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YORK CENTRE FOR APPLIED SUSTAINABILITY

Greening the Federal Budget

A background paper prepared for participants at a one-day workshop convened by the National Round Table on Environment and Economy Task Force on Economic Instruments, October 23, 1997

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1. Introduction

1.1 Background and Purpose of this discussion paper

After many years of steady movement toward an expanded role for government in environmental regulation, the direction began to shift recently. Under the influence of ideas favoring a reduction or abandonment of "the old command and control system"; and in response to huge debts and deficits that made downsizing a key component of this new political agenda[1]; decision-makers in both the public and private sectors have increasingly explored alternatives to regulation, including voluntary agreements, codes of conduct, Memoranda of Understanding, and economic instruments.

These developments have evoked responses ranging from celebration to condemnation. Supporters contend that non-regulatory approaches encourage businesses to go "beyond compliance"; are more efficient and flexible; and lead to research and innovation to find better production methods based on leading edge technology. [2] Though critics reject these arguments, and raise concerns about the possible dangers of substituting new approaches for regulation, thorough consideration of these alternatives is high on the agenda of decision-makers in most parts of the globe. In Canada, the National Round Table on Environment and Economy (NRTEE) has played a leading role in exploring the application of these instruments, and has recently established a Task Force to carry on this work, with special attention paid to what has been called "greening the budget."

The budget recommendations made to date by the NRTEE Task Force on Economic Instruments constitute a series of very specific recommendations. As set out in the letter of invitation, the purpose of the October 23 workshop is to generate discussion which will assist in developing a broader context for future work on the topic of green budgets. The Task Force seeks to find a middle ground between the more narrowly focused, incremental budget measures recommended to date and the wholesale revamping of government budgeting represented by the concept of "ecological taxation."[3] Accordingly, Workshop discussions will emphasize measures which can be taken in the "middle-term" - the 1999-2000 budget

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[1] These ideas have been labeled "neoconservative", but over the past decade they have informed the agenda of parties and governments from many parts of the political spectrum.
[2] See for example Mike Kelly, "Market Correction: Economic Incentives for Sustainable Development." NRTEE, November 1992. Similar points are made in a very recent OECD publication, Evaluating Economic Instruments for Environmental Policy (1997). Claims about the advantages of economic instruments are typically qualified by the phrase "in principle" or "in theory" because as the OECD reports, "few formal evaluations of economic instruments have been conducted in member countries." (p. 10) We will revisit this point in the Conclusion.
[3] See William E. Rees, "More Jobs, Less Damage: A Framework for Sustainability, Growth and Employment," and Rees, "Taxing Combustion and Rehabilitating Forests: Achieving Sustainability, Growth and Employment through Energy Policy," both in Alternatives, vol. 21, no. 4, Oct./Nov., 1995. The definition of ecological taxation used in this paper appears below.

(which would have to be recommended by the Task Force approximately one year from now) and one or two budgets after that. [4]

This middle-term focus requires that the Task Force do two things over the coming year - consider general principles which should inform budget greening; and then recommend specific budget actions which flow from those principles. Since the specifics are dependent upon the general principles, this paper, written at the beginning of this process, is primarily concerned only with the latter. Specific budget measures at the level of detail of the 1995 recommendation of the Task Force that Capital Gains Tax be removed for a particular period from donations of ecologically sensitive land are beyond the purview of this discussion.

This paper provides background information which sets budget greening within the context of the historical development of environmental policy and the sustainable development dialogue. It then discusses ways in which criteria can be developed to decide which budget instruments should be applied to which policy fields. After setting out (in a matrix) a variety of possible budget initiatives in 4 selected policy fields, we propose a methodology for choosing from among the many options those that appear to be most feasible in the medium term. We are looking for the "low hanging fruit" on the tree of green budgeting – those measures which appear to be most feasible and potentially effective in the middle term. What is proposed is a "rational" method of policy development. We recognize, however, that in a representative democracy political influences will very properly temper any such approach.[5]

1.2 Work to date of the NRTEE Economic Instruments Task Force

NRTEE's work on green budget reform and economic instruments goes back to the beginning of the decade when it published Working Papers on various aspects of the topic. (See Kelly, 1992; Clement, 199_; and Cassils, 199_). Several NRTEE members served on the Task Force on Economic Instruments and Disincentives to Sound Environmental Practices. This multistakeholder Task Force was established in the February 1994 federal budget , but had only part-time volunteer members and a very short reporting

[4] The "short-term" is defined as measures for this coming budget (1997-98). This year the short-term NRTEE focus is on measures related to private woodlots, urban brownfields, and endangered species on private lands. These topics are not the subject of this discussion. The "long-term," of course, refers to time after approximately 2005.

[5] "In all their decisions ministers need to weigh up costs and benefits. Ultimately their choices depend upon their political judgements, but these should be supported by as much detailed analysis as possible." U.K. Department of the Environment, Policy Appraisal and the Environment (London: HMSO, 1991), p. 19.

date. When it ended, the NRTEE members requested that a Task Force under the NRTEE be given a similar mandate to further the work begun in 1994.

In 1995, NRTEE held a workshop to advise the Minister of Finance "on reform of energy taxation and subsidies". Several of the resulting recommendations were adopted in the 1996 budget. That same year in May, NRTEE established the Task Force on Economic Instruments "to promote and advance the use of market-based approaches for environmental improvement in Canada." This Task Force was to work in two "streams". Stream 1 involved continuing the practice of convening annual multistakeholder workshops on Greening the Budget. Stream 2 would involve "working with strategic partners to achieve concrete progress in implementing market-based approaches, going beyond the near-term tax policy changes." (The current Workshop is a Stream 2 activity.)

The outcome of the 1996 Stream 1 workshop was a further set of recommendations to the Minister of Finance to provide tax incentives to promote energy efficiency and tax exemptions for certain contributions to Environmental Restoration Trusts.[6] This workshop also recommended setting up a joint NRTEE/Finance Working Group to consider further tax system reform.

The 1997 Stream 1 workshop will consider specific proposals for tax incentives addressed to brownfields development, endangered species on private lands, and woodlots while the Stream 2 workshop considers the approach outlined in this paper to a more general, mid-term green budgeting exercise.

NRTEE has yet to clarify the relationship between the current Task Force and a new NRTEE Task Force on Climate Change which will come into existence in early 1998, and will inevitably consider economic instruments such as energy pricing and tradeable emissions permits as part of its work.

1.3 Definitions

To avoid confusion during the workshop discussion, primary terms are defined below. It is recognized that there is no one commonly accepted definition for many of these terms, especially "sustainable development." The definition used here leads to an emphasis upon resource conservation and waste and pollution policy fields. Another definition would lead the decision-making process concerning budget greening in a different direction, but the process outlined below for deciding on specific budget-related measures could still be successfully used.

The most important distinction to bear in mind for purposes of the workshop discussion is that between the related but distinct concepts of "economic instruments," "ecological taxation," and "budget greening."

Sustainable development: "meeting the needs of present generations without compromising ability of future generations to meet their needs" (the Brundtland definition) essentially involves *conserving (and where possible enhancing) three forms of capital: (1) economic/manufactured; (2) human/cultural, (3) natural*; and learning with respect to each of these to "live off the interest". [7] While recognizing that ultimately the sustainability of all three types of capital is inter-related, for the purposes of this "mid-term" budget greening exercise we have placed major emphasis on sustaining natural capital, which is done by *decoupling increases in material living conditions from increased throughput of energy and materials.*

Budget process: decision making concerning a government's revenues and expenditures for the coming year. (This term does not refer to implementation of those decisions.) The terms "revenue budget" and "expenditure budget" are commonly used to distinguish the two aspects of the process.

Program expenditure: any expenditure by a federal department, including its own staffing and administrative costs, cost of providing goods, services or information.

Tax expenditure: any reduction or deferral of any tax owed to the federal government.

Emission charge: any mandatory payment to the federal government which is related to the use of nature as a sink for the disposal of waste or pollution. An example might include a federal tax on each tonne of hazardous or solid waste sent to disposal. For purposes of administrative simplicity, such payments might be required as a licensing fee payable to the regulatory department which is most often a provincial environment department. Such a provincial emission charge is beyond the scope of this discussion. There is no juridical or constitutional reason, however, that emission charges could not be imposed by the federal government.

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[6] See "Greening the Budget Program History". NRTEE (n.d.)

[7] Cf. Pearce's definition: "The achievement of sustainable development requires 'constant capital stocks' where 'constant' must be construed to mean constant or increasing. Weak sustainability demands that the overall stock of capital be 'constant', with no special regard being paid to environmental capital. Strong sustainability requires that both the overall stock and the natural stock be 'constant'." David Pearce, Blueprint 3: Measuring Sustainable Development (1993) p. 27

Product tax: any tax which is related to the design of a product and is to be paid by either the manufacturer or purchaser of the product. (This category combines the concepts of a manufacturers' and sales tax.) An example might include a tax on disposable cameras, intended to provide an incentive to manufacture and purchase fewer of them in comparison to non-disposable cameras.

A "product" is distinguished from a "resource" by virtue of having been processed to some degree. Those cutting down trees in the forest pay a provincial stumpage fee, but would not pay a wood product tax, as defined here, until the tree had been processed into lumber to be used as an input in the manufacturing process.

Other taxes and charges: all other mandatory payments to the federal government. Examples include customs duties and all forms of licensing or user fees. It should be noted that these categories do not include any form of "resource tax," defined as payments made to the state in exchange for the right to extract from nature materials such as fossil fuels, fish, metals or wood. Since resource taxation is a primarily provincial jurisdiction it is excluded from this discussion.

