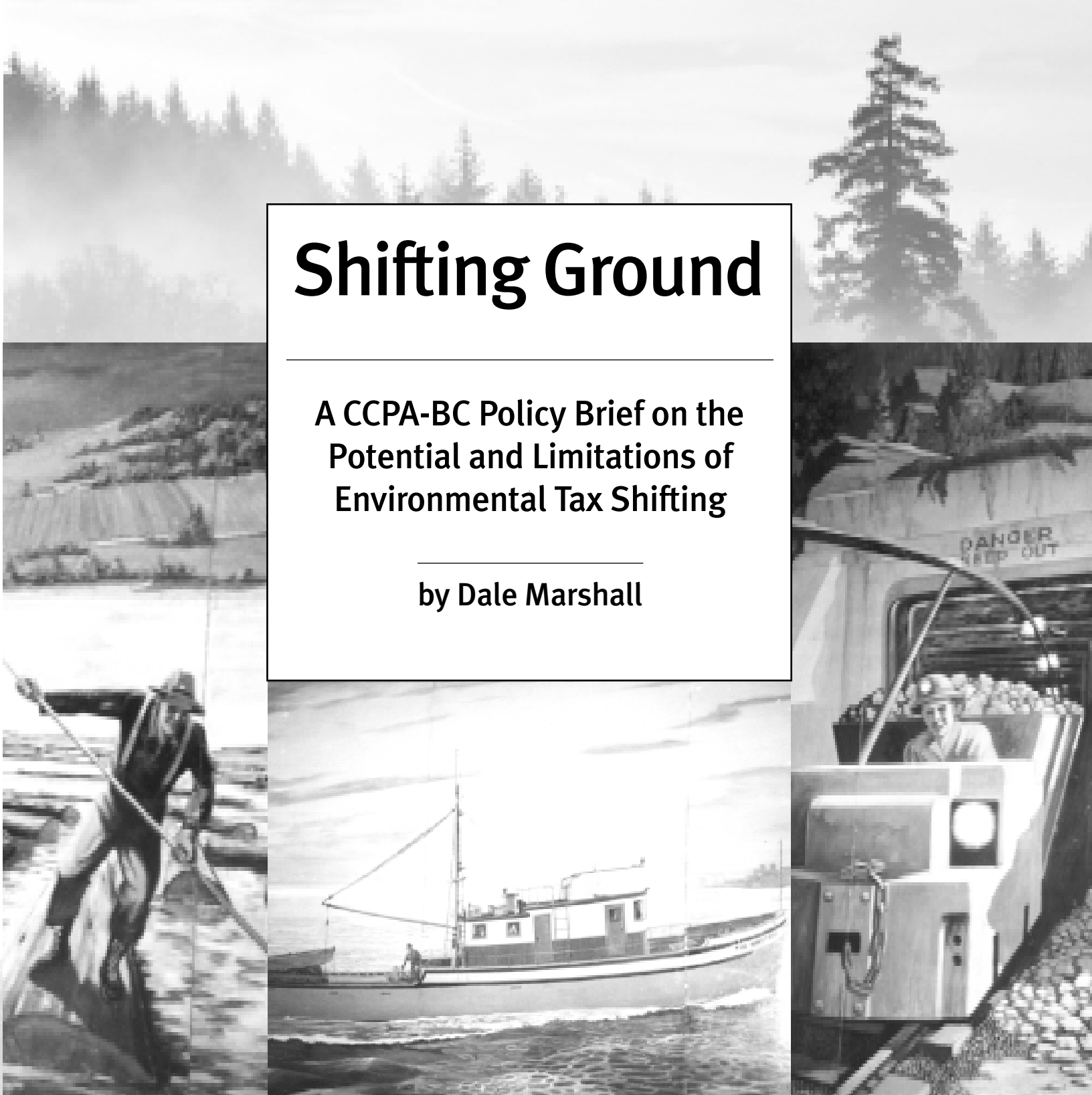


Shifting Ground

A CCPA-BC Policy Brief on the
Potential and Limitations of
Environmental Tax Shifting

by Dale Marshall



CANADIAN CENTRE FOR POLICY ALTERNATIVES

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1. Introduction

IN BRITISH COLUMBIA, THOSE CONCERNED ABOUT THE ENVIRONMENT have become increasingly aware of a relatively new policy tool: environmental tax shifting. The idea behind tax shifting is that we should shift taxes from societal “goods” (income, employment) to environmental “bads” (pollution, resource degradation). This is partly due to BC’s provincial government, which has developed and promoted a green economy strategy, with environmental tax shifting as one element in the initiative. The idea of tax shifting is a compelling one. Indeed, any policy that promises both increased environmental protection and a stronger economy will draw support from varied interests.

This policy brief is intended to assess, from an environmentally and socially progressive perspective, the validity of the claims made by tax shifting advocates and to determine the implications of using environmental tax shifting for British Columbians and Canadians. Several important findings have been developed through this endeavor.

The first is that policies and regulations that protect our environment and manage our natural resources cannot be replaced by economic instruments, including environmental tax shifting. Despite the criticism by neoliberal thinkers of “command-and-control” regulations, in most cases regulations are both more effective and efficient than market mechanisms such as tax shifting in protecting ecological systems.

Environmental taxes are used to correct a market failure—environmental and social externalities. Advocates of environmental taxes sometimes believe that once these social and environmental costs are internalized, the market will then operate efficiently. This view ignores all the other failures of the “free” market: high levels of income inequality, poverty, underproduction of public goods like infrastructure, and depletion of natural resources, to name a few.

