

Planning For The Next Generation

Ten Principles for Climate Protection & Innovation



David
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SOLUTIONS ARE IN OUR NATURE

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Executive Summary

The Canadian government envisions building an innovative 21st century economy and turning the challenge of climate change “to advantage through leadership in green technologies.”¹ As Minister of Natural Resources, Ralph Goodale frequently articulated “a national goal – for Canadians to become the most sophisticated and efficient consumers and producers of energy in the world.”² These aspirations are all critical for Canada to safeguard its long-term economic, social and environmental interests, and accept its share of responsibility in protecting our global climate. Indeed, Prime Minister Paul Martin renewed Canada’s commitment to meet its obligation under the Kyoto Protocol.³

As the Climate Change Plan for Canada evolves, these visions must be integrated. The inadequate, slow implementation process is increasing mitigation costs, putting Canada at a disadvantage in key emerging sustainable energy markets, and threatening to position Canada as the ultimate free-rider in global climate protection.

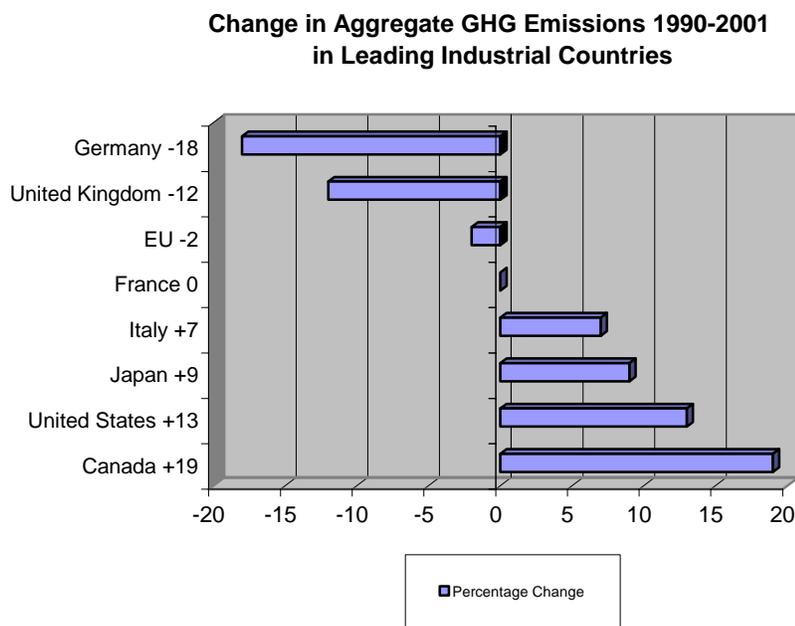


Figure 1. Source: UNFCCC. 2003. *Greenhouse Gas Inventories*.

The litmus test for assessing performance on climate protection and sustainable energy are emission and energy trends. Canada has one of the industrial world’s least energy efficient and most carbon intensive economies.⁴ Canada’s economy is 33% less energy efficient than the United States.⁵ Canada’s uptake of

¹ *Speech from the Throne to open the Third Session of the Thirty-Seventh Parliament of Canada*. February 2, 2004.

² This was eventually enshrined in the *Climate Change Plan for Canada, 2002*.

³ *Speech from the Throne to open the Third Session of the Thirty-Seventh Parliament of Canada*. Ibid.

⁴ Canada ranks 27 out of 29 OECD nations in terms of energy use per capita. Canadians annually consume more 6.19 tonnes of equivalent per capita. This is almost double the OECD average of 3.18 tonnes of oil equivalent per capita, and more than five times the world average. Only Iceland and Luxembourg use more energy per capita than Canadians. See Boyd, David. 2001. *Canada vs the OECD: An Environmental Comparison*. University of Victoria Eco-Chair of Environmental Law & Policy.

⁵ Ibid.

renewable energy is one of the slowest in the G-8. According to the most recent figures, Canada's emissions are growing faster than any other G8 country. Even Kyoto opponent, United States is in a better position to achieve its Kyoto target.⁶ (Figure 1.)