The factor common to all five budget categories is the intent to provide either a positive or negative financial incentive to behaviour change. In this respect each of them constitutes a type of economic instrument.

economic instruments: "Economic instruments can be defined as *instruments that affect costs and benefits of alternative actions open to economic agents, with the effect of influencing behaviour in a way that is favourable to the environment.*"[8] The OECD identifies four types of economic instruments: charges/taxes, subsidies, tradeable emission permits, and deposit-refund systems. The first two types are clearly budget-related and are highlighted in this paper.

ecological taxation: taxation intended to achieve both the purpose of generating revenue and changing behaviour. Increasingly this term is being used to refer to a *systematic (as opposed to piecemeal) shift in the entire tax structure "away from income, VAT and payroll taxes and towards consumption taxes, including environmental taxes."*[9]

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[8] This definition is taken from Environmental Policy: How to Apply Economic Instruments, OECD, Paris 1991, p. 10. The typology appears now to be standard for OECD. It is outlined in the two most recent publications, Evaluating Instruments for Environmental Policy, and in Sustainable Development: OECD Approaches for the 21st Century, both published in 1997.

[9] Francois Bregha et al, "Ecological Fiscal Reform: A Review of the Issues". Final Report of Resource Futures International to NRTEE, November 1995. Note that the term environmental

green budgeting: this is perhaps the loosest term of all. It has had a variety of meanings, even in the Canadian context. At the time of the Green Plan, it was associated with the idea of requiring an environmental assessment of all major budget measures, and thus focused entirely on process. Subsequently, it has referred to substantive actions such as the use of economic instruments or the removal of subsidies to environmentally unfriendly products or activities. For our purposes, we can define it as a *form of budgeting comprised of revenue generation and public expenditure based on maintaining or enhancing the level of natural capital, with taxes and subsidies designed to encourage income and savings, and discourage consumption and waste.*

sustainable development friendly budget: a budget comprised of measures which provide an incentive for behaviour *change in the direction of sustainable development*, as defined above. (Note that a fuller definition of sustainable development that encompassed all 3 forms of capital would considerably broaden our discussion.) [10]

2. Sustainable development and the budget process

The purpose of this section is to describe the way in which government budgeting is coming to be seen as another policy instrument which can be used to assist in making the transition to sustainability. The section also reviews progress to date, both in Canada and other jurisdictions, in putting this new conceptualization into practice.

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tax is itself rather complicated. According to "Environmental Taxes and Green Tax Reform", (OECD, Paris, 1997) "There is no universally-agreed definition of what constitutes an environmental tax..." (p. 17) Focus varies between the explicit and implicit reasons for implementing the tax and the actual environmental effects of the tax. "A report prepared by EUROSTAT uses the following definition: "A tax falls into the category of environmental if the tax is a physical unit (or a proxy for it) of something that has a proven specific negative impact on the environment, when used or released". By this definition, eco-taxes could be defined as those charges or taxes designed with a specific environmental objective in mind, and could fall under the larger umbrella of environmental taxes, which would then also include those taxes which were not specifically designed with an environmental objective in mind, but have ended up supporting an environmental objective in the end.

[10] According to a number of scholars and practitioners, the next phase of development will involve shifting form green or ecological fiscal reform to the broader agenda of budgeting for sustainability. See for example the forthcoming work by David Pearce (Blueprint 4.) Presumably this broader agenda will need to be addressed in the forthcoming Sustainable Development Strategy of the federal Department of Finance.

2.1 The budget as policy instrument

Arguably the most reliable indicators of governmental policy commitments and public policy priorities are budget expenditures. Politics and government are saturated with words and statements. Indeed, some scholars claim that "politics is talk". Language helps shape the way social problems are seen and understood, or in more current terminology, political discourse affects the construction of political reality. But in the final analysis, whatever governments say, the budget reveals in a fundamentally important way what they are actually doing.

The implications of this fact were brought forcefully to the attention of the Standing Committee on Environment and Sustainable Development in the course of their discussion of a "Sustainable Budget." They chose as the headnote to their report, "Keeping A Promise: Toward a Sustainable Budget", the following quote: "The federal budget and the overall framework of federal tax incentives is the strongest statement of a government's priorities and direction. But the overpowering signals these now send point away from an environmentally sustainable future."[11] The Committee went on to identify two key factors which in their opinion are hampering the "transition to a sustainable economy in Canada". One is that "the costs of environmental pollution and resource depletion are not reflected in the prices that Canadians pay for products." The other is that "market prices in Canada (and in other countries) are pushed even lower by a variety of government subsidies and other measures." (p. 2) This pattern continues despite stated commitments to support sustainable development as outlined in the "Guide to Green Government" and in the legislation establishing the Commissioner for the Environment and Sustainable Development.

It follows that major policy reforms of the kind required to ensure that governments support sustainable development will necessitate significant changes in the budget. The term "green budget reform" captures (in part) this thrust and provides a vantage point from which to critically assess existing and proposed budget initiatives. A new scholarly journal [Robert Gale, ed., Environmental Taxation and Accounting] was recently established to provide a forum for analysis and discussion of this new approach to budgeting. Still in its infancy, the idea of green budgeting emerged in the transition to a "new economy" during which governments have reexamined the very roots of governmental involvement in the economy in response to both new ideas and tough economic realities of large and growing debts and deficits.

After years of ascendancy, ideas favouring the shrinkage of government are now being called into question at the same time as deficits are turning into surpluses. We are again in transition, and this entails both challenges and opportunities. In looking ahead to the unfolding of public policy in the early

part of the twenty-first century, it is worth outlining the range of policy instruments available to governments.

Policy instruments available to governments can be classified in many ways. A current public policy introductory text divides them into "voluntary," "mixed," and "compulsory," and then provides sub-categories as follows.[12]

Voluntary instruments

. reliance on family and community action to meet policy objectives

. reliance on voluntary organizations to meet policy objectives

. reliance on private markets to meet policy objectives

Mixed instruments

. information and exhortation

. subsidies

. auction of property rights

. tax and user charges

Compulsory instruments

. regulation

. public enterprises

. direct provision

Most taxonomies rely on some version of this spectrum of voluntary to compulsory action. The "Guide to Green Government" (pp. 14 - 15) offers a simpler classification which divides them as follows:

. voluntary approaches

. information and awareness tools

. economic instruments

. direct government expenditure

. command and control

Budget instruments include the third and fourth categories in this list of instruments. Analysis of government budgets usually makes a distinction between the expenditure budget and the revenue budget

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[11] Stephanie Cairns, "Green Advice for the Federal Government", Environment Network News, January/February 1995, p.21. (Quoted on p.1)

and between the three phases of the budget process - preparation, adoption and execution.[13] This paper is concerned with both expenditure and revenue, but only with the preparation phase. Although the ultimate test of the efficacy of a green budget is the associated behaviour change on the part of both state and societal actors in the direction of sustainability, the process of implementing budget decisions is not directly considered here.

2.2 Budget Greening to date in Canada

How have these various policy measures been applied to the natural environment in Canada? Policy intended to conserve natural resources and reduce waste and pollution has traditionally relied on exhortation; public spending on such things as sewage waste infrastructure; and command regulation, based on law. Economic instruments such as taxes, user-fees and deposit-refund systems have also been used to at least some extent. The intent has been to change behaviour more than to generate revenue to support the activities of government and for the most part they have been administered by provincial environment departments [need to check/clarify] separate from the provincial budgeting process.[14] Economic instruments have always been seen to include tax measures, but taxation of natural resource extraction has been excluded from the definition. The 1992 Economic Instruments Discussion Paper, for instance, "does not address the issue of appropriate pricing of natural resources, or the related issue of appropriate pricing of electricity."[15] Tradeable permit systems have also been traditionally seen as unrelated to the budget process. The budget was not a central concern of the environmental economic instrument dialogue, as it developed during the late 1980s and early 1990s.

Although the term economic instruments has generally excluded resource pricing, the concept has been included under the rubric of "full cost pricing," which has been discussed or applied in several areas including water pricing. There the argument is made that the charge paid to municipalities supplying water to residential or industrial consumers should at least cover the capital and operating costs of the good supplied. The concept does not depend upon valuation of the resource but instead, like any user fee, sees the charge as simply being sufficient to cover associated costs.[16] The idea of full cost pricing has also been discussed in relation to energy (involving such issues as the cost of decommissioning nuclear generating stations, or accounting for air pollution associated with thermal generation); and also

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[12] Michael Howlett and M. Ramesh, Studying Public Policy: Policy Cycles and Policy Subsystems (Toronto: Oxford University Press, 1995), p. 82.
[13] See Chapter 26, The Budgetary Process, in Kenneth Kernaghan and David Siegel, Public Administration in Canada (Scarborough: Nelson, second edition, 1991), pp. 563-610.
[14] Exceptions include the "gas guzzler" and "beer-can levy" fiscal instruments implemented by the Ontario government; give cite
[15] Canada, Economic Instruments, p. 2.

to transportation (where cost comparisons between travel in Single Occupancy Vehicles [SOV's] and various forms of public transit attempt to factor in such indirect costs as air pollution, congestion, and road construction and maintenance.)[17]

Although Canada has not taken as many steps to green the federal budget as some of the jurisdictions reviewed in the next section, significant progress has been made. As discussed, by the early 1990s the focus upon economic instruments which might be used by environment departments had broadened to a concern for structural incentives to unsustainability built into the economy by federal and provincial budgets. During the past century, Canadian economic development has been grounded in various forms of state assistance to the resource extraction industries. Beginning with the writings of Harold Innis in the 1930s, this has led to an ongoing dialogue amongst Canadian academics and policy makers respecting the implications of this reliance upon staple export. Sustainability added a new perspective to that discussion by drawing attention to the problem of inappropriate economic signals sent by governments as they pursue our basic industrial strategy of resource extraction, followed by at least some minimal degree of processing, and then global sale.