Second, there is a place for environmental taxes and environmental tax shifting. Correcting the problem of environmental externalities, by making

producers and consumers pay the real price of goods and services, is an important goal that can lead to better use of our precious environmental resources. The BC government should continue developing its green economy initiative, understanding the limitations outlined in this brief. Environmental tax shifting should not, however, be used to download costs or to forego the government’s responsibility of protecting our environment and ensuring that our renewable resources are sustainably managed.

Third, because taxes are often not as targeted as regulations, they can lead to unintended consequences. These include regressive effects (the poor paying a disproportionately high share of the tax), the loss of jobs in certain regions or sectors, and the loss of competitiveness for certain domestic firms. These effects must be estimated beforehand and addressed when implementing any environmental tax program.

Finally—and potentially most importantly—each environmental problem must be assessed on its own and all policy instruments considered. This includes using a variety of regulations (both “sticks” and “carrots”) and economic instruments like environmental taxes. Using different policies in conjunction can allow the advantages of each to be realized.

Policies and regulations that protect our environment and manage our natural resources cannot be replaced by economic instruments, including environmental tax shifting.

2. Troubling Trends in BC's Regulatory Environment

AT THE SAME TIME AS THE BRITISH COLUMBIA GOVERNMENT HAS EMBARKED UPON an environmental tax shifting agenda (a major initiative of the recently created Green Economy Secretariate), it has also retreated from comprehensive regulations that protect the environment. This has occurred through decreased budgets for the Ministry of Environment and the Ministry of Forests, and through energy deregulation. It is important that discussion about tax shifting be placed in this context.

2.1 Cutting Ministry budgets

It is evident that there has been, to some extent, a regulatory retreat in British Columbia. This has happened not only with respect to the actual easing or streamlining of environmental legislation, such as the Forest Practices Code, but also has occurred at the level of monitoring and enforcement of those regulations. In the last four years, the provincial ministries most responsible for protection of our ecosystems—

the Ministry of Environment, Lands, and Parks (MELP) and the Ministry of Forests (MoF)—have had their budgets significantly cut. Between 1996 and 2000, the MELP and MoF budgets have declined by 18% and 30% respectively (Table 1).¹

These overall funding cuts have manifested themselves in two ways. First, staffing levels at both ministries have been reduced. The number of full-time equivalents (FTEs)² has been reduced by 21% at Environment and by 19% at Forests (Table 1). Second, spending budgets have also been reduced. Each re-

TABLE 1: Changes in the Budgets and Employment of the Ministry of Forests and Ministry of the Environment, Lands and Parks, 1996-2000

	96/97	00/01	CHANGE	% CHANGE
BUDGET¹ (\$ MILLIONS)				
MOF	712	495	-216	-30%
MELP	236	195	-41	-18%
TOTAL	948	690	-258	-27%
EMPLOYMENT² (FTES*)				
MOF	4810	3997	-813	-17%
MELP	2443	1934	-509	-21%
TOTAL	7253	5931	-1322	-18%
* FTEs: full time equivalents				
Source: 1 BCGEU, 2000; 2 BC MoF, MELP Ann. Reports				

maining MELP staff member now operates on approximately half the expenses of five years ago.³

Downsizing ministry staff and starving the ministries of needed funding represents a shift to self-regulation for many agencies and industries operating in BC. Though it saves the government money in the short term, there are dire consequences for monitoring and enforcement of provincial regulations and for overall environmental protection. One can get a glimpse of this impact by looking at the surveys conducted of MoF and MELP staff. At the MELP, 88% of employees say they do not have adequate funding and support to effectively protect the environment, while 91% state that staffing levels for enforcement and monitoring of fish and wildlife are poor or very poor.⁴ At the MoF, 54% of employees believe monitoring and enforcement of forest companies is inadequate to ensure compliance with the Forest Practices Code, and 64% state that good forest management practices have been compromised by the Ministry's initiatives to reduce red tape and industry costs.⁵

2.2 Deregulating energy

A regulatory retreat in BC is also occurring through the process of energy reregulation. BC appears to have embarked upon a one-way street of privatization, deregulation, and the increased use of non-renewable energy. This started under the Social Credit government with the privatization of BC Gas in 1989, and is now continuing with the BC Utilities Commission's decisions that encourage the private generation of electricity. BC is further drawn into the deregulating regimes initiated in the U.S. through various activities of BC Hydro, including its aggressive entry into energy trading and reliance on buying electricity from private providers rather than increasing generation itself. These activities have been pursued in anticipation of further deregulatory measures by the BC Utilities Commission, and with a complacent BC government looking on.

The effect of continued deregulation is to move away from energy conservation and towards increased use, primarily based on the use of natural gas. With BC Hydro sensing that full deregulation is close at hand, the Crown corporation has discontinued its demand-side management programs like Power Smart, which encouraged energy efficiency and conservation.

Demand-side management schemes make sense for a government monopoly, since encouraging conservation is cheaper than increasing energy supply for the sole energy provider. In a deregulated market the whole point is to sell more energy, not less, and private companies who are allowed in will be pushing in this direction.

2.3 An environmental imperative

The scale of human impact on the environment is unprecedented. In BC—as in many places in the world—population growth, increased per capita consumption of material goods, and development of increasingly destructive technologies have made it necessary to explicitly protect ecological values that are essential for all living things.

