Implementing the Kyoto Protocol

Practical, Affordable and Achievable Solutions

submitted to the
Standing Committee on Finance
House of Commons

by
Jim Fulton
Executive Director
David Suzuki Foundation
219-2211 West 4th Ave
Vancouver, BC
V6K 4S2

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The David Suzuki Foundation is grateful for this opportunity to address the Standing Committee on Finance. Following the Prime Minister's September 2nd announcement that the government will ratify the Kyoto Protocol before the end of the year after a parliamentary debate and vote, the issues of energy use, clean energy production, and greenhouse gas emission reductions are very germane to the coming federal budget. It is those policy areas that we address in this brief. We also wish, through this Committee, to extend our support for the Prime Minister's commitment to 2002 ratification and urge the Committee to view Kyoto implementation as an opportunity to demonstrate responsible leadership in the reduction of energy costs and the pollution associated with energy use and production.

We believe that Canada can and should be an active participant in the world's efforts to curb dangerous interference with the climate system. As a wealthy country with well developed infrastructure and advanced technological capabilities we can provide responsible leadership on this issue. We can also stimulate our own economy by ensuring that key sectors, such as clean renewable energy production, are given an opportunity to develop and that our energy consumption is at least as efficient as comparable European countries. For the sake of current and future generations we must make the transition away from a fossil fuel economy and towards one based on sustainable energy practices. Not only will this help to stabilize the climate and clean our air, but it will also help to strengthen our economy through innovation and efficiency.

We also believe that such actions and approaches directly support the recent Throne Speech which referred policy initiatives that will address:

- Economic innovation
- Contributing solutions to global problems
- Competitive cities and healthy communities
- Improved public health.

While some may urge further delay, we wish to remind Committee members of the time and effort which has already been applied to addressing climate change. It is 15 years since the first significant international conference on climate change was held in Toronto. It is over 10 years since the 1992 United Nations Framework Convention on Climate Change was signed and ratified. And it is almost exactly five years since the Kyoto Protocol was negotiated. The climate cannot tolerate further delay. Canada must move forward and we urge that this issue be seen as a top priority in your deliberations and recommendations.

While many operational details of implementation plans will take time to finalize, the basic policies and measures that are required are well known. Many of these steps have been under discussion and analysis for years and experience in other jurisdictions provides ample evidence of their worth. On the other hand, it is likely that some key instruments and tools that will play key roles are not yet even conceived – but the implementation process, spread over 10 years, is such that it can and will evolve to take advantage of new developments. As the Prime Minister has noted, many major public and private initiatives such as the deficit reduction strategy are not detailed, step by step plans when they are first started – rather, they are evolutionary works with key targets

that take account of changing circumstances. Ratification of the Kyoto Protocol starts the process – it does not dictate implementation specifics and does not limit in any way the creativity that will arise in this evolutionary way. It does however, signal an important start that will end the years of 'paralysis through analysis' that some are eager to continue.

Implementing the Kyoto Protocol and Addressing Climate Change

Climate change is now a reality in Canada and around the world. Since the Industrial Revolution, concentrations of greenhouse gases in the atmosphere have been steadily increasing. Currently there is 30 per cent more carbon dioxide in the atmosphere and it is growing at a rate of 0.4% per year, largely as a result of fossil fuel combustion and deforestation. According to the most recent scientific analysis of the Intergovernmental Panel on Climate Change, the Third Assessment Report:

> Human activities – primarily burning of fossil fuels and changes in land cover – are modifying the concentration of atmospheric constituents or properties of the Earth's surface that absorb or scatter radiant energy. In particular, increases in the concentrations of greenhouse gases and aerosols are strongly implicated as contributors to climatic changes observed during the 20th century and are expected to contribute to further changes in climate in the 21st century and beyond. These changes in atmospheric composition are likely to alter temperatures, precipitation patterns, sea level, extreme events, and other aspects of climate on which the natural environment and human systems depend.[1]

Everyday, more evidence of the devastating economic and ecological consequences for Canada becomes available. Severe droughts are destroying the viability of Canadian prairie farms. Recent analysis from the University of Manitoba indicates that the 2001 drought cost the Canadian economy over $5 billion in agricultural losses. This year's drought can be expected to cause even more significant losses. Ironically, farmers from Canada's "have-not" provinces are voluntarily donating feed to help farmers in Alberta, the province with the highest GDP per capita. Recently 58 leading scientific experts, based in Alberta, wrote Premier Klein to express their concerns with Alberta's position in regard to the Kyoto Protocol urging the government to take immediate action.