By the time of the 1993 election, this awareness had increased to the point of inclusion in a party platform. The Liberal Red Book promised a "comprehensive baseline study of federal taxes, grants, and subsidies, in order to identify barriers and disincentives to sound environmental practices." (cite) The newly elected Chretien government announced in the February, 1994 budget that this promise would be addressed through creation of the Task Force on Economic Instruments and Disincentives to Sound Environmental Practices. The *terms of reference* for the Task Force, announced by the Environment and Finance Ministers in July, 1994, required it to report by November of that year on specific measures for the 1995 budget and to advice in more general terms on longer-term issues:

Based on considerations including the polluter pays principle, competitiveness, sectoral and regional impacts, environmental effectiveness, practical feasibility and any other considerations the task force deems appropriate:

> . identify workable options for implementation of one or more market-based instruments for the achievement of established environmental goals, for possible consideration in consultations leading up to the 1995 budget where appropriate; and

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[16] For a discussion of one method of setting water charges, see Peat Marwick and Partners, Design Factors and Data Requirements for Water Withdrawal Pricing and Effluent Charges, report prepared for the Ontario Ministry of the Environment, April, 1988.

[17] On the latter point see the research report on full cost accounting published by the Ontario Transportation Collaborative. [give reference]

. identify areas where market-based instruments could be developed and implemented over a longer time frame, and propose steps that could be taken to advance the development of instruments in these areas. (Task Force Report, p. 44)

The Task Force consisted of thirty-two volunteers, representing the relevant sectors, and functioned with very limited financial and staffing resources. It was unable to carry out any sort of baseline study but, given these constraints, did a good job of presenting both the basic issue and advancing a number of specific recommendations and options (the latter were issues on which consensus could not be reached). The Task Force did recommend a method for carrying out a baseline study, discussed in section 4, below. A listing of the Task Force recommendations and options is as follows:

Energy

. no penalty RRSP withdrawals to $5,000 for residential retrofit
. tax and expenditure measures to provide a level playing between renewable energy sources and fossil fuels
. extend flow through shares to renewable energy to promote investment
. reduce spending on nuclear industry

Transport

. income tax reductions for transit passes given by employers to employees
. increase federal gas tax by two cents litre and dedicate the revenues
. federal sales tax on gas guzzler vehicles

Gov. operations

. various procurement measures
. eliminate subsidized parking

Agriculture

. spending on various forms of farming transition to sustainability

Conservation

. exempt donations of ecologically sensitive land from capital gains tax

Other

. reduce custom duties on imported pollution control equipment
. level tax playing field virgin and recycled materials

As discussed above, the NRTEE Task Force on Economic Instruments was established to further the work of the 1994 Task Force. This work was also furthered in 1995 by the Standing Committee on Environment and Sustainable Development, chaired by MP Charles Caccia. After holding public hearings

in December, of that year, the Committee issued its report, titled Keeping a Promise: Towards a Sustainable Budget. The Committee also suggested a method for doing a baseline study, discussed below, and advanced specific recommendations. A list of those follows:

Energy

. end support for commercial nuclear industry, transfer that spending to renewable energy
. end subsidies to the petroleum industry
. seven recommendations by Pembina for tax level field between fossil fuel and renewable
. no further tax expenditure on oilsands development

Mining

. reduce accelerated write-offs for exploration and development expenses
. options for other ways of reducing tax benefits for mining industry
. level playing field tax virgin and recycled metals
. new tax expenditure in form of deferral of tax owed on mining reclamation funds until that money spent

Agriculture

. increase spending on assistance to farm transition
. consider eliminating tax relief given fuel ethanol made from corn

Transportation

. transit passes
. increase gas tax 2 cents litre
. sales tax on gas guzzlers
. review subsidies to road and rail construction

From 1995 to the present, the major impetus for budget greening has come from the work of the NRTEE Task Force, outlined above. Although not as directly related, two other current initiatives have implications for the green budget process. The first is creation of the office of Commissioner of Environment and Sustainable Development and the requirement that departments complete, by the end of this year, Sustainable Development Strategies. Those plans will inevitably require consideration of the type of spending and tax policy measures which will be discussed at the October 23 workshop.

The second influence comes from the need to prepare the Canadian position for the third meeting of parties to the Framework Convention on Climate Change, which will be held in Kyoto, Japan, this December. Federal and provincial ministers announced in December of last year that Canada is not likely to meet its international commitment to stabilize carbon dioxide emissions by the end of the century. (give cite and reference specific 8% over forecast) The climate change issue is a perfect illustration of the two aspects of sustainable development discussed in this paper. The Canadian petroleum industry and others

have made significant progress in reducing per unit emissions through increased efficiency - but those gains have been swallowed up by greater increases in over-all volume of production. It appears that we cannot simply keep on doing what we do now but being more efficient at it if we wish to stabilize emissions. [18]

Thus we see that over the past decade, from the time that economic instruments began to be actively considered, the budget has moved from a peripheral to a central position in the array of tools available to governments as they work to bring about the transition to sustainability. At the same time, of course, it has been a central topic in Canadian political debate, which has been preoccupied with the issue of pubic debt. The next stage of the deficit and debt reduction process is forecast to occur in the 1997-98 budget, when for the first time in several decades the federal government will generate a surplus. Discussion has begun now on the use to which those surplus funds should be put, with opinion divided amongst the three available options - debt reduction, spending or tax reduction.[19] The Liberal Party took the position, in the 1997 election campaign, that one half of any surplus would go to new program spending, with the remainder divided in some fashion between debt reduction and lowering the tax rate.[20]

This has two major implications for the green budget process: (1) major subsidy reduction is well underway, and therefore support to unsustainability will be a less pressing issue; (2) there will be more room for provision of positive financial incentives to sustainability, either through direct or tax expenditure. For instance, using the example of renewable and non-renewable energy supplies, the playing field will have been made more level, and the opportunity will exist, in a way it did not before

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[18] This failure of the 1995 National Action Program on Climate Change, which relies primarily upon the policy instruments of exhortation and voluntarism, raises the question of whether budget measures, such as a carbon tax, should be implemented. A carbon tax, in turn, rekindles in the minds of westerners memories of the hated National Energy Program of the Trudeau era. Can a Canadian government, in the face of immediate and latent separatist threats from Quebec and British Columbia, afford to again stoke the fires of western alienation?

[19] In a lively panel discussion on the CBC television Sunday Report program (9/28/97) Judy Rebick presented the arguments in favour of increased program spending (particularly on social programs, health and education); while Steven Harper of the National Citizen's Coalition argued in favour of debt reduction. At no point in the debate did anyone mention the option of greening the budget. However Harper used the term sustainability and unsustainability at several points to buttress his insistence that it would be irresponsible to "future generations" to leave them saddled with a large debt. In his words increased social spending would undermine "financial sustainability".

[20] Edward Greenspon, "Liberals' puzzle: Who gets what?" The Globe and Mail, September 20, 1997, p. A 10.

annual surpluses were available, to tilt it in the direction of sustainability by providing various forms of financial support to renewables.

In short, the focus of the green budget dialogue will shift, in the coming era of annual surplus, from eliminating subsidies to unsustainability[21] - which provided the wrong positive financial incentives - to providing the *right* positive financial incentives and to providing new, negative incentives.

In *Red Book 2*, the Liberal party made the following statement about its accomplishments during its previous tenure in office and its plans for the future: "The Liberal government has supported sustainable development and environmental priorities with changes to taxes, grants, and subsidies. For example, we have improved the tax treatment for renewable energy and provided a tax incentive for the donation of ecologically sensitive land for conservation purposes. The sustainable development strategies that emerge from each federal department will identify further opportunities to integrate environmental decisions into economic policy. Research to ensure that the tax system supports sustainable development will continue." Now in its second mandate, the Liberal Government will have ample opportunity to fulfill this promise.

2.3 Budget greening to date in other jurisdictions

Since the 1992 Earth Summit, governments worldwide have addressed the challenge of sustainability using a variety of approaches. Many countries have experimented with numerous market-based mechanisms (such as consumption taxes, elimination of subsidies for environmentally damaging activities, and tradable emission permits) with varying degrees of environmental and economic results (OECD 1997b).

Market-based budgetary measures for environmental protection attempt to internalize previously external costs of environmental services. In theory, properly designed mechanisms affect estimates of cost and benefit of alternative actions, influencing decision-makers to make environmentally superior choices; and they do so at a lower total cost to both government and business than command and control approaches. Academic discussions and theoretical justifications of the benefits of market-based mechanisms have been accumulating dramatically over the past 25 years (Daly 1996, Jenkins and Lamech

[21] In the absence of a completed baseline study, it is difficult to determine the extent to which such subsidies have been removed. In its report "Keeping a Promise...", the Standing Committee showed that there had been substantial decreases in federal support to "unsustainable" forms of energy production, and an increase in support for energy efficiency and alternative energy. But the problem is far from gone in this sector, and it remains in several other sectors as well. (See for example Bregha et al, 1995, p.8)

1994). Empirical evidence of these benefits gathered from real-world applications has been slow to follow, however.

In this section we provide a cursory inventory of budget greening measures which have been taken to date around the world, with a focus on OECD nations. As pointed out earlier, there is no universally accepted definition of environmental budgeting measures. In this paper, we characterize budget instruments as falling into one of 5 categories (defined above) for the purposes of constructing our matrix in section 4. At present, the OECD, European Commission, EUROSTAT and the International Energy Agency are working together to develop a universal definition of environmental taxes and a statistical framework to provide a clearer picture of the revenues and environmental impacts of the taxes (OECD 1997a). This framework will also enable cross-country comparisons and further analytical studies of the data. (See Table 1).