The trends are not reassuring. Greenhouse gas emissions in BC increased by 21% between 1990 and 1997 despite international agreements to stabilize them.⁶ The lower Fraser Valley is the second most polluted airshed in Canada. Over 20,000 potentially hazardous chemicals are presently being used or discharged into the Canadian environment, and humans create close to 1,000 more each year.⁷ The rate that forestry companies are logging BC's forests is above what our own Ministry of Forests estimates is sustainable. Finally, Canada has 353 threatened or endangered species, and the list grows every year.⁸ Our activities are no longer easily absorbed by the natural world. More than ever, we need to maintain and even strengthen our environmental policies and regulations.

Economists and environmentalists alike have made a compelling case for using environmental tax shifting to solve at least some of our environmental dilemmas. The next section will summarize the arguments made for using environmental tax shifting, while Section 4 will outline the problematic nature of those arguments.

Downsizing ministry staff and starving the ministries of needed funding represents a shift to self-regulation for many agencies and industries operating in BC.

3. The Arguments Usually Given for Environmental Tax Shifting

AN OFT REPEATED ECONOMIC PRINCIPLE IS THAT A HIGHER PRICE for a good or service leads to lower demand. Thus, a tax that increases a good's price will lead to lower consumption. Proponents of tax shifting use this principle to argue that as a society we tax the wrong things. Instead of taxing things we want less of—"bads" like pollution, waste, and resource degradation—we tax things we want more of—"goods" like income, investment, and jobs. The argument follows that we should shift taxation from societal "goods" to environmental "bads".

3.1 Environmental taxes

Economic theory states that when the price of a product or activity does not fully reflect environmental costs, the consumer is given an incentive to over-consume the good. The discrepancy between price and cost, often referred to as an externality (which causes a "distortion" in the market), comes about because either the environmental costs are externalized (not incorporated into the price of the goods and services) or public subsidies are given to the producer of the product such that the price of the good or service is held artificially low. Over-consumption of the good leads to an inefficient use of resources and may exacerbate the consumption of energy and resources, causing environmental degradation.⁹

The theory states that applying an environmental tax to the good (equal to the environmental externality) removes the inefficiency and results in a lower level of pollution.¹⁰ This is the case whether or not revenues from the tax are directly used to decrease pollution levels.

One of the most studied example of an environmental externality involves the personal automobile. Some have argued that because the price of driving a car does not include the economic, social, and envi-

ronmental costs of congestion, air pollution, and carbon dioxide emissions,¹¹ drivers use their cars more than they should, those costs are borne by society generally, and societal welfare decreases.¹² This can be resolved by increasing the cost of gasoline through a tax to cover social and environmental costs. For the U.S., one study has estimated that this would increase the cost of gasoline by \$1.60 per gallon (approximately CAN\$0.60/litre).¹³ Another way to make prices better reflect true costs is to remove energy subsidies, including subsidies to oil and gas producers. In Canada, this could, according to one estimate, decrease greenhouse gas emissions by 18% by 2050.¹⁴

The difficulty with internalizing environmental and social externalities is determining what these costs are in dollar figures. For example, what is the dollar cost of regional air pollution? One might be able to estimate the health care costs of treating respiratory illnesses, the cost of lost work time because of those illnesses, or the monetary damage to buildings and statues from acid precipitation, but it would likely be more difficult to determine the extent of lost tourism dollars because of a polluted airshed, or the cost of loss of enjoyment for people living in a city with "bad air". Where does the analysis end? It is unquestionably an inexact science to calculate all monetary costs.

However, everybody understands that on a fundamental level these costs exist. Attempting to calculate and internalize costs will do more to change consumer behavior than ignoring them because we cannot measure them with precision.¹⁵

3.2 Decreasing taxes on societal goods

Neoliberal economic theory, the dominant perspective in economics, describes taxes on labour, profits, and income as also creating “distortions” in the market. For example, conservative economists contend that payroll taxes lead to a decreased use of labour.¹⁶ This implies that decreasing payroll taxes will either increase employment, increase wages for those already working, or both.¹⁷ Similarly, some have argued that taxing corporate profits reduces capital investment and taxing income decreases the workforce’s willingness to work.

It follows that decreasing the taxes on these societal goods—employment, profits, income—reduces the “burden” these taxes place on the economy, leading to greater social welfare.¹⁸ In short, proponents of this theory claim that the economy will operate more efficiently.

3.3 Linking the two: the double dividend?

Most tax shift scenarios are revenue neutral. Revenue neutrality exists when all tax revenue collected through an environmental tax is returned to society through tax cuts elsewhere. By linking the two—implementing an environmental tax and using the revenue to decrease other taxes—advocates of tax shifting insist that a “double dividend” (less environmental damage combined with a stronger economy) will result.

Another rationale for building in revenue neutrality in any tax shift proposal is political rather than economic. Many environmental advocates of environmental tax shifting believe the North American public would resist new taxes even if most agreed with the environmental principle behind them. They warn policy makers about the public’s aversion to new taxes of any kind and urge them to use revenue neutrality to sell environmental taxation as “ecological tax reform”.¹⁹ Others write about “greasing the wheels” of environmental taxation with tax cut lubrication.²⁰

Because the price of driving a car does not include the economic, social, and environmental costs of congestion, air pollution, and carbon dioxide emissions, drivers use their cars more than they should, those costs are borne by society generally, and societal welfare decreases.

4. Reasons for Caution

There are several reasons to question the predicted outcome—the win-win situation—of tax shift proponents, and to be wary of some possible unintended results. The above arguments for tax shifting are premised on a number of false assumptions.