Recently, Prime Minister Paul Martin expressed a strong interest in reorienting Canada towards a long-term goal of sustainability.⁷ The Prime Minister recently pledged to push Canada to the front of the pack when it comes to meeting greenhouse gas emission targets, and that Canada will lead and benefit economically from Kyoto.⁸ Hopefully, this recent interest is an indication of a strengthened resolve to twin the climate protection and innovation agendas and accept Canada's fair share of responsibility for tackling the most significant threat humanity confronts in the modern era. An honest commitment could reverse Canada's deindustrialization marked by declining rates of high-value-added exports.⁹

There is now, and there will continue to be, a need to evaluate and update the Climate Change Plan for Canada. Taking stock of the Plan, however, must not further delay implementation. These Ten Principles do not comprehensively delineate the most expedient policies. More importantly these Principles articulate an approach – a *modus operandi* – for developing and implementing the next generation of the Plan. These Ten Principles are similarly important for the next generation of technologies, cities, Canadians, and the next generation of Federal Government:

1. ***Take advantage of smart regulations that encourage technological innovation.*** Voluntary measures and spending, *on their own*, have proven economically and environmentally ineffective. A range of policy instruments must be deployed in an integrated manner to achieve synergies in emission reductions and innovation. Smart regulations and standards must be central and supported by market incentives and disincentives for the private sector, other levels of government and individuals, other innovative fiscal reforms, and government procurement policies.
2. ***Establish a central bureau in the Privy Council Office*** with the authority and knowledge to engage departments on Kyoto implementation in an integrated manner, and foster the development of an innovative, low-carbon economy. Working closely with Treasury Board, the agency would apply a Kyoto lens to government programs and ensure departmental accountability for reductions committed to in budgets and programs. Only such an agency can break through the interdepartmental impasses, and take on the challenge of coordinating such a cross-cutting file.
3. ***Design a transparent, fair and effective Large Final Emitters system*** with the dual objectives of protecting environmental integrity and promoting a low-carbon future. The cornerstone of the Plan could fail if Natural Resources Canada fails to include key design elements: reporting transparency for industry, provisions beyond emission-intensity to ensure targets are achieved, safeguards against double counting, commitment to halt the shifting responsibility from industry to taxpayers. Management of the large final emitters system should be moved to Environment Canada or the Prime Minister's Office if Natural Resources Canada is unable to promptly demonstrate a commitment to a system with environmental integrity and fair burden sharing.

⁶ UN Framework Convention on Climate Change. 2003. *Counting Emissions and Removals: greenhouse gas inventories under the UNFCCC*. www.unfccc.int

⁷ Prime Minister Paul Martin met with David Suzuki, chair, and Jim Fulton, Executive Director, of the David Suzuki Foundation to discuss how Canada can advance *Sustainability Within a Generation*. Mr. Martin has spoken publicly about policies that can advance the goals in this new David Suzuki Foundation book authored by David Boyd (2004).

⁸ Prime Minister Paul Martin. April 15, 2004. Speech to municipal, business and community leaders. Halifax

⁹ Since the last election alone, Canadian exports of high value-added goods (machinery, autos and consumer goods) has declined 12 per cent. Source: Stanford, Jim. May 10, 2004. *The Northern Tiger's a Kitten*. Globe & Mail.