		Australia	Austria	Belgium	Canada	Czech Repub	Denmark	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Italy	Japan	Luxembourg	Mexico	Netherlands	New Zealand	Norway	Poland	Portugal	Spain	Sweden
	Motor Fuels																								
1	Leaded/Unleaded (differential)	1	1	1			1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	
2	Gasoline (quality differential)							1																	
3	Diesel (quality differential)						1	1				1						1			1	1			
4	Carbon/energy content						1	1											1		1				
5	Sulphur content						1														1				
6	Other excise taxes (other than VAT)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	
	Other Energy Products																								
7	Other excise taxes	1	1	1			1	1	1	1	1	1		1	1	1	1	1	1		1			1	
8	Carbon/energy tax		1	1			1	1											1		1	1			
9	Sulphur content			1			1		1							1					1	1			
10	Nox					1			1													1			
	Vehicle Related Taxation																								
11	Sales		1	1	1		1	1			1	1	1	1	1	1		1	1		1		1		
12	Road		1	1	1	1	1			1	1	1	1	1	1			1	1		1			1	
	Agricultural Inputs																								
13	Fertilizers																				1				
14	Pesticides						1	1													1				
	Other Goods																								
15	Batteries			1			1					1											1		
16	Plastic carrier bags						1					1	1									1			
17	Paper carrier bags						1																		
18	Disposable containers			1			1	1				1	1								1	1	1		
19	Tyres				1		1	1				1													
20	CFCs/halons	1				1	1					1										1			
21	Disposable cameras			1																					
22	Lubricant Oil						1	1													1				
23	Oil Pollution	1						1															1		
24	Solvents						1																		
25	Disposable tableware						1																		
	Direct Tax Provisions																								
26	Env. investments/accelerated depreciation	1	1	1	1	1	1	1	1			1				1		1	1		1	1	1		
27	Free company car taxed						1	1		1															
28	Commuting expense tax	1		1			1	1		1													1	1	
29	Parking tax	1																							
30	Pub. transport tax deduction																								
	Air Transport																								
31	Noise	1		1					1	1		1				1			1		1	1			
32	Other taxes or charges				1		1														1		1		
	Water																								
33	Water consumption	1		1		1	1	1	1	1		1						1	1		1	1	1		
34	Sewage charges	1		1		1	1	1		1		1	1					1	1		1	1	1	1	
35	Water effluents	1		1		1	1		1	1								1	1			1	1		
36	Manure																		1						
	Waste Disposal and Management																								
37	Municipal Waste	1			1	1	1	1	1	1		1	1						1		1	1	1	1	
38	Waste Disposal	1	1	1		1	1	1	1	1		1		1	1				1		1	1	1	1	
39	Hazardous Waste	1	1	1		1		1	1	1		1	1								1	1	1		
40	Landfill							1												1			1		

		Australia	Austria	Belgium	Canada	Czech Republic	Denmark	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Italy	Japan	Luxembourg	Mexico	Netherlands	New Zealand	Norway	Poland	Portugal	Spain	Sweden
	Motor Fuels																								
1	Leaded/Unleaded (differential)	1	1	1			1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	
2	Gasoline (quality differential)							1																	
3	Diesel (quality differential)						1	1				1						1			1	1			
4	Carbon/energy content						1	1											1		1				
5	Sulphur content						1														1				
6	Other excise taxes (other than VAT)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	
	Other Energy Products																								
7	Other excise taxes	1	1	1			1	1	1	1	1	1		1	1	1	1	1	1		1			1	
8	Carbon/energy tax		1	1			1	1											1		1	1			
9	Sulphur content			1			1		1							1					1	1			
10	Nox					1			1													1			
	Vehicle Related Taxation																								
11	Sales		1	1	1		1	1			1	1	1	1	1	1		1	1		1		1		
12	Road		1	1	1	1	1			1	1	1	1	1	1			1	1		1			1	
	Agricultural Inputs																								
13	Fertilizers																				1				
14	Pesticides						1	1													1				
	Other Goods																								
15	Batteries			1			1					1											1		
16	Plastic carrier bags						1					1	1									1			
17	Paper carrier bags						1																		
18	Disposable containers			1			1	1				1	1								1	1	1		
19	Tyres				1		1	1				1													
20	CFCs/halons	1				1	1					1										1			
21	Disposable cameras			1																					
22	Lubricant Oil						1	1													1				
23																									

Recognizing the importance of consistency with categorizations published by the OECD and IISD, we provide a table showing how we have used their information to illustrate the usefulness of our matrix.

TABLE 2: Number of Budget Greening Measures in use in OECD countries as of March 1997

	Program Expenditures	Tax Expenditures	Emission Charges	Product Taxes	Other Taxes and Charges
Energy		1	12	48	82
Resources				39	34
Waste/ Pollution			42	36	20
Foreign Affairs and Trade					

The numbers in the boxes above represent total amounts of the budget greening measures in use in all 28 OECD countries, as reported in OECD (1997).

TABLE 2.1: Specific Tax Measures included in totals provided in Table 1.

	Program Expenditures	Tax Expenditures	Emission Charges	Product Taxes	Other Taxes and Charges
Energy		Tax deduction for public transportation commuting	Carbon/Energy Tax, NO_x	Differential Motor Fuel Taxes, Carbon/Energy Content Taxes, Sulphur Content	Other energy excise Taxes, Road Tax, Company Car Tax, Commuting Expense, Parking
Resources				Vehicle Sales Tax, Plastic Carrier Bags, Paper Carrier Bags, Disposable Containers, Tires, Disposable Cameras, Disposable Tableware	Water Consumption, Municipal Waste
Waste/ Pollution			Sewage Charges, Water Effluents, Hazardous Waste	Fertilizers, Pesticides, Batteries, CFCs/halons, Lubricant Oil, Oil Pollution, Solvents, Air Transport Noise	Manure, Waste Disposal
Foreign Affairs and Trade					

Environmental investments/accelerated depreciation, Other Air Transport taxes or charges and Landfill taxes were not included in the above chart due to difficulty of categorization given the limited information provided in the OECD (1997) document.

Numbers in the boxes correspond to the tax measure numbered in TABLE 1 above, adapted from OECD (1997a).
Numbers 26, 32 and 40 have been left out pending further discussion and categorization.

Solid waste could go under either resources or waste but we chose to put these under resources.

According to the OECD, budget greening may be considered at three levels. The *highest* of these levels (which we have defined above as ecological taxation) results in the true integration of environmental concerns into government fiscal structure. Greening at this level involves the identification, elimination

and/or modification of existing distortionary, direct and indirect, subsidies and tax provisions of negative environmental impact. The number of such subsidies and tax provisions currently in effect in Canada alone is staggering. Action at this level has occurred in only a few OECD member countries, namely Belgium, Sweden, Denmark, Norway and the Netherlands (OECD 1997). Action in these countries ranges from the establishment of "green tax commissions" to comprehensive tax reforms. The *second* highest level of budget greening involves a restructuring of existing taxes in an attempt to alter relative prices. Examples of this type include differential taxes on motor fuels which have been introduced in most OECD countries. The *third* level of budget greening involves the introduction of new eco-taxes on polluting and scarce-resource-extracting products. Each OECD country has introduced some sort of eco-tax on products or emissions (OECD 1997).

Comprehensive budget greening involves action at all three levels of green taxation, along with the use of other economic instruments such as tradeable emissions permits and regulations. The ultimate vision is an economic system with revenue based on consumption taxes instead of income taxes. Such a system will discourage socially undesirable activities (pollution, resource extraction, consumption) and encourage socially desirable activities (employment, income, savings).

PROGRAM EXPENDITURES & TAX EXPENDITURES

Both these types of expenditures are positive incentive instruments and include subsidies, grants and tax allowances. These instruments provide a financial incentive for individuals to undertake an activity they would not otherwise. Identifying environmentally damaging public and tax expenditures and replacing them with environmentally beneficial ones may result in a lower level of public expenditure as the cost of unsustainable activities rises with the increasing costs of resources etc.

Investment tax incentives for pollution control are directed toward the purchase of capital goods and services for regulatory pollution prevention. Such incentives include special depreciation for pollution control equipment, accelerated depreciation, and tax credits. These types of tax incentives have been introduced in Japan, Korea, Taiwan, France, Germany, the Netherlands and Canada to provide a balance between environmental considerations and industrial competitiveness (Jenkins and Lamech 1994 p12, Gale and Barg 1995 Netherlands).

In California, tax credits enabled the development of the world's most successful renewable electrical energy generation program including solar, wind, geothermal, biomass and other renewable electric generation technologies (Gale and Barg 1995).

In Denmark, government investment in wind energy from 1979 to 1989 has resulted in the creation of a commercially viable alternative energy source. Government contributions included a 30% investment subsidy, an electricity tax repayment scheme and funding for research and development in wind technology (Gale and Barg 1995).

The Canadian prairies are currently being replenished by the Permanent Cover Program which provides cash subsidies and grants for the conversion of lands at risk of soil degradation from agricultural practices, by planting perennial forages and/or trees (Gale and Barg 1995).

The Common Agricultural Policy of the European Union is being reformed using compensation payments and subsidies to offset a transition from a price support policy to an income support policy for farmers. A similar initiative is also occurring in the UK. The purpose is to encourage sustainable farming practices and afforestation to decrease food production surpluses and environmental degradation due to over-intensive farming (Gale and Barg 1995).