4.1 The existence of a double dividend?

Left to its own, the market has a way of delivering outcomes—poverty, homelessness, growing income inequality, polluted air and water systems—that do not lead to a just, healthy, and prosperous society.

The elegance of the double dividend theory is not necessarily realized in practice. First of all, the outcomes of different economic models using different assumptions vary considerably. Some economists have found that a double dividend exists while others refute this claim. After reviewing the literature, one economist describes the case for a double dividend as “shaky at best”.²¹

Second, economic models—like all models—are based on a stylized world that necessarily has to omit real world phenomena.²² Because markets are interrelated, implementing an environmental tax to address a distortion or decreasing distortionary taxes elsewhere does not always lead to expected outcomes in the real world. In short, it is not always possible to predict to what extent lower taxes would spur economic growth or how much environmental taxes would decrease consumption. More formal empirical results are required in most cases.²³

4.2 The social goals of taxation

Most people would agree that there are more important social goals for taxation than maximizing the theoretical efficiency of our economy. Left to its own, the market has a way of delivering outcomes—poverty, homelessness, growing income inequality, polluted air and water systems—that do not lead to a just, healthy, and prosperous society.

On the other hand, taxation can help to mitigate these societal ills. Tax revenues allow governments to provide universal access to social programs such as health care, education, and social assistance programs as well as infrastructure we all use, including highways, clean tap water, and sewer systems. A progressive income tax system redistributes wealth so that income inequality does not grow (or at least does not grow as fast as it would under a free market system). For this reason, it is misleading to think of income, capital, and payroll taxes as “bads” (as many tax shifters claim). These taxes are meeting important social goals.

4.3 Mitigation and compensation

Any government policy will impact different sectors of society in different ways. There will be winners and losers, for both firms and individuals. The goal of a sound policy package is not necessarily to avoid all negative impacts. On the contrary, the point of environmental policy is to urge a change in behavior in those who are having a negative environmental effect, sometimes by imposing higher costs upon their destructive behavior.

However, because of equity considerations, mitigation and/or compensation should be necessary components of any environmental tax scheme. Mitigation involves reducing the impact of the program, for example by excluding some firms or individuals. Compensation involves providing aid to those who are affected.

These measures are justified if environmental policies disproportionately affect one portion of society, especially when these are less fortunate members.²⁴ The possible impacts to be considered include:

- regressivity: compensation for lower income earners who are disproportionately affected;
- loss of jobs: transition programs for displaced workers and/or affected communities; and
- loss of competitiveness: mitigation measures for firms.

The current reality is that we live in a society where the gap between rich and poor is growing and the overall tax system is doing a less effective job (due to tax cuts) of mitigating growing income inequality. Thus, any tax shift proposal must take equity impacts into consideration, and include measures to ensure income inequality is reduced.

4.4 Regulation vs. taxation

Earlier, examples of environmental externalities that are difficult to measure were cited. In some cases, however, it is entirely inappropriate to attempt to measure environmental costs. Examples include the protection of endangered species²⁵ or cases where there is an acute health hazard, such as with highly toxic chemicals like DDT.²⁶ There are many more.

Unfortunately, tax shift schemes can be used by governments as poor substitutes for needed regulations. This occurred recently in BC, involving pulp mills and their use of beehive burners to incinerate wood waste. Because beehive burners release huge volumes of fine particulate matter—the federal government recently designated PM10 as

“toxic” under the *Canadian Environmental Protection Act*²⁷—the BC government required that all burners located near communities be shut down by 1997.²⁸ This was not an unreasonable decision, considering that beehive burners have been illegal in the U.S. for over 30 years due to the same health concerns.²⁹ Since then, the government has granted four extensions to the ban. In the March 2000 provincial budget, a tax shift policy was introduced, taxing fine particulates from beehive burners and using the revenue to encourage companies to invest in alternative technologies. Despite the health hazard posed by these burners, residents in 21 BC communities will continue to be exposed to high concentrations of fine particulate matter for up to four more years. In short, where there exists a clear health and safety issue, environmental tax shifting should not be considered as an acceptable substitute for regulation.

Some economists and policy makers have taken it on faith that economic instruments like tax shifting are inherently more efficient than command-and-control regulation for achieving environmental protection.³⁰ The implicit assumption is that markets “work”, and that the outcomes are consistent and predictable. Allegedly, all one needs to do is internalize externalities and the market will efficiently deliver the best outcome.

However, one recent review of the evidence concluded that regulation can be (and has been) more efficient than economic approaches.³¹ The best approach is situation-specific, dependent on the historical, technological, and institutional context.

In addition, contrary to statements from business leaders, a strong regulatory environment can also produce a more competitive international position. For example, industries that have been most heavily regulated in the U.S. due to their pollution-intensity (including paper and chemicals) have fared better in global competition than less regulated American industries.³² There is also little evidence that regulations have chased companies into “pollution havens”.³³ At least part of the reason is that adhering to environmental

Unfortunately, tax shift schemes can be used by governments as poor substitutes for needed regulations. This occurred recently in BC, involving pulp mills and their use of beehive burners to incinerate wood waste.

regulation ranks well behind other factors such as capital costs, labour, and taxation in investment decisions.³⁴

The point here is not that command-and-control regulations should be used in every case. Rather, it is important to assess each environmental problem individually and consider the full range of policy instruments to address each problem.³⁵ In some cases, using regulation and economic instruments in conjunction allows society to benefit from the advantages of both.³⁶ For example, an environmental tax on a polluting technology can reward industry for phasing out the technology before its legislated ban. Economic disincentives to pollute can also urge industry to not only meet but go beyond a regulatory threshold.

