costs and cost effectiveness of tax, regulation, subsidy or other generic program measures. Perhaps most remarkably, none of the governments intends to eliminate any of the existing measures.

So, which is a better policy approach to reduce emissions – taxes, regulations, subsidies, or others? There are all harmful to Canada's economy in ways that we cannot even document or measure. Pick your poison.

It would be far better, of course, to take a new approach - to effectively manage the use of the government's funds in this area as though the economy and taxpayers' dollars matter.

PICK YOUR POISON

Understanding the Costs of Alternative Climate Policy Measures

Much of the public controversy about climate policy in Canada focuses on the perceived advantages and disadvantages of so-called “carbon pricing”. This term refers to the use of taxes, fees and emissions trading systems (i.e., “cap and trade”) to raise the cost to consumers of using energy services produced by hydrocarbons (oil, natural gas and coal).

This article will seek to show that the debate over what role carbon pricing should play is a distraction from the far more important questions that Canadians should ask themselves about the measures that governments are taking to reduce emissions in Canada. I will not here challenge the thesis as to whether these measures are needed at all.



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The Wide Array of Climate Measures in Canada

When discussing with others the problems that I see associated with Canadian climate policy, I am often confronted with the response that “Well, we can’t just do nothing!”. When, three years ago, I attempted to list and summarize all the existing federal and provincial government emission reduction programs, the list ran to seventeen pages. It would be much longer today. I offer this anecdote only to show how little the average Canadian is aware of all the measures that have been taken, or of their cost.

Generally, Canadian climate policy measures fall into eight categories:

- Taxation to increase the costs of hydrocarbon-based energy
- Regulation of new infrastructure to produce, transport, or use hydrocarbon energy to inhibit some types and to facilitate others, based on emissions considerations

- Regulation of the energy-using performance of vehicles, appliances and housing, among others
- Grants, contributions, and tax measures (i.e., deductions and exemptions) to advantage energy producers and builders and buyers of electricity-powered vehicles; these subsidies shift some of the costs from energy users to taxpayers and electricity ratepayers
- Publicly-funded research, development and commercialization of renewable energy and electric vehicle technologies
- Mandates (i.e., orders by governments) that give priority to certain energy sources over others
- Bans that prohibit some types of energy purchase and/or use altogether
- Taxpayer funding of non-governmental groups that advocate for more climate policy actions

The existing measures vary not only by the type of policy instrument used, but also in terms of other standards that are important from a policy perspective, and that governments should consider before they implement additional ones.

Ideally, governments should apply five broad standards, or sets of policy considerations. In each case, the measures now being implemented fall into different places in the spectrum of considerations.

Cost

It is always rational to seek to achieve any goal at the lowest possible cost. When society pays too much, scarce resources are wasted that could otherwise be used to better purpose. There are three different dimensions of cost with respect to government climate measures – the cost to the government (i.e., the taxpayer); the direct cost to public; and the cost to the economy. The latter concerns the reduction in economic activity and wellbeing that occurs as a result of the measure now and in the future. A related consideration is whether two or more organizations are incurring costs to achieve the same objective – in other words, whether there is duplication and overlap, with the associated waste of resources.

Effectiveness

While sometimes governments do things for symbolic reasons, it is usually preferred that the measures taken actually contribute to the achievement of a specific policy goal. In the case of climate measures, the usually stated goal is to reduce greenhouse gas emissions (GHG). A secondary and political goal is to meet the emissions reduction target that the government has set.

Efficiency

Efficiency blends the considerations of cost and effectiveness, as it relates to the dollars spent to achieve a certain unit of the intended results. With respect to climate policy, the standard that most countries apply is the cost in dollars per tonne of carbon dioxide equivalent emissions avoided.

Complexity vs. Simplicity

Complexity arises when there are multiple factors involved and their relationships change over time. The frequent result of complex government programs and other measures is that they are misunderstood by the public, creating confusion and detracting from the achievement of the other goals listed here. Generally speaking, the simpler, better-understood programs and measures are more effective and better accepted by the public.

Control vs. Individual Freedom

In deciding which measure to use, governments often must make value judgments as to how large a role command and control will play in contrast to leaving decisions in the hands of individual buyers and sellers in competitive markets. The type of measures can range widely, from those in which governments entirely remove individual choices by banning certain uses to the use of regulations to narrow the range of individuals' choices, to using taxes to make certain choices more expensive, to using information campaigns that leave choices entirely in individuals' hands.