In the mid 1980s, Germany introduced a program to reduce car emissions. A feebate scheme incorporated tax differentials favouring compliance with low emissions standards, tax exemptions were granted for cars registered with catalytic converters, and cash incentives were provided for retrofits of existing cars with catalytic converters (Gale and Barg 1995).

EMISSION CHARGES, PRODUCT TAXES & OTHER TAXES & CHARGES

Effluent charges on sulphur dioxide emissions, tax differentiation between leaded and unleaded petrol, user charges for public waste disposal, depletion taxes on mineral exploitation and stumpage fees for timber demonstrate how these economic instruments are used (Barbier, 1992 p2; Gale and Barg, 1995 p12; OECD, 1994 p18; Owens, 1993 p708).

OECD (1997) show that consumption taxes such as Value Added Tax (VAT) are presently maintaining a high profile as both revenue collecting instruments and instruments to influence consumer behaviour. Environmental taxes are consumption taxes designed to charge users for environmental services or debts previously absorbed by society as a whole. This concept, which can theoretically raise revenues without creating economic distortions was first introduced by economist Arthur Pigou in 1920 (Pigou 1920). More recently the concept has been advanced by the double-dividend theory which states that by substituting consumption taxes for income taxes, environmental protection may come about at little or no

cost. Whether Pigouvian taxes are indeed "non-distorting", and hence the key assumption underlying the concept of the double dividend, are both being questioned by a few economists.[1]

The shift towards consumption taxes is most evident in Denmark's 1993 tax reforms where the need to shift taxation away from wage income was stressed (OECD 1995 p13, Andersen 1994).

Denmark, Finland, the Netherlands, Norway and Sweden have all introduced some sort of CO_2 tax. In 1993, Denmark's 16 taxes/excises with environmental implications generated 7.30% of total tax revenue (OECD 1995). The Danish government also announced plans to substantially increase energy taxes over the period 1994-1998 (OECD 1995).

Budget neutral instruments involve the redistribution of revenues and include deposit-refund systems, feebates, and distributive credits. Environmental gains realized from the application of such instruments may actually lower the level of government spending needed to pay for the social effects of pollution. Popular examples of this type of instrument include the deposit-refund systems for beverage containers in many states of the U.S. since 1971; and tax for fuel conservation first introduced in Ontario in 1989 (Gale and Barg 1995, Jenkins and Lamech 1994). Another example is the concept of tradable emissions permits, a version of which was implemented by the USEPA in the mid 1970s (OECD 1997b)

3. Greening the federal budget

The purpose of this section is to present the two basic variables which will be the subject of discussion at the October 23 workshop - federal budget instruments and policy fields - in very general terms. It begins with a brief discussion of some of the jurisdictional constraints affecting federal government action in the environment field. The following section discusses ways in which the government of Canada might decide which instruments will be applied to which policies in the medium-term budget greening process.

3.1 Jurisdictional constraints on federal budget greening

Today, in a globalized economy functioning within an emerging set of rules established by various forms of international agreement, the government of Canada can be thought of as the ham in the jurisdictional sandwich. Some relatively new and untested constraints exist above it, at the international

[1] See in particular (Morgenstern 1996)

level, while below, at the provincial level are found the very familiar and well known *de jure* and *de facto* constraints of Canadian federalism. It is not possible to provide any definitive description in this short space of either set of constraints and what follows presents only the two major constraints of relevance to this discussion - subsidy of exports and resource taxation.

International

Generally speaking, the international trade agreements to which Canada is party require that domestic and foreign goods be given equal treatment. Under the World Trade Organization regime, some trade restrictions invoked for environmental protection purposes are allowed. A subsidy provided to domestic manufacturers which was not equally available to their competitors would not be allowed. In the reverse case of a tax imposed upon Canadian manufacturers, which placed them at a competitive disadvantage in comparison with imports, a customs duty, referred to as a "border adjustment tax" is trade-legal. Alternatively, revenue generated by such a tax could be used to lower other taxes applied to that industrial sector, thus removing the competitiveness disadvantage. In summary, international agreements at this time do not unduly restrict federal budget greening measures. On the contrary, in several areas international agreements have arguably strengthened the resolve (if not the hand) of the federal government to take action concerning problems such as ozone depletion and Carbon Dioxide emissions.

The provinces

The Canadian constitution allows the federal government much greater freedom to tax than it does the provinces, which are precluded from indirect taxation, with one important exception: "except for natural resource taxes, the federal government is constitutionally entitled to levy any kind of tax..."[2] This is of particular relevance for budget greening, since the over-all policy thrust dictated by the needs of sustainability is to increase energy and resource prices as a means of giving financial incentives to greater efficiency of use.

Beyond the letter of the constitutional law, the provincial claim to exclusive rights to resource taxation revenues was probably strengthened by the federal-provincial conflicts over oil revenues some twenty years ago. Perry refers to the "conflicts that arose over energy pricing and taxation in Canada as petroleum prices rose following OPEC actions, first in 1973 and again in 1979. Both levels of government were determined to capture the greatest possible share of the resulting incremental; clashes over pricing,

rationing, revenue shares and oil conservation and development were constant."[3] Because of the intense western dislike of the Trudeau government National Energy Program, any form of carbon tax proposed at the federal level is likely to encounter stiff provincial opposition. During the next few years, as Canada again faces national unity challenges, that opposition will inevitably affect federal policy. Any significant reliance on resource pricing to assist in the transition to sustainability will have to be done through a coordinated national program, relying on provincial taxing powers.

3.2 Budget instruments

A policy instrument is used by a government to influence the behaviour of state and non-state actors in ways which will accomplish policy objectives. While the next section discusses potential criteria which can be used to select instruments, this section simply attempts to classify budget instruments as defined above. The first level of classification, of course, is the distinction between expenditure and generation of revenue.

3.2.1 Expenditure

Planned expenditures in the 1997-98 federal budget can be summarized as follows:

1) payments to other levels of government
2) payments to individuals
3) program spending
4) public debt charges.[4]

Analysts agree that the transition to sustainability will, in the long-term, require increased social equity which has implications for the first two categories listed above -- payments to governments and individuals intended to achieve a more equitable distribution of Canadian wealth amongst regions and classes. As set out above, this discussion of medium-term budget greening is limited to resource consumption and pollution and waste generation and for that reason expenditure in the form of payments to governments and individuals is not examined here. As we have seen, debt and deficit reduction and budget greening measures have been interconnected over the past few years. Beyond very general comment upon the implications which greening measures have for the ratio of expenditure and tax revenue, and resulting need to borrow, however, the fourth spending category, public debt charges, also

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[2] Ontario Fair Tax Commission, p. 92.
[3] J. Harvey Perry, Taxation in Canada (Toronto: Canadian Tax Foundation, 1990), p. 158.

lies largely outside the pale of this discussion. This discussion is limited, accordingly, to program expenditure.

There are many ways in which program expenditure might be broken into sub-classifications. At this broad level of generalization, however, we need only concern ourselves with two: (1) direct expenditure, and (2) expenditure in the form of foregone revenue, commonly referred to as tax expenditure.

3.2.2 Revenue

Again drawing upon the 1997-98 budget, the forms of revenue generated to support the federal government activity represented by this listing of policy fields can be summarized as follows:

. personal income tax
. corporate income tax
. employment insurance contributions
. goods and services tax
. customs import duties
. other excise taxes
. other taxes
. non-tax revenues

The question of whether employment insurance is a form of tax or a true insurance system and its relationship to other forms of social security raises issues far beyond the scope of this analysis. While central to the subject of ecological taxation and its objective of reducing labour taxation, it, and other payroll taxes, need not be considered in the context of the 1999-2000 budget. Both forms of income tax, and the concept of reductions through tax expenditure, are obviously central to this discussion. The potential use of the GST to influence the behaviour of manufacturers, in terms of such things as product design, or consumers, particularly when combined with labelling programs, is also central. Border adjustment taxes intended to ensure competitiveness by applying the same green tax to imports as to domestic manufacturers are another set of instruments which are now under active consideration (need cite). Thus, custom import duties must also be considered. As discussed above, user fees have a precise definition and are generally not considered a tax. For these purposes, however, they will be combined with

[4] Canada, 1997-98 Main Estimates, Part 1 (Ottawa: Supply and Services, 1997), p. 11.

other forms of penalty taxation (tax intended to provide a negative incentive) and all will simply be referred to as a penalty tax.

Thus we are left with the following classification of revenue budget instruments:

. personal income tax
. corporate income tax
. manufacturers' tax
. sales tax
. import tax
. penalty tax

For purposes of the October 23 discussion, we suggest that an even broader level of generalization be used. As set out above in section 1.3 (Definitions) we have grouped the revenue instruments into three categories: emission charges, product taxes, and other taxes and charges. Since resource taxation is a primarily provincial jurisdiction it is excluded from this discussion.

3.3 Policy fields

How, then, should we classify policy fields? One obvious starting point is the listing of ministries in the Main Estimates. Each ministry administers a number of programs intended to achieve a set of policy objectives which are seen, by those responsible for the current governmental organizational design, to be sufficiently related to one another to be grouped into a single administrative unit.[5] Each ministry, therefore, can be taken to represent a single federal policy field. What becomes more difficult is the question of the extent to which each of those fields should then be broken down to sub-categories. A listing of major federal policy fields, which in some instances combines spending by a number of ministries, is as follows:

. agriculture
. heritage
. environment (waste and pollution) [also includes parks]
. government administration
. fisheries (largely coastal)
. foreign affairs and trade
. health
. human resource development

. Indian affairs and northern development

. industry

. justice

. national defence

. natural resources (excluding fisheries)

. public works

. transport

. veterans affairs

. employment insurance

A Guide to Green Government [pp.15 - 16] provides recommendations for ways in which the federal government can reduce the environmental impact of its own activities. The focus here is upon the ways in which the budget can be used to provide financial incentives for societal actors to take similar actions. Accordingly the policy field "government administration" listed above (which includes such spending areas as Governor General and Parliament) is excluded from this discussion. Which of the remaining sixteen policy fields should be the subject of further more detailed consideration?