It is important to assess each environmental problem individually and consider the full range of policy instruments to address each problem. In some cases, using regulation and economic instruments in conjunction allows society to benefit from the advantages of both.

4.5 Why revenue neutral?

Proponents of tax shifting are often concerned with the real or perceived reluctance the public has for new taxes. They advocate revenue neutrality in order to make environmental taxation politically saleable. Obviously, political feasibility is a consideration when deciding which policies to implement. However, it is but one criterion to be considered. The role of public policy analysis is to determine what the impact of different policies will be and to choose one that best meets *all* pre-determined criteria.

Environmental tax shifting has become almost by definition a revenue neutral policy. Therefore, openly adopting a tax shift policy unnecessarily restricts the government's ability to choose between all policy alternatives, including ones that don't return environmental tax revenues through tax cuts elsewhere. For example, funding research and development of alternative technologies, increasing public transit infrastructure, implementing demand-side management programs, or increasing the budgets of environment ministries would all be exempt from a strict tax shift policy since the revenues are used for programs, not for delivering tax cuts. This is despite their potential to achieve environmental objectives at a lower cost.

For this reason, the economic instruments to be considered in this paper will be referred to as environmental or ecological taxes instead of the more restrictive term, tax shifts. It is a mistake to require that all ecological taxes be limited to strict revenue neutrality.

5. Criteria for Evaluating Ecological Tax Proposals

BEFORE ANY ECOLOGICAL TAX is implemented, it should be tested against a clear set of criteria. We would propose the following:

5.1 Ecological benefit

This is clearly the most important consideration when evaluating policies to solve an environmental problem. There are two approaches to including this criterion. The first would be to consider only policies that would attain the same ecological target, and evaluate these based on the other criteria. For example, one study evaluated different options that would all lead to a 12.5% reduction in carbon dioxide emissions based on each option's impact on employment, economic growth, and other indicators.³⁷ The other approach would be to evaluate the *extent* to which the various policies will meet an environmental objective.

5.2 Equity

Equity has three components, as outlined earlier. The first is the distributional impact of a given policy on different income groups or regions. To restate the point made above: No ecological tax should be constructed in such a way that inequality is worsened. The second is the impact on jobs, and the degree to which this impact is mitigated or compensated. Third, equity between firms and industries needs to be considered.

Proposals should not be designed to spell the end of polluting industries or to confer hardship on certain regions of the province, but rather to change BC's environmental regulations and taxes so that they reflect a more environmentally sustainable vision of the

future.³⁸ Focusing on worker, community, and industry transition will be the key.

5.3 Ease of administration

It is important to consider the implementation and administration costs of an environmental tax program, since they may be so high that they exceed its benefits.³⁹ This would raise serious questions concerning the efficiency of such a program and its potential to reach its environmental objectives.

5.4 Political feasibility

Political feasibility must be considered, if merely for pragmatic reasons. An environmental tax policy is unlikely to be implemented if there exists widespread public disfavour for the policy or a predictably strong and active resistance from those who will "lose", especially if they are well organized and have many resources.⁴⁰

5.5 Comparison with other policy instruments/regulations

Can the above criteria be better met with regulations or with a different mix of regulations and economic instruments? If so, then the obvious solution would be to implement those.

An environmental tax policy is unlikely to be implemented if there exists widespread public disfavour for the policy or a predictably strong and active resistance from those who will "lose", especially if they are well organized and have many resources.

6. Ecological Tax Proposal

Test Case: A Carbon Tax

The burning of fossil fuels goes hand in hand with regional air pollution problems. Thus, reducing fossil fuel combustion will undoubtedly improve air quality in most places.

This section puts forward an ecological tax package for Canada in order to illustrate the use of the above criteria in assessing such a package. The objective of the ecological tax is to reduce greenhouse gas emissions in Canada, in order to meet the commitments made in the Kyoto Protocol. This would involve reducing greenhouse gas emissions by 6% from 1990 levels by 2008-2012. BC should be pressuring Canada to act upon its international commitments, which it has been reluctant to do so far.

If an ecological tax alone were to be used by the federal government to meet Kyoto, an equitable package would involve:

- *A carbon tax on all fuels produced in Canada—coal, natural gas, oil, propane, gasoline, and diesel—to be applied at the source (well-head or mine mouth).*

The tax would be proportional to the carbon content of the various fuels. It would be collected starting in January 2002 and would increase linearly until 2010. The level of taxation reached by 2010 in order to meet the Kyoto protocol would be approximately \$50 per tonne of carbon.⁴¹ This would increase prices by \$30 per tonne of coal, \$6.50 per barrel of oil, and \$0.80 per 1,000 cubic feet of gas.⁴²

- *A surtax on excess profits of Canadian-based energy-producing companies.*

Oil and gas companies are currently reaping record profits, while their customers face rising costs. This imbalance needs to be redressed.

- *The revenues from the above taxes should be split evenly between:*

i) funding for provincial transit budgets to expand and improve service.

ii) a decrease in the rate of the GST.

iii) a transition fund for workers displaced due to the energy taxes.

iv) energy efficiency tax credits: to be split between residential and small business retrofits and large industry purchases of energy-efficient technology.