For several years northern residents have been chronicling the significant environmental changes taking place in the Arctic. For example, permafrost is melting and throwing whole ecosystems and communities into jeopardy and creating dangerous conditions for pipeline stability. The government of Quebec is already developing plans to evacuate villages where melting permafrost threatens to sink houses in metres of mud.

In BC, warm winters have allowed the pine bark beetle and other insects to flourish and expand their territory, bringing damage to the ecology of the forest and the economy of many forestry dependent communities. At present, pine bark beetle infestations are consuming more than half a million hectares of forest in BC, destroying more than $4 billion in timber.

At the same time warm summers are impacting salmon migration, as noted by the BC government:

> In several years during the past decade, en-route mortality in several runs has been greater than 50 percent. Records from 1978 to 1998 indicate that en route losses have been greatest in years with warm river temperatures.[2]

In Eastern Canada, unusually warm summers have resulted in some of the worst smog seasons on record. This year Ontario suffered through a record 46 days of smog alerts. Few can deny that there are serious economic impacts from these changes, yet some political and industrial leaders continue to advocate for a "go slow" approach to addressing the problem, claiming that the economy will be irreparably harmed if we reduce our fossil fuel use and associated pollution. In fact, most predictions indicate that things will get much worse. Canada's temperature is expected to be more than 5 degrees warmer by the end of the 21st century.[3] Natural Resources Canada has suggested that:

> In Canada, climate change could lead to more frequent and severe flooding in low-lying areas, extended dry seasons, severe winter and summer storms, landslides, the collapse of road and rail systems and more.[4]

These changes will affect the Canadian economy since significant sectors of our economy are weather and climate dependent. Based on the most currently available data, these include:

- Forestry which contributes $20.8 billion to GDP and employs 373 thousand people
- Energy sector which contributes $55 billion to GDP and employs 201 thousand.
- Agriculture and the food processing industry which account for 8.3 per cent of the Canadian economy and are the third largest employer. Primary agriculture alone represents over $25 billion in GDP and employs 400,000 Canadians, while the food processing sector employs another 1.5 million.
- Tourism ,which stimulated total spending of $54 billion and contributed $22 billion to total GDP in 2000.

These sectors are all vulnerable to uncertainties in climate trends. In this context, it becomes clear that climate change is having, and will continue to have, serious economic and social consequences for Canadians in all regions of the country. Yet most of the discussion and debate around climate change and the Kyoto Protocol has centred on the real or imagined costs to some provinces and some specific economic sectors if we reduce our consumption of fossil fuels. Recognizing that the costs of doing nothing about climate change are both significant and long-lasting (as opposed to the often short-terms economic stimuli of new fossil fuel developments), we decided to examine the potential economic outcomes of reducing emissions.

Economic Innovation, Energy Efficiency, Multiple Benefits

In January 2002, the David Suzuki Foundation and the World Wildlife Fund contracted the Tellus Institute, a US based energy policy and planning group, to conduct an economic analysis based on proposals from Canada's National Climate Change Process (NCCP). This federal-provincial process had brought together governments, industry and independent organizations and generated hundreds of ideas on how to reduce emissions.

In conducting their analysis, Tellus examined and modeled domestic policy proposals selected from the National Process. If implemented as proposed, the selected policies would achieve more than half of Canada's reduction target under the Kyoto Protocol. Tellus found that the economy would continue to grow, and that the proposed emission reduction policies would in fact yield net economic benefits for Canada over and above business as usual. These benefits include:

- Cumulative net economic savings of $4 billion across the economy reaching $1.6 billion per year or $47 per capita in 2012.
- An additional 52,000 jobs due to the redirection of consumer spending away from fuel and electricity and toward other goods, services, activities and investments;
- A $135 average annual gain in household income related to the creation of new jobs; and a $2 billion increase in national GDP beyond that derived from business as usual.