As discussed in section 1, above, the definition of sustainable development used by most analysts goes beyond the specific fields of resource conservation and waste minimization, and encompasses such things as intra-and inter-generational equity.[6] Because of the medium-term perspective brought to bear here, the emphasis is more upon the natural environment than social equity. Policy fields to be considered at the October 23 workshop, accordingly, can be divided into two groups - all those related to resources and waste in the first group and all others in the second.

This distinction, however, is difficult to make. The inherent logic of the sustainable development dialogue is that environment and economy are very much interconnected. To draw a line between the two by dividing federal policy fields into two groups is thus not really possible or desirable and the distinctions made are somewhat arbitrary. Energy policy, for instance, is of central importance to both environment and economy, which is what makes climate change an international issue far more intractable than

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[5] We recognize that there are many other possible ways to categorize policy fields.

[6] "The lasting contribution of the Brundtland commission is that, through the introduction of the sustainable development concept, societal development objectives have been broadened to include: ... the recognition of the importance of equity, both through time, with the notion that future generations should not be disadvantaged by the actions of present generations (intergenerational equity), and in the sense that the wants and needs of one group in society should not be met at the expense of the wants and needs of other groups (intragenerational and interregional equity)." Barbara Heidenreich and Mark Winfield, "Achieving Sustainable

protection of the stratospheric ozone layer. Two other policy areas, agriculture and transportation, are usually seen as straddling this arbitrary divide. The implications of pollution for human health mean that at least part of that policy field must also be included in the sustainability grouping.

Further difficulties arise from another of the central insights of sustainable development. We are now very aware of the two-way connections linking local and global. This means we must consider whether we are greening the federal budget in order to ensure the sustainability of that part of the globe we call Canada or the whole thing? Obviously Canada cannot be sustainable if the remainder of the world is not, and so we must be working for the sustainability of both - but what relative priority do we give to each in the budget? This will be a crucial question for discussion at the October 23 workshop but we can say, at a minimum, that the policy field of foreign affairs and trade – including international aid -- must be considered in the context of medium-term budget greening.

Finally, another key insight from the theory of sustainability is the importance of "taking time seriously" in a way that modern western culture has never done before. We may not be able to emulate the aboriginal commitment to "planning for seven generations", but we do need to lift our heads and look well into the next century to appreciate some of the imperatives emerging today. If we wish to take steps now and in the next few years that will truly lead us down the path to sustainability and ensure that we do not, in fulfilling our needs[7], "preclude the possibility of future generations meeting their needs"; then we will require some vision of what the longer term could be, some sense of a desirable, sustainable future. We will revisit this challenge in the Conclusion of this paper.

Returning to the categorization of policy fields, it is possible to aggregate these categories even further (as we did with the revenue budget) and thus move to a broader level of generalization. Doing so results in four basic policy fields:

. energy
. resources
. waste and pollution
. foreign affairs, trade and international aid

Development in Canada," in David Estrin and John Swaigen, Environment on Trial (Toronto: Emond Montgomery-CIELAP, third edition 1993).

[7] Our economy and society are not set up to address needs so much as wants. Ultimately sustainability will have to come to grips with this distinction. Current levels of consumption in the wealthy countries are egregiously unsustainable if they were generalized to all countries in the

Although development of the medium-term recommendations by the fall of 1998 will need to address both policy fields and budget instruments in more specific detail, we suggest that at this early stage the underlying principles can best be considered in these very general terms.

3.4 Matrix - instruments/policy fields

The purpose of the matrix is to allow the reader to easily visualize the budget instrument/policy field options being considered, at this very broad level of generalization which considers only five policy fields and four budget instruments.

Table 3. Matrix

Instrument / **Policy**	Program. Exp.	Tax. Exp.	Emission Tax	Product Tax	Other
energy	1	2	3	4	5
resource	6	7	8	9	10
waste/ pollution	11	12	13	14	15
foreign	16	17	18	19	20

This simplified matrix outlines an array of twenty possible budget measures. Starting in the top left corner and moving from left to right, examples -- for illustration purposes only -- of each are:

world. We in the North seem driven by what Thomas Hobbes called "the restless desire for thing

1. grants for energy conservation through building insulation
2. tax exemptions for same
3. charge on carbon dioxide release from fossil fuel combustion
4. product tax on energy inefficient appliances
5. federal licensing fee on nuclear generation
6. federal grants to defray municipal recycling costs
7. tax exemptions for purchase of more efficient fishery or manufacturing technology
8. federal per tonne tax on solid waste disposal
9. tax on virgin newsprint
10. custom duty on imported virgin newsprint
11. research development grants for pollution prevention changes to production processes
12. tax expenditures for same
13. federal emission charge on large volume toxic substance discharges to surface waters, regulated by provinces
14. a product design tax on disposable products such as cameras
15. customs duty on same
16. increased payments to the global environmental facility
17. tax exemptions for green industries exporting pollution control equipment
18. federal emission charges on substances affecting global environment, eg CFC's
19. [??]
20. custom duty tax on imports of beverages (rationale is to discourage moving volumes of water around the globe)

How do we prioritize measures for possible inclusion in the 1999-2000 budget? In the next section we suggest one possible means for choosing a combination of budget instrument(s) and policy field(s).

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after thing." This cannot continue indefinitely.

4. Barriers and opportunities

How do governments choose policy instruments? How *should* governments choose policy instruments? The distinction between these questions typifies the difference between academic and applied policy analysis. During the past few decades, scholars have devoted considerable attention to explaining the factors which influence instrument choice.[8] Although perspectives vary, almost all recognize that policy is made, at heart, through a process of negotiation between government agencies and the societal actors (such as business firms or labour unions) whose behaviour they wish to influence. There is a recognition, therefore, that the interests and power of societal actors inevitably influence instrument choice.

Applied policy analysis as done, for instance, by government departments developing recommendations for cabinet recognizes and takes into account this essential variable. "Political acceptability" or some variant of the phrase is almost always included in a list of factors to be considered when choosing between a law or tax. Whether in government, industry, research institutes or interest groups, professionals developing policy have an obligation to go beyond self-interest and consider in a rational manner ways in which different choices can best serve a broader public interest. Although recognizing that it is an ideal which will always be tempered by political realities -- as should be the case in a representative democracy -- they must explicitly state and use criteria for consideration of options, including the important variable of instrument choice.

Three criteria are often seen as the most basic.

(1) effectiveness - ability to achieve the policy objective;

(2) efficiency - cost of achieving that objective;

(3) fairness - various equity issues associated with achieving the objective.

Economics, of course, prescribes policy instruments with special emphasis on efficiency . The insight that we can achieve the same level of environmental protection at a lower net total cost is what has given rise to the discussion of economic instruments as an alternative to command and control regulation.[9] Economists may also combine the first two criteria into the concept of "cost-effectiveness."[10]

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[8] give cites

[9] See Pierce and Turner, Economics of Natural Resources and the Environment

Other perspectives used for both academic and applied policy analysis do more to take into account the distribution of cost, and thus incorporate the criterion of fairness. If a program or instrument can achieve the policy objective only by concentrating attendant costs upon the disadvantaged or one particular region it will be viewed less favourably than another which spreads the burden more widely. The other major aspect of the "fairness" criterion, of course, has to do with process and the extent to which such values as transparency or access to the decision-making procedure are included.

Another test commonly used in policy development is cost-benefit analysis. Such things as a Regulatory Impact Analysis Statement, prepared during development of any new proposed regulation allow a comparison to be made between the costs imposed upon the regulated industry and the societal benefits which it is hoped will result. The principle used is that benefit should exceed cost and those two concepts form the only criteria applied.

Another approach is commonly found in environmental assessment decision-making. The potential impacts associated with a proposed such as a solid waste landfill and the alternatives being considered (such as a landfill in a different location) are classified under such headings as noise, increased traffic, or loss of agricultural land. Usually through consultation with those affected, these categories are then ranked in priority order. Comparison between the options can then be made.

More specifically in terms of our subject, both the 1994 Task Force and the 1995 Standing Committee recommended methods for deciding on options.

1994 Task Force: A "framework" is recommended which can be used to: (1) "identify barriers to sound environmental practices"; and (2) to determine which barriers to sound environmental practices to eliminate or reduce, taking account of environmental, economic, social and implementation considerations."

To identify barriers, "sound environmental practices," "environmental priorities" and "sectoral environmental objectives" have to be identified. It is suggested this can be done using existing literature and agreed policy - eg, for the first the polluter pay principle and for sectoral objectives, the Red Book objective of protecting the stratospheric ozone layer.

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[10] For a recent evaluation of solid waste packaging policy which uses the single criterion of cost-effectiveness, see Donald N. Dewees, "Cost-Effectiveness Analysis of Packaging Waste Management Options," background study for Donald N. Dewees and Michael Hare, Packaging Waste Reduction in Canada: An Assessment of Policies, Markets and Myths, University of Toronto, Institute for Policy Analysis, May, 1997.

To determine which barriers to eliminate (ie, prioritize those identified) a series of criteria are used. Information pertaining to the potential elimination of each barrier is gathered under the following headings: (1) environmental benefits from elimination; (2) economic costs; (3) fiscal impact; (4) impact on social policy objectives; (5) administrative and implementation feasibility.

Priorities are then set by dividing the barriers into three groups:

. benefit environment and also benefit social and economic objectives;

. benefit environment and impose social and economic costs, but still net benefit;

. benefit environment, but at a net over-all cost.