In addition, the provincial government should commit to:

- *gradually increase funding for the MELP and the MoF to 1995/1996 unding levels.*

- *no further deregulation of energy markets and re-implementing demand-side management programs like Power Smart.*

Based on the criteria, the strengths and limitations of this proposal are outlined below.

6.1 Ecological benefit

It is impossible to determine with certainty the extent to which a carbon tax will reduce fossil fuel use. The \$50 per tonne figure used in this package is based on one study alone. Elasticities of demand (the degree to which demand for a product will change when its price changes) for fossil fuels are often expressed in ranges since they vary between jurisdictions due to many factors. It is important, therefore, that the scheduled increases in the carbon tax have some flexibility. Adjustments will likely have to be made to ensure that carbon emission targets are met.

That said, the ecological benefit of reducing carbon dioxide emissions are many. The implications of global climate change—sea level rise, increased weather-related disasters, and the loss of habitat for plant and animal life amongst others—are potentially disastrous. Though by no means certain, the potential for any of these events occurring requires us to act now to stabilize and decrease greenhouse gas emissions.

On a more regional level, the burning of fossil fuels goes hand in hand with regional air pollution problems.⁴³ Thus, reducing fossil fuel combustion will undoubtedly improve air quality in most places.

Finally, energy is the currency of our economic system. Any initiative that induces energy efficiency will compel industry to become more efficient overall and generally use fewer natural resources.⁴⁴

6.2 Equity

a) Regressivity

Carbon taxes, even when applied at the source, will eventually be largely paid for at the individual household level.⁴⁵ They have consistently been determined to be regressive (meaning carbon taxes hit lower income people harder), though the degree of regressivity does depend on the type of fuel and the jurisdiction under consideration.⁴⁶

However, using the funds to improve public transit would redress some of this regressivity, since low income households use public transportation more often than higher income households.⁴⁷ It would also improve the alternatives to car use for both the rich and poor alike. Furthermore, decreasing the rate of the GST, a highly regressive tax, will help low income Canadians the most. Cuts to income taxes—the most progressive tax we have—are in no way a reasonable substitute for decreases in the GST.

The excess tax on profits in the energy sector will dissuade Canadian companies from gouging customers. Companies and utilities that merely pass on high energy prices to their customers will not be affected by this.

It is also important to note that lower income groups disproportionately bear the health and welfare costs of many forms of pollution,⁴⁸ including air pollution.⁴⁹ Therefore, the poor would receive greater benefits from policies such as this one that improve regional air quality.

No ecological tax policy should be put into place without a meaningful and non-retractable transition program accompanying the new policy.

b) Loss of jobs

Implementing this tax proposal will more than likely result in a loss of jobs in certain sectors of the economy. In particular, workers in the energy sector and energy-intensive industries are vulnerable. Some economists predict high unemployment effects from carbon taxes while others feel that such predictions have often been exaggerated.⁵⁰ To cite some conservative results, a U.S.\$50 per tonne carbon tax was estimated to decrease employment by no more than 0.4% in any one industry group in the U.S.⁵¹ A Canadian study estimated that a \$20 per tonne charge on carbon would change employment by between -0.8% and +1.1%, depending on how the tax revenue was spent.⁵²

This program, however, will create jobs as well. Investment in energy efficiency—which this program encourages through tax credits to households and businesses—creates four times more jobs than the same investment in energy supply.⁵³ It is estimated that 530,000 person years of employment can be created if Canadians were able to save just 20% of their energy bills through efficiency and conservation.⁵⁴ Also, one must not forget the employment growth in “winner” industries—industries that are less energy-intensive, can develop and market alternative energy technologies, or can decrease their costs through energy efficiency improvements. A comprehensive climate change package with both carbon taxes and energy-efficiency and renewable energy policies will likely increase overall employment and the number of unionized workers.⁵⁵

These results, however, will do nothing to console the coal miners who lose their jobs due to these policy changes. Canada (and BC particularly) has many single-industry towns that will be affected by a carbon tax. The relatively low job loss figures belie the much greater impact to certain regions of the country that rely on coal mining, oil and gas drilling, and potentially other energy-intensive industries. It is important to compensate those who *are* sacrificed for the common good. According to the U.S. study cited earlier, a transition assistance package of \$100,000 per worker would cost less than 1% of the revenues generated from a \$50 per tonne carbon tax.⁵⁶

A fair transition program of course requires more than simply throwing money at displaced workers. Important elements include protection of income, re-training programs, preferential hiring for displaced workers, and “bridging” programs for older workers close to retirement. Community support programs also need to be considered, including economic diversification projects and the development of alternative industries.⁵⁷

In the past, “just transition” programs have been promised to counteract public opposition to a new plan (e.g. the free trade agreement with the U.S.) and then failed to materialize. No ecological tax policy should be put into place without a meaningful and non-retractable transition program accompanying the new policy.

c) Competitiveness

There will almost certainly be opposition to such a policy package on the basis of international competitiveness. However, there are reasons to believe this is not a concern. First, only energy-intensive industries should feel the effect of a carbon tax, even if the revenue is not used to reduce other costs through tax credits for environmental efficiency purchases.⁵⁸ Furthermore, the impact on competitiveness can be attenuated and even avoided if taxes are announced in advance, implemented in consultation with affected parties, and gradually increased.⁵⁹ Comparing the estimated \$6.50 per barrel rise in the price of oil over an eight year period with the more than \$20 per barrel rise in the price of oil over the last two years (likely more of a price “spike” than a permanent increase) puts the tax into perspective.