These same policies would produce significant health and environmental co-benefits due to better air quality, improved public health and reduced damage to natural ecosystems, infrastructure and private property. However, while these co-benefits were not calculated by Tellus, recent analysis suggests that an annual emissions reduction of only 68 million tonnes of greenhouse gases, a little more than half of the reductions found by Tellus, would yield approximately $1.2 billion in avoided health damages alone.[5] This finding, and federal analysis and other similar work have arrived at similar findings, supports our belief that the multiple co-benefits of greenhouse gas reduction actions are central to the economic debate that surrounds Kyoto. Tabulating projected costs of action without including the projected benefits such as improved health care does not allow for proper evaluation.

The Federal government also completed and released analysis on the costs and benefits of meeting the Kyoto treaty. This analysis forms the foundation of the recently released Government of Canada Discussion Paper, "Canada's Contribution to Addressing Climate Change" (May, 2002). This paper sets out four options for achieving the Kyoto commitment of stabilizing Canada's greenhouse gas emissions at 571 million tonnes per year in the 2008-2012 period. This analysis shows that, while achieving the Kyoto target, the Canadian economy is projected to grow by more than 31 per cent. Under the most realistic Kyoto implementation scenarios, emission reduction actions barely impact on this growth. This is true for all provinces, including Alberta, and all sectors, including the oil and gas industry.

The analysis shows that with carbon dioxide reductions valued at a realistic level of $10 per tonne, emissions reduction measures for specific sectors and an emission trading system for large fossil fuel users produced the following economic results:

- the Canadian economy grows by 30.4 per cent by 2012, from $1 trillion to $1.315 trillion
- the Ontario economy grows by 35 per cent; $426.6 billion to $575.9 billion
- the Alberta economy grows by 26.2 per cent, from $118 billion to $150 billion
- the oil and gas sectors grow by 24.6 per cent
- machinery and equipment manufacturing grows by 65.7 per cent
- transportation equipment grows by 28.3 per cent
- electrical and electronic components grow by 47.8 per cent

This conservative approach to implementing the Kyoto Protocol demonstrates that strong economic growth over the next decade will allow Canada to easily achieve Kyoto's modest environmental goal. The economic analysis shows that we can afford to do it. Clearly it is now time to get on with implementation. We also wish to remind the Committee that similar analysis was conducted prior to the Kyoto negotiations and similar conclusions were reached. The 1995 summary report from the consulting firm Informetrica stated that:

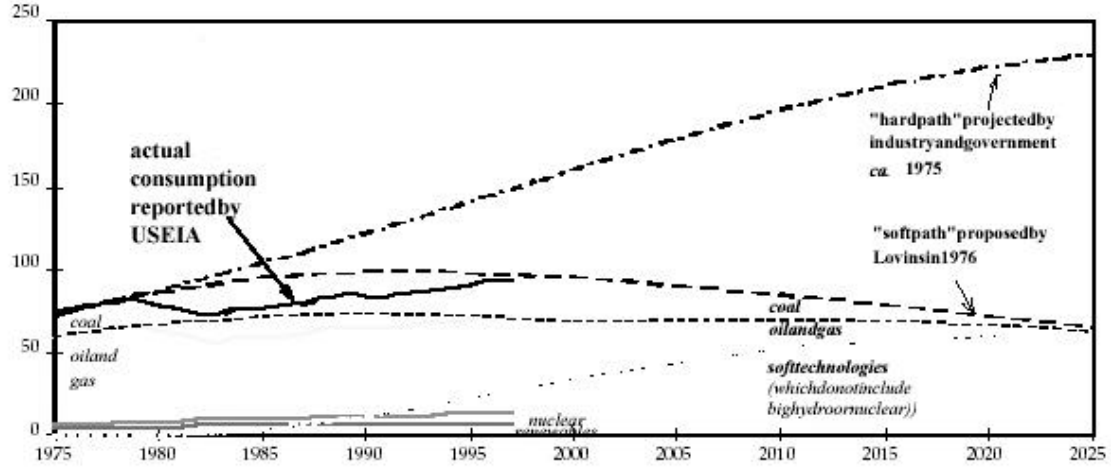
> "The overall size of the Canadian economy, and its growth, are unlikely to be significantly changed by initiatives designed to reduce emissions of greenhouse gases." And that " Increased costs are matched by increased savings from reductions in energy use by households, governments and businesses."[6]

Time and time again expert economic analysis has shown that we can afford to do this.. In contributing to the development of this year's Budget, we urge that the Finance Committee recognize that implementing the Kyoto Protocol is a priority and that it will benefit the Canadian economy. As a result of energy efficiency measures installed during the preceding decade, in the year 2000 Canadians saved $8.7 billion in energy costs and also avoided additional greenhouse gas emissions by 38.3 megatonnes.