The first group is given greatest priority, the second less and the third even less.

1995 Standing Committee Report: The Committee recommended a procedure for doing the "baseline study of federal taxes, grants, and subsidies, in order to identify barriers and disincentives to sound environmental practices" promised in the 1993 Red Book. That procedure is:

. bring together officials from Environment, Finance, Natural Resources, Agriculture, Fisheries, Transport, Industry, Health, International Trade, and Human Resources Development to develop, through public consultation, a methodology for the baseline study;

. "Departmental programs, practices and tax policies should be ranked according to their likely environmental impact, and the ones with the highest ranking should be given priority in terms of analysis"

. these rankings should be reviewed by the Commissioner of the Environment and Sustainable Development.

The method for ranking environmental impacts is not discussed.

These two procedures represent a good starting point, but need to be further developed. In terms of the first, more thought needs to be given to the way in which the criteria are used to divide barrier

elimination options into groups. For instance, they are implicitly all given equal weight and that aspect needs to be further considered. The ranking of environmental impacts suggested by the 1995 Committee report is extremely difficult. There is no societal agreement that saving the Atlantic cod fishery is more important than eliminating persistent toxic substances. Like every policy decision, comparison of options at that level of generalization, with no identification of distribution of costs and benefits, is of little assistance.

4.2 One possible approach

Building upon those approaches, we suggest, as a starting point for workshop discussion, a procedure which follows two steps: (1) divide the potential measures into those which can be readily implemented in the medium term and those which cannot, and; (2) apply three basic criteria to prioritize those in the first group.[11]

Identifying medium-term measures

Measures are included in this group if they are *either*:

. largely within federal jurisdiction, or

. already under development.

Prioritizing those measures

To do this, we must: (a) decide on criteria; and, (b) decide how the criteria will be applied.

The basic question facing the Oct. 23 workshop and from there the NRTEE Task Force is how to select the budget measures to recommend for the 1999-2000 budget. From our matrix, a "budget measure" is

[11] We have excluded revenue generation as a criterion, instead assuming that measures will be selected on the basis of their contribution to the sustainability objectives underlying this exercise. Note that the concept of "revenue neutrality" can refer to three different taxation practices; taxation the proceeds of which are plowed back into the program; taxation which brings the same total revenue to a government because any increases in one area will be offset by decreases in another (through tax relief); or taxation which has the same incidence or impact on the taxpayer because "an environmental tax would be exactly offset by some compensatory measure so that

identified through specification of both the policy field (or subfield, to whatever level of detail is desired); and budget instrument (again, or subinstrument). How best to make this selection? Clearly the various theoretical possibilities must be assessed comparatively to identify whose that are most promising. But promising for what? By what criteria does this assessment proceed? How much weight should be given t each criterion? Herein lies the key, because once the criteria are chosen and weighted, their application to the cells of the matrix becomes a fairly mechanical process. The selection of budget measures follows automatically.

Thus the most useful outcome of the Oct. 23 workshop is consensus or identification of disagreement on: (1) criteria; and, (2) relative weighting of those criteria.

Of course we are not the first group to attempt such an exercise. Far from it. Indeed some attempt to weigh policy options is as old as policymaking itself. As we have pointed out, there are some well established criteria for policy development, including instrument choice:

(1) effectiveness - ability to achieve policy objective;

(2) efficiency - cost to regulator and regulatee; net total societal cost, ie, includes both plus externalized effects of a given policy measure;

(3) fairness - in relation to various equity issues.

These traditional criteria require modification and expansion if they are to be applied to the federal budget to assist in the transition to sustainability. [12]

(1) effectiveness - In this case, defined as the ability to achieve sustainable development. That term is defined for these purposes as "meeting needs of present without compromising ability of future generations to meet their needs" which is done by *decoupling increases in material living standards from increased throughput of energy and materials.* That in turn is done in two ways:

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the individual was no worse off." See F. Bregha et al., "Ecological Fiscal Reform: A Review of the Issues". Final Report to NRTEE by Resource Futures International, November 1995, p. 19.

[12] A very recent OECD publication proposes an evaluation framework that includes environmental effectiveness, economic efficiency, administration and compliance costs, revenues, wider economic effects, "soft" effects (e.g. changes in attitudes and awareness), and dynamic effects and innovation. See Evaluating Economic Instruments for Environmental Policy, OECD, 1997, Chapter 7.

. **first** by increasing efficiency of the production process (now termed eco-efficiency); in this case "material living conditions" can be measured in economic terms by GDP. Just as was the case with energy conservation in the late 1970s, we work to achieve the existing policy goal of GDP increase which in turn provides employment, and more generally improved material living standards. This first approach can be thought of as doing what we are doing now, but more efficiently and therefore with less throughput. It can only carry us part way along the transition path, however, since efficiency increases alone, given the facts of rising global population and per capita productivity, are unlikely to avoid unacceptable resource depletion/pollution effects. For that reason, a second approach is also needed.

. **second**, doing things differently; eg, in addition to making motor vehicles as efficient as possible, we search for ways to reduce their total use by promoting the use of public transit, encouraging urban intensification, etc.

This second approach raises the issue of equity in a way the first approach does not. Since increased efficiency reduces costs for all concerned, distribution of that benefit is not a pressing issue. The second approach, however, raises total costs and thus distribution of that cost (equity) becomes an issue which must be addressed. How to do so is discussed in terms of the "fairness" criterion, below.

2) efficiency	a) cost to the federal government to administer a given budget measure
	b) cost to those affected of changing behaviour in response to the measure, eg, cost of obtaining information
	c) net total cost, eg reduced (or enhanced) Canadian competitiveness and resulting cost to Canadian economy
3) fairness	to the extent possible, use the existing criteria applied to budgets for tax and expenditure policy
	. tax - progressivity: tax rate is related to ability to pay
	. expenditure - regional equality; class progressivity (reverse of tax, expenditure is related to need)

both can be thought of as "distributive equity" or simply "progressivity"

Thus the standard criteria have been modified in terms of both the particular policy objective (sustainable development) and the instrument (budget).

Further criteria, which are basically sub-sets of the above, also follow from this modification. They are: (4) jurisdiction; (5) reduce existing incentives to unsustainability before putting in place new incentives for sustainability; and, (6) give priorities to measures already in the pipeline. A brief explanation of each follows:

4) Jurisdiction: Give priority to measures which fall solely within federal jurisdiction, and therefore do not require international or provincial harmonization. The federal government will likely be more *effective* in those instances, and removing the cost of harmonization certainly contributes to *efficiency*.

Almost nothing, of course, is purely federal, beyond defence and the post office. Policy fields might be thought of as on a spectrum from federal to shared to provincial. Thus coastal fisheries are more federal than solid waste.

In terms of budget instruments, the federal government has a free hand to apply any sort of manufacturing or sales tax or put in place any kind of income tax expenditure. Energy and resource taxation, on the other hand must be harmonized with the provinces and tax or direct expenditure subsidies may have international trade agreement implications.

Incentives: Existing incentives to unsustainability, such as tax expenditure or direct expenditures of various kinds to a fishing industry which is much larger than the resource base, are a cost to the federal government. Removing them meets the first of the three *efficiency* criteria. Economists would argue it also meets the third, since it moves the economy toward efficiency.

Pipeline: Again, measures already being developed meet the *efficiency* criteria.

Leaving aside for the moment the issue of criteria ranking, this leads to recommended criteria as follows:

1. decreased resource consumption, waste generation due to a) increased production efficiency;

b) other reasons;

2. cost: (a) government; (b) those affected; (c) total;

3. progressive distribution of cost;

4. federal jurisdiction;

5. remove existing subsidy to unsustainability;

6. already in pipeline.

There is no easy way of deciding a priority ranking for these. The simplest (but not necessarily the best) way to use them is to treat them as questions to be asked of each box in the matrix. For each yes answer, one point is given - the box with the most points wins, and that policy/instrument combination is recommended for the 1999-2000 budget. Much more difficult, but ultimately more rewarding, is to attempt to "weight" each of these criteria. This weighting may be done at a general theoretical level; or more particularly with respect to the specific proposal under discussion.

In the first instance, the questions are asked of each of the low-hanging matrix boxes, with a score of zero given for a yes and one for a no. Scores are added and priority thus established. The second approach will require a more detailed discussion of each criterion in relation to the specific measure.

5. Conclusion

During the past five years, significant environmental gains have been made as a result of subsidy elimination associated with deficit reduction. Although the process was not explicitly driven by environmental policy objectives, it was an excellent example of the ways in which sustainability measures can complement other societal concerns. Now, as we move from the era of annual deficits to that of surpluses, we hope this complementarity will continue. Any new program or tax expenditures, made possible by a revenue surplus, should be made in ways which assist in the transition to sustainability.

Despite our focus on the medium term, some attention must be paid to a vision of a more distant future. In his inimitable manner, Yogi Berra grasped a fundamental truth when he said, "If you don't know where you are going, you may never get there."

Where are we going? What is our longer-term vision? David Pearce has provided what he calls a "possible map" of the transition from (Stage 1) Ultra Weak Sustainability through (Stage 2) Weak Sustainability to (Stage 3) Strong Sustainability. Stage 1 is characterized by "minor tinkering with economic instruments" in a societal context of "dim awareness and little media coverage." Stage 2 involves "substantial restructuring of microeconomic incentives" accompanied by "wider public education for future visions." Finally Stage 3 features "full economic valuation; green accounts at business and national level; green taxes; offsets".[13]

We are currently somewhere in Stage 1. To move ahead will require several developments, including an increased understanding of green budgeting on the part of policy-makers, the media, and the general public. In the initial phases, more evaluation is needed, and this suggests the importance of setting up pilot programs whose impact can be carefully assessed.