Assessing Canada's Current Measures

The annexes to this article assess several of the existing climate measures in Canada in three categories: taxes, regulations and subsidies.

Annex 1 assesses the Canada carbon pricing system, comparing it to the theoretical ideal of carbon dioxide taxation that is used to justify it as the main policy instrument to be used by governments. Annex 2 assesses five regulatory measures. Annex 3 assesses two subsidy measures and lists those now provided to renewable energy.

What Difference Does the Choice of Policy Instruments Make?

As I hope my examples illustrate, regulations and subsidies are different from taxes but only by degree. They all are intended to change the underlying incentives to produce and to purchase. They all involve some degree of political and/or administrative discretion.

Even if the Canadian carbon dioxide tax regime were closer to economists' theoretical ideal, the public probably would dislike it. Taxes are visible, "in-your-face" reminders of

government action, and they directly affect prices and people's monthly budgets. Governments that achieve their policy objectives by raising taxes therefore must go to extraordinary lengths to make the taxes appear modest (i.e., gradual) and fair (i.e., sometimes by ensuring that most of the revenues produced, initially at least, will be rebated to the public).

Taxes can be portrayed as leaving the decisions of whether to spend or not in the hands of the consumers and producers. In fact, they represent a corruption of the role of prices in a free market economy, where high prices signify scarcity and low prices plenty. In the case of climate policy, the taxes increase the prices of energy services that are often increasingly plentiful and cheap.

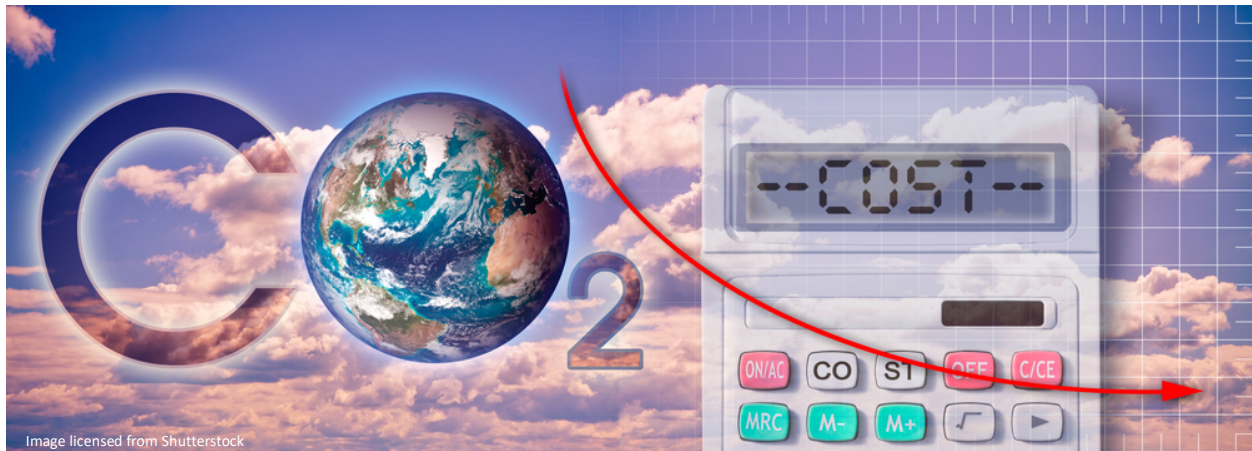
It is easier politically to sell subsidies and other actions that allocate advantages to favoured "clean" industries and to "virtuous" consumers. This is probably why they were the favoured climate policy instruments of Canadian governments in the period 1992 to 2002. Only one type of climate policy-inspired subsidy seems to have fallen out of favour due to the experience in Ontario – charging electricity consumers sky-high feed-in-tariffs for renewable energy generation facilities. Subsidies provided through the tax system, however, have the enduring advantage that their cost to government treasuries does not show up on governmental budgets, so they remain largely unseen by the public eye, and therefore more acceptable.