In any case, there are strong reasons to believe that a gradual change in business conditions stimulating higher efficiency in the use of scarce natural resources would be a relief, not a burden, to the economy.⁶⁰ Michael Porter, a Harvard Business School professor, has likened environmental taxes, including energy taxes, to the emergence of rival firms: existing companies may not like them but they create investment and innovation. The result is firms that are more competitive and produce less pollution, higher quality products and greater employment, all at lower costs.⁶¹

This is certainly the case for larger economic regions. For example, a look at the four major economic blocks—the U.S., western Europe, Japan, and the

Soviet Union—during the period from 1975 to 1990 shows that economic performance increased with energy prices.⁶² This is not to suggest that high energy prices created economic prosperity, but at the very least that high energy prices did not create a competitive *disadvantage*.

6.3 Ease of administration

From an administrative and enforcement perspective, an “upstream” tax—one levied at the mine mouth for coal, the well-head for oil and natural gas, and the point of entry into the country for imported fuels—is the easiest to implement.⁶³ A tax at the “downstream” level would be more cumbersome, since it would involve monitoring emissions of carbon dioxide from virtually every house, business, and vehicle in the country. On the other hand, only 700 companies produce or import fossil fuels in all of Canada, so the collection points would be far fewer.⁶⁴

However, the difficulty arises when using tax revenues from an unstable tax base. Without knowing in advance what the tax revenues will be—the decline in fossil fuel use is impossible to predict with precision—it would be difficult for a federal government to commit funds to the four programs recommended above (transit, GST decrease, just transition, energy efficiency tax credits). The programs would require continuous funding readjustments, not a recipe for efficiently-operated programs. There is also the possibility of Canadians reacting very well to the energy taxes by precipitously decreasing their fossil fuel use, and thus eroding tax revenues earmarked for those programs. For this reason, the carbon tax should not be constrained by revenue neutrality. These four programs must be funded regardless of revenues generated from a carbon tax.

6.4 Political feasibility

Given the present hysteria in Canada, the U.S., and Europe over record high gasoline prices, public opposition is potentially the largest impediment to the application of a carbon tax. There exists nonetheless opportunities for a government to implement an energy tax package without paying a high political price.

A recent poll of British Columbians, conducted by Viewpoints Research Ltd., showed that there is widespread support for using the tax system to meet environmental goals.⁶⁵ Also, environmental taxes are more likely to earn public support than other taxes, especially if they are linked to perceptible environmental problems⁶⁶ and transparently used to fund programs to address those problems.⁶⁷ This is why it would be important to use improved air quality as a rationale for a carbon tax, and stress the risks—climate change and others—of not acting. The social benefits of the program, including expanded public transit and the decrease in the GST, must also be highlighted.

The impact on competitiveness can be attenuated and even avoided if taxes are announced in advance, implemented in consultation with affected parties, and gradually increased.

6.5 Comparison with other policy mechanisms

It would be possible to reduce carbon dioxide emissions through regulatory mechanisms alone. In order to address all the major sectors—motor vehicles, other transportation, agricultural, residential, fossil fuel industries, other industrial—an extensive set of regulations would need to be put into place. Using the above criteria, various regulatory packages—including some that combine economic and regulatory instruments—must be compared to the carbon tax package. More than likely, a variety of instruments implemented in conjunction will be more effective than using one instrument alone.

7. Other Ecological Tax Possibilities

THERE ARE OTHER POSSIBLE ECOLOGICAL TAXES that should be implemented, or at least considered, to meet various environmental objectives. Some of the following are strict tax shifts (i.e. are revenue neutral) while others are not. Most of these can be implemented at the provincial level.

- vehicle feebate: This would involve an extra fee applied to vehicles with the worst fuel efficiency (e.g. SUVs), with the money used as a rebate towards the purchase of vehicles with high fuel efficiency.
- sulfur tax: A tax on sulfur would encourage petroleum producers to go beyond the threshold regulations for sulfur content in gas and encourage drivers to buy low-sulfur gasoline.
- increased cost of fish farm permits: Increased waste management permit fees for open pen fish farms—combined with a future ban—would help speed the industry towards closed containment farms.
- chlorine tax for pulp mills: By implementing a sales tax on ClO_2 —there is now none—and using the funds to give tax credits for capital investment in oxygen-based bleaching, the industry would be urged to move towards cleaner technology.
- parking/transit shift: The University of Victoria has recently increased parking fees on campus and used the revenue to subsidize transit passes. This can be implemented at the municipal level and/or for provincial government employees.
- consumer level tax shifts: There are many examples of tax shifts that would increase the costs of more environmentally destructive products (by increasing their sales tax) and make environmentally friendly products more competitive (by eliminating sales tax or subsidizing their cost). Some include:
 - a) paper products made with virgin fibre vs. post-consumer recycled fibre.
 - b) highly-toxic cleaning products vs. vinegar/borax/baking soda based cleaners.
 - c) “conventional” food vs. organic food.
 - d) chemical fertilizers and pesticides vs. alternative products.
 - e) incandescent light bulbs vs. energy-efficient fluorescent bulbs.
 - f) a tax on packaging to discourage highly-packaged products.