[13] David Pearce, Blueprint 3: Measuring Sustainable Development, Table 12.1, p. 186.

Appendix: Emissions Trading in the Context of a Green Budget: issues to be considered

(Note: A general level of familiarity with emissions trading is assumed. Thus, this write-up does not include a description of the mechanics of emissions trading.)

Overview of Emissions Trading

The concept and practice of emissions trading is now more than 25 years old. It was initially introduced in the United States in the early 1970s as a means of bringing flexibility and cost savings to environmental compliance requirements, in particular to the United States' Clean Air Act. Early use of this economic instrument focussed on initiatives to manage American 'criteria air pollutants' (sulphur dioxide, particulate matter, carbon monoxide, nitrogen oxides, volatile organic compounds, ozone and lead). Several of the more celebrated uses of emissions trading in the United States include the removal of lead from gasoline (early 1980's), reduction of use of chlorofluorocarbons (late 1980's), and the American Acid Rain program (initiated through the 1990 Clean Air Act Amendments).

Experience with this policy tool is increasing, and consequently a growing number of pollutants are being addressed by the tool, and the range of applications is increasing. Emissions trading has been used to manage pollutants that lead to poor air quality (in particular, nitrogen oxides, volatile organic compounds and carbon monoxide), emissions to water systems (e.g.; phosphorous from sewage treatment plants and agriculture). Emissions trading has also been proposed for use with such diverse pollutants as toxics (e.g.; mercury) and refillable containers, and is a central strategy in the current global warming / greenhouse gas reduction debate. It has been applied at the regional, state, multi-state and federal level in the United States and is under consideration at the provincial and federal level in Canada currently.

To date, apart from the tentative attempts to demonstrate greenhouse gas offset potential in the newly evolving area of global warming environmental management, there has been one international trade of a pollutant in a more traditional and established area of environmental regulation. Ontario Hydro, as part of the Ontario Pilot Emission Reduction Trading project, purchased four hundred tonnes of nitrogen oxide emission reduction credits from the Michigan based electric utility Detroit Edison Company in 1996. This particular trade serves to highlight the potential for a market based approach, such as emissions trading, to deal with pollution issues that are transboundary, international and / or global in nature.

Results Achieved Through the Use of Emissions Trading

There are two well established benefits that result from the use of an emissions trading approach:

i) increased flexibility in how an emissions source complies with environmental requirements; and,

ii) lower costs for achieving this compliance.

Both of these benefits favour the sources emitting the pollutants. On the other hand, benefits to the regulating agency and public interest are not as well defined, but potentially include:

- early reductions of polluting emissions due to the incentive nature of the policy tool;
- availability of better information, due to the requirement of providing emissions information to document emissions reductions when participating in a trading program;
- a possibility of a more streamlined (less costly) administrative effort by the regulatory agency in overseeing and managing the trading program as compared to a command and control approach;
- greater innovation in methods and technology used to achieve environmental objectives; and,
- the possibility of engaging polluting sources more readily in discussions on tighter environmental objectives (due to the flexibility and lower cost of the emissions trading approach versus a regulatory or command and control approach).

Two key drawbacks to emissions trading, typically noted by regulatory agencies and environment / health public interest groups), include the uncertainty that it introduces in terms of achieving an environmental objective, and the acceptance it promotes of the recognition of property rights related to pollutant emissions.

It is clearly noted that the success of an emission trading program, in achieving the disparate objectives of industry (compliance flexibility and lower compliance costs) and regulators and public interest advocates (credible achievement of reasonable / significant environmental objectives), is directly dependent on the design and implementation features of the program. It must support:

- an active market;
- encourage participation of sufficient numbers of sources in the market;
- function with a minimum of intervention and in a timely manner (minimize any delay in processing credit creations and uses);
- be implemented in a reasonable time frame; and,
- be capable of tracking and assessing impact on the environment in terms of overall levels of emissions.

Experience to date with emissions trading programs has clearly demonstrated that trading itself will not ensure the achievement of environmental objectives. In order for there to be a benefit to the environment from emissions trading programs, the programs must be integrated into well developed regulatory compliance structures that include established emission targets, provide means of enforcing requirements and prosecuting violations, and the programs must work in conjunction with other environmental regulatory, economic and voluntary instruments.

Emissions trading has proven effective at reducing compliance costs and increasing environmental compliance flexibility for industry. But in some cases such as the United States' Acid Rain Allowance Program and RECLAIM (nitrogen oxides and sulphur dioxide) trading program in the Los Angeles area, despite authorities claiming success in meeting stated objectives, the environment / health public interest community have raised objections to the length of time involved in achieving environmental objectives, and have noted that sometimes the situation was made worse when the trading programs were first implemented.

As well, the extent of implementation of emissions trading is still limited. Despite having several national emissions trading initiatives, national programs that are intended to support the development of state level programs, and a greater than 25 year history of experience with this tool, fewer than two-thirds of the states have trading programs in place currently. And programs that are up-and-running tend to address only a small fraction of the total emission inventory of the pollutant in that jurisdiction. To date, it has been predominantly used with larger industrial sources (stationary sources), which represent only a fraction of the total range of sources and contributing to emissions. For example, trading programs for nitrogen oxides and volatile organic compounds tend to include sources that account for less than ten per cent of the emission inventory, and actual trading and use of emissions reduction credits typically accounts for less than five per cent of the emission inventory (although some of the newer initiatives are using an open market approach and are attempting to involve small sources in the trading program).

Types of Emission Trading Approaches

There are some key distinctions to be made between the two basic types of emissions trading programs, open market and cap and allocate. In an open market approach, there are usually no (or very few) limitations on which sources are eligible to participate. The diversity in types and sizes of sources that can participate increases the potential cost difference for reducing a pollutant, which in turn strengthens the market and broadens the base of possible participants in the market. But this diversity also increases the number of specific reduction strategies that may

be undertaken and makes the task of determining the validity of the reduction strategies more difficult and resource intensive. In the open market approach there are no pre-established limits on the quantity of emissions allowed (although there ideally are environmental objectives that help to create a demand for emission reduction credits), and sources voluntarily choose to create or use credits based on their needs and the state of the market (price and 'quality' of available credits).

A cap and allocate program on the other hand will identify the set of sources that are required to participate and will allocate 'allowances' to these sources. Trading then takes place between the participating sources, based on the allowances each has been allocated (this is the basis for the United States' Acid Rain Allowance Program). This approach limits the diversity and number of sources involved, but can still provide compliance cost savings and flexibility. The challenge of ensuring the validity of reduction strategies is more manageable than in the case of an open market program(due to there being a more homogeneous set of strategies to consider), but the cap and allocate approach introduces a significant challenge in terms of setting the initial allocation of emission allowances.

Federal and Provincial Responsibilities

As noted above, emissions trading programs need to be integrated with existing policy initiatives (regulatory, economic and voluntary instruments, and environmental objectives and targets) in order to be effective. Thus there must be consideration of which level of government should undertake the development of an emissions trading program, based on the nature of the pollutant involved (local, regional, transboundary or global impact, and the seriousness of the impact - ranging from a negative impact on the natural environment to a potentially fatal impact on human health), and the level of government that has responsibility for regulating that(those) particular pollutant(s) and / or the sources that emit the pollutant(s).

Possible Linkages Between Emissions Trading and the Federal Budget

Before addressing the role the federal budget might play in developing emissions trading in Canada, consideration must be given to the appropriateness of using emissions trading as a policy tool, along with other regulatory, economic and voluntary tools, for achieving environmental objectives in Canada. Research and assessment of the circumstances under which emissions trading will prove advantageous to Canadian society is needed.

To a large extent, the connection that emissions trading may have to the federal budget is governed by interpretation. Despite being an economic instrument, the use of emissions trading

is driven by policy levers that are not part of the budget process. The most critical lever for driving (encouraging the use of) emissions trading is the setting of emissions targets or limits. A second important policy lever is the preparedness of the regulatory agency to accept the use of 'emission reduction credits' for compliance purposes.

Thus the potential role that the budget can play in the development of emissions trading may be somewhat limited. Nonetheless, the budget can influence the development of emissions trading through both expenditure and revenue instruments. In the case of expenditure instruments, the role is an indirect one. Program spending, that increases the capacity of the institutional framework to manage emissions trading programs, will support the development emissions trading programs in Canada. This can take the form of providing resources to promote:

- the development of a registry (a central location for recording information on credit availability (creations, transfers, uses and retirements), price, etc.);
- the improvement of information in the emissions inventory (to assist in determining the allocations or emission limits required);
- the improvement of modelling capability (also to assist in determining the allocations or emission limits required); and,
- assurance of sufficient capability to effectively monitor, enforce and report on the achievement of environmental objectives.

Revenue instruments can possibly play a more direct role in supporting the development of emissions trading in Canada. To the extent that there are emissions taxes in place presently, a cap and allocate approach can be considered in place of emission taxes. Instead of using a financial disincentive to encourage lowering of emissions, a limit is placed on the emissions (a 'cap') and the trading program is used to promote cost effective and flexible ways of continuing to operate within those emission limits.

A second role for revenue instruments is to establish emissions charges which will raise the revenue needed to finance the program spending outlined above.

The rationale for pursuing such initiatives is linked to the extent to which the government determines there to be a need, and demand, for the development of more flexible, less costly, but less certain mechanisms for attaining environmental objectives in Canada. Since emissions trading programs require a developed regulatory and compliance framework to be effective, it is critical to ensure that such a framework is in place initially before aggressively pursuing emissions trading itself.

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