Regulations notionally have the advantage of allowing a higher certainty of outcome in that, though monitoring, compliance and the use of penalties, governments can ensure that the public behaves as it is directed to in terms of its energy production and consumption decisions. "Command and control" have a powerful appeal for many who are convinced that climate change imposes a moral imperative. For this reason, some sources argue strongly that regulations are far more effective as well as efficient in achieving the desired outcome of lower emissions.¹

In contrast, Professor Peter Grossman of Butler University has argued eloquently that the last fifty years of energy policy in North America was characterized by the consistent failure of government action.² Among other problems, Grossman identifies the politician's belief that passing a piece of legislation mandating a particular technology path, such as Canada's aspirational electric vehicle targets, will be sufficient to ensure the desired outcome. This belief complements the idea that largescale "cleaner" technologies (such as hydrogen, carbon capture and sequestration, and wind power) can be a panacea to resolve the conflicting policy objectives of energy sufficiency, environmental sustainability, and national security, despite their lack of timely technical feasibility and their other costs (such as the intermittency of wind and the dangers of wind turbines to many bird species, including endangered eagles). Grossman shows that governments have far more often been wrong than right in their efforts to steer the energy economy, and that their efforts have produced far more unintended consequences than good results.

¹ Daniel Cole, *When is Command-and-Control Efficient? Institutions, Technology, and the Comparative Efficiency of Alternative Regimes for Environmental Protection*. Maurer School of Law, 1999

² Peter Grossman. *U.S. Energy Policy and the Pursuit of Failure*. Cambridge University Press. 2013



One implicit advantage of carbon pricing is supposed to be the simplicity of the system - that is, a single price that guides buyers' and sellers' decisions on energy sources and does not require constant adjustments and discretionary decisions by politicians and the officials who administer the system. The Canadian system, however, is anything but simple, both because of the number and diversity of regimes and because of the number of decisions that it places in the hands of system designers and administrators.

For example, officials must make decisions on the following matters:

- Federal officials must decide how to reconcile differences between the federal government framework, including carbon levies and output-based pricing systems, and those of the provinces; if reconciliation is not possible, officials must decide what interventions to make;
- Federal officials must decide which sectors, groups and fuel uses will be granted exemptions from the carbon levy;
- Federal officials must decide which emissions intensity standard will be applied for each type of industrial activity; inclusion may mean the difference between commercial survival and bankruptcy for individual firms.
- Similarly, federal officials must decide how to change the sector and firm emissions intensity standards as time goes on to reflect "best-in-class";
- Officials must decide which types of emissions reduction activities and trading permits will qualify as "offset credits" for the output-based pricing system;
- Federal officials, and probably politicians, will have to decide which industrial sectors qualify as being in the "high competitive risk" category that will allow them to operate under a lower threshold of emissions subject to output-based pricing.
- Provincial officials will have to make similar decisions with respect to their output-based pricing systems and emissions trading systems where these apply.

The federal government department making these decisions will be ECCC. So, as the stringency of emissions standards increase and the levels of carbon taxes and permit prices rise, the department responsible for environmental policy will be tasked with making some of the most important energy and economic policy decisions of the Canadian federal

government. ECCC historically has been a department the majority of whose staff are scientists, not economists or industry experts. In recent years, the senior levels of the department's permanent (i.e., non-political) staff as well as the Minister's political staff have been filled by former members of influential environmental non-governmental organizations (ENGOS) in Canada, such as the World Wildlife Fund, the David Suzuki Foundation, the Sierra Club and the Pembina Institute. Many of these officials, now in positions of great influence, openly serve an ideological "green" agenda. From the perspective of Canada's economic wellbeing, what could go wrong?



There Has to be a Better Way

The federal government biannually reports to the United Nations on Canada's climate policies and programs. There are now somewhere between 300 and 600 programs in place at the federal, provincial and territorial government levels. They have no intention of eliminating any of them. There are an uncounted number of municipal programs and initiatives (e.g., zoning changes, bike paths, solar energy installations, etc.) added every year.

The pricing and non-pricing measures share many common traits in terms of their costs and degree of intrusiveness in people's lives; they mark different points on a spectrum, not fundamentally different types of measures.

There is no complete national inventory of the programs.

There is no assessment of how effective or cost effective they are, individually or as a group, in reducing emissions.

There has been no benefit-cost analysis done on most of these programs.

There has been no assessment of the extent to which these programs or major subsets of them (e.g., those that affect the transportation sector) duplicate and overlap with one another.