Bearing this in mind, the plan chosen to reach Kyoto must be part of a larger plan to dramatically cut the use of fossil fuels and result in greenhouse gas emissions being reduced by over 50 per cent. We estimate that by 2030 such cuts would lead to economic benefits of over $30 billion per year.[7] For example, investing in high efficiency for buildings and infrastructure during construction ensures that we are not locked in to economic losses associated with poorly timed investments and that benefits are incurred over the entire lifecycle of the building. These wise, longer-term choices must be made now to ensure the best transition for the coming decades.

In fact leading companies in Canada and the United States have already begun to take action. This includes large multinational companies such as BP, Shell, Suncor, TransAlta, Toyota, Dupont and 3M. These firms have demonstrated that saving energy reduces emissions, reduces energy use and saves money, thereby improving their bottom line and helping them compete for market share and for capital. In all, the entire economy is better off today than was projected in 25 years ago, due to the decrease in energy use brought on by energy efficiency. As the graph below demonstrates, energy forecasters in the US

and Canada completely failed to comprehend the ability of energy consumers to reduce their direct energy use. Had we built according to the forecasters we would have drastically over invested in unnecessary projects, leading to greater pollution and gross economic inefficiency.



US Energy Consumption in Quadrillion BTUs per year
Source: Journal of International Affairs, Volume 53, Issue 1, 1999

Positive Solutions for Climate Protection: Policies and Measures

Some policies which can both meet the Kyoto target and start Canada on the path to long term emission reductions are described below. As outlined, these policies all have positive economic benefits.

Building and Appliance Efficiency

A national energy-efficient housing retrofit program: This program would include financial incentives such as tax credits, easy access to financing, home energy audits, energy performance labeling, home renovator training and certification, sales force training and community based delivery agents. Specific changes include the removal of the Goods and Services Tax, Provincial Sales Tax or Harmonized Sales Tax, from energy efficient technologies and appliances and accelerated depreciation of capital costs in rental housing.

National standards and an energy performance labeling program for equipment and appliances used in residential buildings: The budget should include provisions for the development and adoption of new minimum efficiency standards, beginning in 2004, for products including heating ventilation and air conditioning equipment, major appliances, domestic hot water heaters, lighting, windows and doors, motors and gas fireplaces.

A commercial building retrofit program: This program should include a package of financial and tax incentives to promote the renovation and retrofit of commercial buildings including warehouses, offices, hospitality and retail. This could be modeled after successful programs such as the Toronto Better Buildings Partnership (BBP) and Energy Innovators Plus.

A multi-unit residential retrofit program: Similar to the program for commercial buildings, only directed towards residential multi-unit rental housing such as high-rise apartment buildings.

A public buildings initiative: This would be a renovation and retrofit program aimed at municipally owned or funded buildings including schools and health care facilities. This involves refocusing, enhancement and expansion of a public building program targeted along the lines of the Federal Buildings Initiative and the spin-off for municipal buildings as well as the New Brunswick Building Initiative.

Expanded and updated national minimum energy performance standards and a labeling program for equipment and appliances used in commercial and institutional buildings: Products which would be part of this program include windows, commercial space heating, electric baseboards, distribution transformers, washers, refrigeration and cooking equipment, commercial service water boilers, fluorescent lamps and ballasts, chillers and large air conditioners.

Energy-efficient tax incentive: This incentive would use faster tax write-offs of the capital cost of energy-efficient equipment, construction and renovations as well as exemption from GST and PST.