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4. ***Renew the principle of equitable burden sharing*** that threatens to be fundamentally violated by the rapid growth of emissions in key sectors (oil and gas, electricity, transportation) shifting the burden unfairly onto other regions, sectors or from industry to taxpayers. Provincial, territorial and federal governments agreed to this principle in the wake of signing the Kyoto Protocol.
 5. ***Contain Canada's major drivers of climate change***: electricity, oil and gas production and extraction, and transportation. This involves advancing efficiency, renewable energy and sustainable transportation as per Principle 6. The success of these agendas, nevertheless, is influenced by the price of fossil fuel which is highly subsidized and excludes external costs. It is, therefore, important to reduce fossil fuel subsidies, tie existing subsidies to performance-based improvements in efficiency, and support, through market signals, an industrial transition towards renewable energy and efficiency.
 6. ***Advance efficiency, renewable energy and sustainable transportation***. This is largely the corollary of containing the major trends, Principle 5. It involves integrating economic instruments and voluntary measures around core smart regulations and standards. Priorities include comprehensive and regular updating of standards for equipment, appliances, machinery and buildings, and industrial strategies for fuel-efficient automobile manufacturing and renewable energy development.
 7. ***Design measures to support deep emission reductions***, and also achieve the Kyoto target. Scientific evidence shows reductions in the order of 50% before the middle of the century are necessary to prevent dangerous climate change. A deep emission reduction target also helps inform a sophisticated industrial strategy. Canada should soon adopt a deep emission reduction target and develop a long-term implementation plan.
 8. ***Assess opportunities based on efficiently sustaining economic activities***, rather than sustaining energy consumption. The current Plan looks at general emission reduction targets relative to a somewhat arbitrary forecast of emissions growth and assumes energy is used for its own sake. A superior approach is energy end use analysis. This involves forecasting the activities that will take place in our society and economy and then calculate emissions based on a realistic deployment of efficiency, conservation and renewables and reduced conventional energy.
 9. ***Consult on measures in a timely manner that fairly engages stakeholders***. Consultations must focus on "how" to make emission reductions not "if." The practice of consultations intentionally or unintentionally delaying implementation must end. Focused, timely consultations are needed. Processes must equitably include NGO and independent climate and sustainable energy analysts.
 10. ***Take leadership – this is the single most important consideration*** in developing and implementing the climate protection and sustainable energy agenda in Canada. Prime Minister Paul Martin has a rich appreciation of climate change and a vision for an innovative 21st century economy. While some progress is possible regardless, the Prime Minister's leadership will determine the extent to which a really successful and visionary Plan is developed and implemented to achieve Canada's Kyoto target and prevent dangerous climate change.

Introduction: Canada, Canadians & Climate Change

If there is one industrial country that should be compelled for selfish reasons to implement an effective plan to achieve its Kyoto target, it is Canada. Canada is disproportionately dependent on industries that require healthy natural ecosystems, including agriculture, fishing, forestry, tourism, and shipping. The implications of a changing climate to water security, human health, and our communities and economy are profound.

Last year alone, Canada was devastated by one multi-million dollar “natural” disaster after another: the central Canadian heat wave and extensive smog season, Prairie drought, Atlantic hurricane, Western Canadian wildfires, massive West Coast floods, the largest insect infestation in North American history in British Columbia. One of the world’s most threatened regions from climate change, the Arctic, is home to the Inuit whose cultural existence is threatened with extinction under a gradually changing climate. The fingerprint of climate change is increasingly clear in these ecological changes and the rising frequency and intensity of these weather events.

Canadians identify with the environment and feel a sense of global responsibility to protect the climate. In the highly contentious ratification debate, more than 80% of Canadians consistently supported ratification of the Kyoto Protocol.¹⁰

If there is a world leader anywhere who understands the magnitude of climate change impacts on Canada and the planet, it is Canada’s Prime Minister. As environment critic leading up to the Earth Summit, Paul Martin closely studied climate change and energy and concluded in a Liberal policy statement: “We can begin by pressing for an international convention to reduce carbon dioxide emissions by at least 20 per cent. We should set an example by exceeding that target at home.”¹¹ Moreover, the Prime Minister’s interest in innovation, urban renewal, creative policy design, and transformative change could put Canada back in a position of leadership in global environmental security.

Canada is still moving, however, in the opposite direction and a growing body of research, including analysis by the Conference Board of Canada, the United Nations, and the World Economic Forum, confirms Canada’s environmental performance is failing.¹² Climate protection and sustainable energy are key areas of non-performance.

Ten Principles: Turning challenge into opportunity

1. Take advantage of smart regulation

Canada has overlooked the diversity of policy instruments essential for developing a sustainable energy agenda and implementing Kyoto. Under pressure from industry stakeholders in the “old economy”, Canada has relied on voluntary programs and spending. While both of these tools should be part of an overall strategy, voluntarism and spending on their own are a crude, expensive and ineffective approach.

The OECD recently concluded that the “environmental effectiveness of voluntary approaches is still questionable.” The report found, “the economic efficiency of voluntary approaches is generally low.”¹³

Ironically, a testament to both the inadequacy of the Canadian approach and the strength of the drivers, are trends over the last couple of decades. As voluntary programs have been deployed, emissions have

¹⁰ Consistent polling by Ekos during the Kyoto Ratification debate.