There is no commonly-agreed standard against which to judge which measures are cost effective and which are not. For example, no serious effort is usually made to assess the cost per tonne of the emissions avoided and to set an upper limit against which measures will be deemed unjustified. In fact, the prevailing philosophy appears to be that, “It does not matter what it costs, when we are saving the planet.”

Governments have different emission reduction goals, do not manage or measure the effects of what they are now doing and spending to reduce emissions, and have only the loosest of coordination mechanisms in place.

Consequently, no one knows how much Canada is now spending to reduce GHG emissions or how effective the measures are. No one can assess the comparative benefits, costs and cost effectiveness of tax, regulation, subsidy or other generic program measures. No one knows how many people are employed in this effort

Perhaps most remarkably, none of the governments that annually increase the number of measures and the level of expenditures has any intention of reducing any of the existing measures.

So, which is a better policy approach to reduce emissions – taxes, regulations, subsidies or others? There are all harmful to Canada’s economy in ways that we cannot even document or measure. Pick your poison.

A modest suggestion, in these circumstances, is that the Conservative Party, as well as the other parties, cease a meaningless debate over the role that carbon dioxide taxes play in the overall scheme, and seek to move in the direction of effectively managing the use of the government’s funds in this area as though the economy and taxpayers’ dollars matter.



The Canadian Carbon Pricing System

In 2019, the Global Warming Policy Foundation published a paper that I wrote describing the problems with the Canadian carbon pricing system. It can be seen here:

<https://www.thegwpf.org/canadas-carbon-taxation-its-worse-than-thought/>

The Canadian carbon pricing system is not uniform across Canada. The federal government's national policy framework allows each province and territory to decide how it will implement carbon pricing, while at the same time setting certain minimum conditions that must be met. Consequently, the system varies considerably by provincial and territorial jurisdiction in terms of its coverage, rates, design features, and the disposition or rebate of funds raised by governments. The framework requires that the carbon "levy" (i.e., the carbon dioxide tax rise continuously, and that the emissions trading permit price do so as well. Starting at \$10 per tonne of CO₂ equivalent in 2018, the rate must increase by \$10 per tonne per year until it reaches \$50 per tonne in 2022. According to the announced plans of the Trudeau government, the carbon levy will rise to at least \$170 per tonne by 2030. The provincial jurisdictions must return a portion of the revenues collected from the levy to the public, although there is considerable room for flexibility in how this is done. If, in the federal government's judgment, a province or territory does not meet these conditions, the government will impose a 'backstop' system. The backstop system now applies in New Brunswick, Ontario, Manitoba, Saskatchewan, and Alberta.

Jurisdictions may use either carbon taxes or emissions trading ('cap and trade') systems. For larger emitters, they may also employ output-based pricing systems (OBSP). An OBSP imposes fees on firms that do not meet prescribed levels of emissions intensity in their production processes.

The current systems depart considerably from the theoretical ideal that is often used by proponents to justify it. In theory, the price increase caused by carbon taxes should reflect the "social cost of carbon", or the estimated present value of the impact that an emitted tonne of carbon dioxide today will have on humans in the future. In fact, no one really knows what this is. There are other alternative bases upon which to set the "social cost", such as the current market price of internationally traded carbon credits. The Canadian rates, however, bear no relationship to the social cost that, theoretically, they are supposed to represent. The rates are based on political, not economic, considerations.

Proponents view carbon taxes as beneficial because they allegedly provide a market-based substitute for a host of intrusive government programs and regulations that would more directly control consumer and industry behaviour. Canada's system, in contrast, merely adds to a large and growing number of government regulations, subsidies and other program measures. There are over 300 of these.

The theory that justifies the use of carbon pricing tends to minimize or discount the adverse effects that such systems will have on international competitiveness. However, in Canada the taxes will have severe adverse effects on the emissions-intensive sectors and firms in Canada. By far the largest adverse impacts will occur in Alberta and Saskatchewan, where almost half of all Canadian emissions occur. This is not just a western Canadian problem, though. The energy-intensive resource and manufacturing industries in other provinces and territories must inevitably be affected by the impact of the taxes on their competitiveness. This includes primarily firms in the emissions-intensive industries like mining, petrochemicals, iron, steel, cement, metal fabrication and vehicle and parts manufacturing. The United States, our main trading partner, has no federal carbon tax and China has regional taxes of about \$2 per tonne.