Expansion of the commercial new building incentive program: This program is aimed at improving the lifetime energy performance of new commercial buildings by enhancing the energy efficiency of buildings during construction. It includes increased incentives

and additional access to national and regional financing mechanisms, e.g green loans and mortgages, a National Green Loan Fund and provincial/municipal revolving funds.

Passenger Transportation

Corporate Average Fuel Efficiency standards: By 2012, the fuel efficiency averaged over all new vehicles should be 8 litres/100 km, rather than 8.8 litres/100 km as estimated without this standard. Given fleet average targets, each manufacturer will have the flexibility to provide consumer choice while reducing fossil fuel consumption through improved energy efficiency. Given the new California legislation (July, 2002), it would be most appropriate for Canada to now co-operate with that state in providing the leadership to address this critical need for updated standards to encourage mass deployment of the best available technologies, such as those employed in the hybrid vehicles now on the road.

Enhanced transit services: This measure will increase the frequency of transit services and provide expanded services as well as improved safety and convenience. Improvements could be implemented by 2010 and last through 2020.

Transit infrastructure improvements: Major transportation infrastructure projects must be undertaken. To ensure that we are on the path to climate stability the committee should make sure that funding priorities reflect the need to achieve this goal. For Toronto, Montreal and Vancouver, eligible projects could include commuter rail, light rail, incremental heavy additions, and grade separated bus lanes. For other urban areas, projects could include light rail lines, commuter rail, and grade-separated bus lanes.

Tax-exempt transit pass: This program would see employees either receive tax-exempt transit benefits from the employer or purchase monthly transit passes through the employer using pre-tax income. This requires the federal government to change the income tax laws. The proposal is aimed at encouraging a shift from auto to urban transit use and is already widely supported by the public and by transit agencies. It could be implemented immediately and remain in effect indefinitely.

Telecommuting: This measure, designed to reduce automotive emissions, includes an aggressive education and outreach program and mandatory telecommuting programs (as appropriate) for offices with more than 50 employees. The strategy would be implemented by employers and enforced by provincial governments.

Car sharing: This involves facilitation of car co-ops in which members share joint access to a fleet of vehicles located in their neighbourhood. Members pay a one-time registration fee and user fees based on kilometres driven and time used. Car sharing programs would be implemented by the private sector including non-governmental organizations. In large metropolitan areas the program could include incentives, priority parking and transit discounts for members.

Mandatory ride sharing initiatives: Employers with more than 50 employees would be required to participate in a ride sharing program that includes carpool matching, preferential parking and a guaranteed ride home. Strategies for government would include public outreach and partnering with the private sector, municipally based ridesharing programs and incentives.

Inter-city bus subsidy: This measure requires a subsidy to intercity bus carriers in order to reduce bus fares to below the variable cost of single-occupant automobile travel (a $0.05/pkm subsidy subject to a maximum fare of $0.07/pkm is assumed).

Heavy duty freight transportation

Improved training for drivers of heavy trucks to enhance fuel-efficient driving practices: Trucking fleets would implement driver training programs addressing fuel efficiency and GHG emission reduction emphasizing best practices and return on training investment. Material would be developed under the NRCan Fleet Smart-Smart Driver program. The program would employ existing in-house trainers and training organizations.

Reduce heavy-duty truck idling: Through operator training, trucking fleets would reduce the amount of total engine idling time in their fleet. Some fleets may then elect to acquire technologies to help them address this issue.

Preventive maintenance program for heavy-duty trucks: Trucking fleets would implement a preventive maintenance program similar to Quebec's PEP program. Provincial regulations would drive the rapid take-up of this program, as demonstrated in Quebec.

Municipalities

Landfill methane capture and flaring: This measure targets methane gas emitted from Canadian landfills. It provides for the sharing of capital infrastructure funding for capture and flaring systems, on a dollar for dollar basis, with municipal governments and other landfill owners.