8. Conclusion

THE CONTEXT WITHIN WHICH ENVIRONMENTAL TAX SHIFTING IS BEING CONSIDERED cannot be ignored. Cuts to MELP and MoF undermine their staffs' ability to monitor and enforce the regulations we already have in place. There are also threats to the regulations themselves. The corporate lobby has managed to gain regulatory concessions from the BC government, especially in the forestry and mining sectors. Continued energy deregulation has eliminated the one policy—demand-side management in energy—that was actually leading to reduced energy consumption. Governments *must* resist the temptation to use environmental tax shifting as a possibly cheaper, yet potentially less effective, form of regulation in the face of tight fiscal constraints.

Trade liberalization is also undermining our governments' ability to enact and enforce regulations. For example, the Canadian government had to roll back a ban on a gasoline additive, MMT, that is a known neurotoxin. The manufacturer of MMT was able to bring a lawsuit against the Canadian government only because of our participation in the North American Free Trade Agreement.

Notwithstanding the strength of regulation, however, there are areas that would be well served by environmental taxes. Making individuals and companies pay the real price of their activities has the potential of decreasing their environmental impact. There are, however, important considerations that must be taken into account when evaluating the solutions to any ecological problem.

First, a complete and appropriate evaluation of all the alternatives is required before any far-reaching decisions are made. It must be demonstrated that an ecological tax makes more sense than regulation. In some cases, a mix of policy mechanisms may be most

appropriate. Second, this policy brief has proposed a helpful set of criteria for evaluating ecological policy options:

- Ecological benefit
- Equity
 - distributional impact
 - impact on jobs
 - impact on competitiveness
- Ease of administration
- Political feasibility

The third and final consideration follows from the second. Environmental taxation, if and when implemented, must be accompanied by measures to redress expected outcomes that are inconsistent with a fair and equitable society. Regressivity, loss of jobs and, yes, loss of competitiveness for domestic firms, must all be addressed in order to produce widespread support for the new initiatives, but also—and more importantly—to make sure nobody is left behind as our society strives towards a more sustainable future.

Governments must resist the temptation to use environmental tax shifting as a possibly cheaper, yet potentially less effective, form of regulation in the face of tight fiscal constraints.

Endnotes

- ¹BCGEU, 2000, p. 2
- ²Full-time equivalents are the number of employees based on a normal work schedule.
- ³Tom Burgess: Wildlife biologist, MELP. Telephone conversation March 2, 2000.
- ⁴BCGEU, 1999, p.1
- ⁵BCGEU, 2000, p. 7
- ⁶Perrin, p.3
- ⁷Muldoon
- ⁸COSEWIC
- ⁹Taylor et al.
- ¹⁰Bernow et al., p.5
- ¹¹Hammond et al., p.27
- ¹²Durning and Bauman, p.47
- ¹³Cobb
- ¹⁴de Moor and Calamai
- ¹⁵Bernow et al., p.20
- ¹⁶According to this theory, payroll taxes discourage job creation, and lead the economic system to substitute other units of production (e.g. capital) for labour.
- ¹⁷Kesselman, p. 13
- ¹⁸Dower and Repetto, p.167
- ¹⁹von Weizsacker and Jesinghaus, p.65
- ²⁰Hammond, p.35
- ²¹Oates, p. 918
- ²²Bernow et al., p.5
- ²³McKittrick, p. 419
- ²⁴OECD, 1994, p.101
- ²⁵von Weizsacker and Jesinghaus, p.66
- ²⁶Taylor et al., p. 26
- ²⁷PM10 are all particulates that are less than 10 microns in diameter.
- ²⁸Sierra Legal, 2000
- ²⁹Sierra Legal, 1998, p. 7
- ³⁰See for example Stewart
- ³¹Cole and Grossman
- ³²Repetto
- ³³Roodman, p.27
- ³⁴St-Pierre, p.96
- ³⁵Barde, p. 28
- ³⁶Mundle et al., p.2
- ³⁷McKittrick
- ³⁸Hammond, p.38
- ³⁹Taylor et al., p. 23
- ⁴⁰OECD, 1994, p.101
- ⁴¹calculated using McKittrick, p. 425
- ⁴²Hammond, p. 54
- ⁴³Hammond, p. 54
- ⁴⁴From a presentation by Christopher Flavin (Worldwatch Institute) at a Tax Shift conference: Vancouver, April 3, 2000.
- ⁴⁵OECD, 1995, p. 75
- ⁴⁶OECD, 1994, p. 92
- ⁴⁷von Weizsacker and Jesinghaus, p. 60
- ⁴⁸Dower and Repetto, p. 169
- ⁴⁹OECD, 1994, p. 87
- ⁵⁰Barrett and Hoerner, p. 1
- ⁵¹Barrett and Hoerner, p. 3
- ⁵²McKittrick, p. 425
- ⁵³Campbell et al.
- ⁵⁴Calculated from Fulton, p. 8
- ⁵⁵Barrett and Hoerner, p. 3
- ⁵⁶Barrett and Hoerner, p. 4
- ⁵⁷Canadian Labour Congress, p.17
- ⁵⁸Hoerner and Muller
- ⁵⁹Barde, p. 26
- ⁶⁰von Weizsacker and Jesinghaus, p. 72
- ⁶¹Porter
- ⁶²von Weizsacker and Jesinghaus, p. 72
- ⁶³Ottinger and Moore, p. 111
- ⁶⁴From a presentation given by Chris Rolfe (West Coast Environmental Law) at a Tax Shift conference: Vancouver, April 3, 2000.
- ⁶⁵Northwest Environment Watch-BC
- ⁶⁶Taylor et al., p. 25
- ⁶⁷Convery and Rooney, p. 35

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