Carbon tax rates vary considerably across Canada. They are highest in provinces and territories subject to the federal “backstop” regime, and lowest in Atlantic Canada and, for the time being, in Quebec. Quebec’s carbon emission prices will be set by the price of permits in the Western Climate Initiative, a common market for permits that Quebec shares with the State of California. Based on the most recent auction (February 2021) the permit price is now \$23.16 per tonne, less than the \$30.00 per tonne rate of the carbon dioxide tax in most of Canada, and well under the carbon tax rate of \$40.00 per tonne that will apply effective April 1, 2021. Quebec firms that are covered by the emissions trading regime pay millions of dollars to California permit sellers, but the cost they bear is less than what the residents of other provinces pay to governments in carbon taxes. Many Quebec firms are in fact exempted entirely from the emissions trading regime, giving them an even larger competitive advantage.

Revenue recycling, in economic theory, should be done in ways that would minimize the adverse macroeconomic effects of the tax, ideally through reductions in the rates of other generally applied taxes like the HST or corporate income taxes. The Canadian system, to the extent that it provides for revenue recycling, is instead an income redistribution system for individuals and families. It is still not yet clear how much businesses will benefit from rebates. The rebates thus serve essentially to deflect the criticism that carbon taxes are a “revenue grab”, while failing to compensate households for the full economic costs of imposing the tax.

The OBPS includes a number of features that depart even further from the theoretical ideal of a carbon pricing framework. Such a framework would leave the choice of emissions reduction options to the marketplace, without politicians and officials exercising “administrative discretion”. Under the OBPS, an emissions intensity standard will be established by regulation for each type of industrial activity. Facilities in the system that emit more than the limit that corresponds to the relevant emissions-intensity standard must submit “compliance units” or pay the carbon tax equivalent to make up the difference. Facilities that emit less than the limit that corresponds to the relevant emissions-intensity standard will receive “surplus credits” from the government of Canada that they can bank for future use or trade to another participant in the output based system. Each standard will be set by Environment and Climate Change Canada (ECCC) or by the relevant

provincial environment ministry at a level that represents the “best-in-class” performance, defined as the top quartile or better in order to drive reduced emissions intensity ever higher. Penalties will be imposed on emitters based on their emissions rising over a certain percentage of the industrial average of their sector. Exemptions may be granted for certain sectors judged by politicians to be too highly exposed to international competition.

In summary, the Canadian carbon pricing system is a complex and deeply flawed departure from the theoretical ideal that proponents use to justify its implementation. It is difficult to foresee a path or process by which the system could be fundamentally reformed so as to move it closer to the theoretical ideal. If it has merits, they only exist in comparison to the design of the remaining climate policy measures.

Regulation

Environmental regulation evolved historically based on the theory that pollution was a social cost or “externality” that would not normally be reflected in the decisions that the buyers and sellers of products might make based on free market pricing alone. Governments thus considered themselves warranted in imposing restrictions, or setting standards and codes, that would at least discourage, or possibly prohibit, the pollution. Political acceptance of the climate “catastrophe” thesis has led to this practice being extended to carbon dioxide emissions.

It is appropriate to pause here to ponder the inclusion of carbon dioxide as not only a pollutant but actually a “toxic” under the terms of the Canadian Environmental Protection Act (CEPA). Carbon dioxide is an inert, non-toxic, odorless and invisible gas that is essential to all life on earth. Every breath that a person exhales contains almost 40,000 parts per million into an atmosphere that contains only about 410 parts per million. There is no evidence that past emissions of carbon dioxide have had any direct effect on global temperatures. Yet, Canadian policy and law place it in the same category for purposes of regulation as asbestos, mercury and benzene and authorize extensive measures to restrict present and future emissions. One has to wonder whether this is due to an extraordinary leap of logic or the studious application of ideology and mythology to environmental science.

Carbon dioxide is different from genuine pollutants and toxics in another fundamental way. The real “toxics” are usually produced by a limited number of industrial processes or plants. Their production is site-specific and related to a relatively small number of activities in the economy. Carbon dioxide, in contrast, is produced by virtually all economic activities; it is almost all-pervasive in the economy and its emission is closely correlated with higher standards of living. When governments assume the authority to regulate all aspects of carbon dioxide emissions, they in effect claim an unprecedented right to control almost every aspect of economic life.