Other Policies

While these policies were determined to have positive economic benefits, this does not imply that other policies are not economic. The above noted policies were studied and modeled by the Tellus Institute based on the availability of data. The following policies should also be considered in the development of budget priorities:

Economic incentives for large emitters As a means of promoting the efficient use of energy resources and the atmosphere, and in order to achieve the Kyoto Protocol target in a cost effective manner, the federal government should implement economy-wide economic instruments such as a carbon tax on coal fired electricity, or a domestic carbon trading system with an enforced national cap on overall emissions. These steps would begin the process of integrating the environmental cost of fossil fuel emissions into the market price for energy and would help curb the use of the atmosphere as a free repository for pollution. Such a move will allow a price signal to emerge which alerts large and small consumers to the environmental consequences of a particular purchase. With an emissions trading system, market mechanisms can be brought to bear which promote the efficient allocation of resources. Additionally, designing a system of charging for the use of the atmosphere, will provide a source of funding to help workers displaced from the fossil fuel industry train for other sectors and careers.

*Moving More Freight More Efficiently by Rail Instead of Roa*d: Rail already moves 60% of overland freight in Canada, yet accounts for less than 15% of greenhouse gas emissions in the overland freight sector.[8] Canada's railways have the ability to increase their freight capacity and also have exceptionally competitive freight rates – the lowest per ton mile of all railways in the industrial world.

Designing tax and cost recovery polices could result in a significant mode shift away for road freight and toward rail freight. This would substantially reduce the amount of diesel fuel being used in Canada today and ensure that the cost of road repairs is recovered from those who cause road damage, while also reducing greenhouse gas emissions and common air pollutants such as particulates and smog-forming compounds.

Current tax policies that are more advantageous to trucks than rail are encouraging the environmental subsidy of trucking at the expense of air quality, habitat loss and climate stability.

Electricity Generation: New financial incentives should be offered to producers to encourage the development of low-impact renewable power technologies, including solar, tidal, wave, hydro and biogas energy. This could be achieved by expanding the current incentives for wind energy, (Wind Power Production Incentive). Additional incentives should be available to producers in provinces and territories that establish complimentary policy mechanisms matching or exceeding the value of the wind incentive.

An accelerated capital cost allowance should be developed for technologies which can be used to provide co-generation of heat and electric power for large and medium sized industries.

Conclusion: A Climate Protection Budget for Future Generations

Climate change threatens the economic and social wellbeing of all Canadians and future generations' opportunities for a sustainable future. However, solutions are both available and feasible. By designing budgets and funding priorities to promote sustainable renewable energy and energy efficiency we can ensure that Canada does its part to prevent climate change. Addressing the threat of climate change will provide numerous co-benefits: reduced air pollution and acid rain arising from fossil fuel emissions, stable or reduced energy costs with efficiency improvements, improved public health, and protection of water resources. In addition, by encouraging the development of non-fossil fuel based energy sources in Canada, we can drive innovation and diversify our economy while taking advantage of global trends in this area.

Implementing a long term strategy to stabilize atmospheric concentrations of carbon dioxide at appropriate levels requires changes in how we approach government financial planning and economic policy. The Standing Committee on Finance has an important role to play in this process. By making climate change a priority for this budget cycle, the Committee can ensure that all sectors of society are represented and that all points of view are included in the development of emission reduction programs and strategies. By the time the next budget is outlined, Canada will have ratified the Kyoto Protocol. The

Budget will be an important signal to the world as to how Canada intends to meet its international commitments and as to how we intend to address the right of future generations to inherit a stable climate regime.

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[1] *Climate Change 2001, Impacts, Adaptation, and Vulnerability,* Third Assessment Report, Intergovernmental Panel on Climate Change, 2001, p77

[2] *Indicators of Climate Change for British Columbia-2002*, British Columbia Ministry of Water, Land and Air Protection.

[3] *Tracking Key Environmental Issues*, Environment Canada, 2001

[4] *The State of Energy Efficiency in Canada* OEE 2001

[5] Caton, Robert and S. Constable, *Clearing the Air: a Preliminary Analysis of Air Quality Co-Benefits from Reduced Greenhouse Gas Emissions in Canada*, David Suzuki Foundation, March 2000

[6] Sonen, CA and MC Justus *Impact of GHG Initiatives on the National and Provincial Economies* Informetrica, April 31, 1995, p1

[7] Torrie, Ralph, *Kyoto and Beyond: the Low Emissions Path to Innovation and Efficiency* David Suzuki Foundation, October, 2002

[8] *Sustainable Transportation: Reflections on the Movement of People and Freight*, Centre for Sustainable Transportation, April, 1998