The types of regulation now used in Canada vary in their intrusiveness and cost. Here, I will offer five examples – mandatory labelling of appliance energy use; the regulation of motor vehicle GHG emission standards; the Clean Fuel Standard; the progressive banning of internal combustion engines for light duty vehicles; and the environmental assessment and review of oil and natural gas pipeline projects.

Appliance Labelling

The mandatory labelling of the energy efficiency of refrigerators, washing machines, clothes dryers and other appliances imposes a cost on manufacturers. The purpose of the labelling is to inform the consumer so that he or she can make a better decision about

which model to purchase. In other words, it is a form of regulation that leaves the key decision with the consumer.

Light Duty Vehicle GHG Emissions Standards

The regulation of motor vehicle GHG emissions intensity (sometimes presented as fuel efficiency) is more intrusive. In that case, governments decide based on their judgments of what available technology would permit. They also decide the appropriate trade-offs between emissions, manufacturer and consumer costs, and other considerations like safety (lighter, less emissions-intensive vehicles, generally result in higher rates of injury and deaths from accidents). The government decisions often reduce the range of vehicle choices available to the consumer, increase vehicle costs, and reduce vehicle safety. In effect, officials substitute their judgement for that of vehicle manufacturers both as to the market-readiness of vehicle technologies and likely consumer preferences. The consumer, of course, retains the freedom of choice as to whether or not to buy and whether to buy a class of vehicle with higher emissions ratings (e.g., SUVs) rather than cars. Significantly, sales of SUVs have been booming.

The Clean Fuel Standard

The government of Canada is now implementing the Clean Fuel Standard (CFS), a set of regulations that will cover all fossil fuels used in Canada. The regulations are intended to reduce carbon dioxide emissions by making the production and use of oil, natural gas, and coal more expensive. The standard is being implemented in a phased approach, with those governing liquid fuels published in draft in 2020 and those for natural gas and coal published in draft later, and with final regulations issued in 2022. The regulations will establish standards that will increase in severity every year.

The CFS will impose new “carbon intensity” requirements on fuel sellers. To meet the requirements, fuel sellers can seek to increase their suppliers’ emissions intensity, switch to lower carbon-intensity crude oils (i.e., to imported sources and away from Canadian heavy crude) use “lower-carbon-intensity fuels” like ethanol, invest in renewable energy projects, buy credits from “suppliers of low-carbon intensity fuels”, or take other measures. The range of choices makes it difficult to estimate exactly how costly the CFS will be.

Strictly speaking, the CFS is a regulation, not a direct subsidy program. The credit system, however, will serve as yet another back-door subsidy system for ethanol producers, electric vehicle manufacturers and wind and solar energy projects.

The CFS will certainly raise the costs of energy for consumers and business. The Canadian Energy Research Institute estimates potential natural gas cost increases of 58-116 per cent, liquid fuel price increases of 9-10 per cent, and a coal price increase of about \$3.50 per gigajoule (an increase of about 150 per cent). LFX Associates, judging such price increases to be politically intolerable, examined a scenario in which the bulk of the cost increases and adjustments fell on oil consumers, with natural gas prices rising by only 15 per cent. The

LFX study projected that the CFS will result in 30,000 job losses and \$22 billion in capital flight from Canada. This is a good example of a regulatory program that offers an indirect subsidy to “clean energy” but at the cost of billions of dollars to energy consumers and the general economy.

Banning of Internal Combustion Engines

The federal government has declared that the sale of internal combustion light duty vehicles (cars, SUVs and pickup trucks) will be banned according to a schedule that begins in 2025 and ends in 2040, so that by 2040 no person in Canada will be able to purchase a gasoline or diesel-powered vehicle. In this case, the government is substituting its judgment entirely for those of the manufacturer or the consumer. It is saying, in effect, that it is willing to impose a “social” choice that completely overrides that of the buyers and sellers because it finds unacceptable the consequence of allowing the freely-chosen production and use of a certain product or technology. Consumers, of course, can (and will) continue to use and repair vehicles with internal combustion engines long after the ban on the sale of new units is complete.

“Strategic Environmental Assessment”

The federal government recently published its revised requirements for project sponsors related to the consideration of climate change issues when the sponsors of designated projects undergo environmental assessment. Under the new Impact Assessment Act, each project on the designated project list must undergo first a review in principle to determine its compliance with the federal government’s climate policy framework and indigenous reconciliation goals before undergoing a more traditional project review that examines the specific local environmental impacts. The project list includes the construction, operation, decommissioning and abandonment of many kinds of projects in the energy, mining, and transportation industries. The same review process requirements can potentially apply to an oil pipeline, a diamond mine, a new powerplant, an airport or a railway, or significant additions to any of these.

The impact assessment legislation approved by Parliament set no specific GHG emission targets for Canada. The Trudeau government, however, superimposed on the legislative requirements additional regulatory ones that derive from its political objective that Canada meet a “net zero emissions goal” by 2050. Further, the government has interpreted this goal to mean that every new or expanded project must itself adhere to a net zero emissions goal. This type of regulation is essentially aimed at substantially increasing the costs of compliance with environmental assessment, lengthening the time required for review and increasing the uncertainty associated with the overall process. It sends a signal to potential project sponsors that they will face serious political obstacles in obtaining approval of permits to build multi-billion projects, so they should act accordingly.

Subsidies

The term “subsidy” is perhaps an over-generalization. Governments in Canada have proven remarkably imaginative as well as persistent in coming up with more and more ways to grant market and cost advantages to investors or consumers to accelerate the use of renewable energy technologies.

In what follows, I have chosen two examples of the subsidies to illustrate how they affect producers, consumers and taxpayers – the accelerated capital cost allowance for “clean energy” investments, the Clean Fuel Standard, and the subsidies to purchasers of electric vehicles. The list of subsidies for renewable energy that follows speaks for itself.

Accelerated Capital Cost Allowances

A capital cost allowance is a tax deduction that a company may claim against its corporate income tax owing in a given year for the costs of depreciation of certain capital equipment. When the law allows the depreciation rate charged to be higher than the usual rate at which the capital equipment is depreciated for accounting purposes (often on a “straight line” basis over 20 years), this effectively allows the company to pay lower taxes in the early life of an investment and higher taxes later. This gives a tax advantage because of the “time value” of money. When the allowed rate of depreciation is set very high (e.g., at 30% or above), it means that the company may be able to time its capital investments so as to delay paying taxes for years.

Under Classes 43.1 and 43.2 in Schedule II of the Income Tax Regulations, certain capital costs of systems that produce energy by using renewable sources or fuels from waste or that conserve energy by using fuel more efficiently are eligible for accelerated capital cost allowance. Under Class 43.1, eligible equipment may be written off at 30 percent per year on a declining balance basis. In general, equipment that is eligible for Class 43.1 but is acquired after February 22, 2005, and before 2025 may be written off at 50 percent per year on a declining balance basis under Class 43.2. Without these accelerated write-offs, many of these assets would be depreciated for income tax purposes at annual rates between 4 and 20 percent.

This is a subsidy in the sense that it is an incentive to invest and that the company can only earn by investing. In theory, the result of the investment will be higher economic activity that will yield back to the country (and the federal treasury) more money than is foregone by the favourable depreciation rates. That is indeed what happened when such incentives were available to the oil and gas industry. In the case of the renewable energy industry, there is so far little evidence that the payback to the economy will warrant the benefit conferred. The subsidy grants a slight competitive advantage to renewables investors over

those in other energy industries, and imposes only a moderate cost, in the form of foregone revenues, on the general taxpayer.

Taxpayer-funded Incentives for EV Purchase

There are three grant programs to benefit EV purchasers at the federal and provincial government levels in Canada. These include the Federal Incentive for Electric Cars and Plug-in Hybrids. The subsidy (a rebate) ranges from \$2,500 to \$5,000 per purchased or leased vehicle. Under the Quebec Incentive Program, a resident of Quebec can obtain subsidies ranging from \$3,000 to \$8,000 per purchased or leased vehicle. (Thus, the purchaser of an EV in Quebec could receive up to \$13,000 in subsidies from the federal and Quebec governments for the purchase of an EV.) finally, British Columbia offers residents a subsidy ranging from \$2,000 to \$5,000 for the purchase of an EV.

Ian Irvine, a Professor of Economics at Concordia University in Montreal, wrote an article in 2017³ in which he examined, among other things, the costs of electric vehicles, the inter-relationship between EV subsidies and regulations, and the distributional effects. Irvine elaborated on the “free rider” problem, the fact many people who purchase EVs would have done so without the subsidy, so it is unneeded. Quoting other experts and studies, he explained that three-quarters of recipients would have purchased the subsidized vehicle without the inducement. A related problem concerns the effect of subsidies in transferring income from the general tax-paying population to the recipients of the subsidies.

Because wealthy people are more likely to purchase new vehicles, subsidies for new car purchases (EV or not) will tend to benefit the wealthy. Electric vehicles tend to have lower ranges than gasoline vehicles, making them less attractive as a household’s first vehicle. Households that purchase electric vehicles are therefore more likely to be able to afford several vehicles, rather than just one. Finally, because many electric vehicles are expensive compared to gasoline vehicles, they tend to be purchased by wealthier individuals. These factors have the combined effect of making policies that subsidize the purchase of electric vehicles particularly regressive.

Subsidies and Other Forms of Government Assistance to Renewable Energy in Canada

The list here is very long:

- Direct government investment in plants that manufacture renewables equipment, ethanol and biodiesel
- Ethanol and biofuel mandates setting minimum standards for fuel content or minimum quantities of biofuels that refiners must purchase every year
- Mandated phase out of competing coal and nuclear power generation
- Funding of research and development conducted either in government research facilities or private research laboratories

³ Ian Irvine, *Electric Vehicle Subsidies in the Era of Attribute-Based Regulations*, Canadian Public Policy, March 2017 pp. 50-60

- Funding for technology demonstration projects
- Funding for R&D on bulk energy storage technologies
- Grants, contributions, and low-interest loans made either to suppliers or purchasers
- Tax incentives such as credits, deductions and exemptions that are provided to renewables producers or purchasers
- Tax incentives that allow renewables producers to pass through the benefits to other investors in the form of flow-through shares
- Tax incentives for “Green Bonds”
- Qualification of renewable energy projects as “offsets” from which companies governed by emissions trading systems (i.e., “cap and trade”) can buy emissions permits
- Preferential, above-market utility rates, as used in “feed-in-tariff” regimes, guaranteed at fixed rates for the life of the contract
- Priority access (“first-to-the-grid”) rights that require the electricity system operators to use the production from wind and solar generation when it was available, and to back out, or “curtail”, alternative sources of supply
- Requiring the construction of other transmission and distribution systems expansions and upgrades (e.g., “smart meters” and other “smart” systems) to accommodate the additional renewable generation capacity
- Requiring other suppliers and ratepayers to pay for the cost of additional balancing and flexibility (e.g., backup generation) to deal with situations when demand was high, but the sun was not shining or the wind blowing
- Similarly, requiring ratepayers to pay the costs of dumping surplus power supplies on export markets when the renewables plants produced electricity, but the demand was low
- Preferential government procurement practices
- Restrictions on the authority of local governments to impose property and other taxes on wind and solar projects
- Granting renewable energy generators exemptions from environmental assessment and land-use planning requirements that apply to all other energy projects
- Granting power plants exemptions from GHG emissions standards for emissions caused by burning wood (i.e., treating biomass as carbon dioxide-neutral), even though the forests cut down to produce the wood chips will take decades of tree growth to reabsorb the released CO₂
- Exemptions from species-at-risk legislation in several areas to avoid prohibitions due to adverse effects on rare birds and bats
- Often overlooking health-related complaints about the effects of industrial wind turbines or failing to enforce setback requirements separating the turbines from residences.

About the Author

Robert Lyman is an economist with 27 years' experience as an analyst, policy advisor and manager in the Canadian federal government, primarily in the areas of energy, transportation, and environmental policy. He was also a diplomat for 10 years. Subsequently he has worked as a private consultant conducting policy research and analysis on energy and transportation issues as a principal for Entrans Policy Research Group. He is a frequent contributor of articles and reports for Friends of Science, a Calgary-based independent organization concerned about climate change-related issues. He resides in Ottawa, Canada. [Full bio.](#)

About Friends of Science Society

Friends of Science Society is an independent group of earth, atmospheric and solar scientists, engineers, and citizens that is celebrating its 18th year of offering climate science insights. After a thorough review of a broad spectrum of literature on climate change, Friends of Science Society has concluded that the sun is the main driver of climate change, not carbon dioxide (CO₂).

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