¹¹ Martin, Paul. 1992. *The Environment: A Liberal Vision*.

¹² Porter, Michael et al. 2001. *The Global Competitiveness Report 2000*. New York: Oxford University Press; Conference Board of Canada. 2003. *Performance and Potential 2003-04: Defining the Canadian Advantage*.

¹³ OECD. 2003. *Voluntary Approaches for Environmental Policy: Effectiveness, Efficiency and Usage in the Policy Mixes* OECD

actually accelerated. In the previous decade, Canada's emissions increased six per cent per cent, whereas, from 1990 to 2000, emissions increased almost twenty per cent.¹⁴

The federal government's soon-to-be defunct flagship industry program showcases the failure of voluntary measures. While not without successes (e.g. strengthening inventory capacity, demonstrating best practices) the Voluntary Challenge Registry was fundamentally about reducing industrial emissions which rose 24 per cent between 1990 and 2000.¹⁵ Only one-quarter of the participants in the VCR actually reported their emissions by the prescribed reporting date and almost half of the companies accounting for industrial emissions ignored the program completely.

The demise of the Voluntary Challenge Registry should foreshadow an erosion of interest in voluntary measures to achieve emission reductions, and an increased commitment to regulation as the most effective policy instrument. Thoughtfully designed regulation is the most important instrument. It is cost effective and environmentally and socially effective.

In a recent C.D. Howe Institute *Commentary*, economist Mark Jaccard similarly finds the voluntary approach to greenhouse gas emission reduction is "environmentally ineffective and economically inefficient." Instead, he and his engineering co-authors Nic Rivers and Matt Horne state: "We, therefore, propose an alternative policy package that includes some command and control regulations and a continuation of some voluntary initiatives, but is dominated by sector-specific, market-oriented regulations."¹⁶

Regulation has enabled Canada to virtually eliminate ozone-depleting substances, cut sulphur emissions in Eastern Canada by more than half, and put catalytic converters on every car in the country. In each case the net benefits far outweighed the net costs, and the transition happened more rapidly and at much lower cost than industry opponents forecast. In numerous occasions, replacements and process changes are less expensive to manufacturers (and consumers) than the original products and processes (*see box: "Industry underestimates innovation."*)

**Industry underestimates innovation
Regulation cost-effectively meets objectives**

During the debate around the Montreal Protocol on ozone-depleting substances, industry argued that banning CFCs would cause 20-40 million deaths annually due to the "collapse of refrigeration" and 5 million additional children's deaths due to lack of refrigerated vaccines for immunization (Maduro and Schauerhammer, *The Holes in the Ozone Scare*, 1992) A Fraser Institute book suggested that "more people would die from food poisoning as a consequence of inadequate refrigeration than would die from depleting ozone." (Block, *Economics and the Environment*, 1990)

Car manufacturers in North America said the need to substitute other chemicals for CFCs would raise the price of air-conditioned automobiles by between \$650 and \$1,200. The current estimated cost of the substitution is as low as \$40 per vehicle.

The switch from CFC-based propellants to substitutes reduced industry costs by as much as 80%, saving U.S. businesses and consumers over \$1 billion, according to the World Resources Institute. Former users of CFC-based solvents have also experienced cost savings by switching to more environmentally benign alternatives. (Cook, 1996).

Cost-benefit analyses by Environment Canada and the United States Environmental Protection Agency show that benefits outweigh costs by a ten-to-one ratio. Canadian consumption of ozone-depleting chemicals has fallen an impressive 95% since 1987.

¹⁴Jaccard, M. et al. 2004. "The Morning After: Optimal Greenhouse Gas Policies for Canada's Kyoto Obligations and Beyond." *Commentary*. CD Howe Institute

¹⁵ Bramley, Matthew. 2002. *The Case for Kyoto: The Failure of Voluntary Corporate Action*. Pembina Institute and the David Suzuki Foundation.

¹⁶ Jaccard et al. *ibid*.

Regulation can be complimented by other effective public policy tools such as consumer and business incentives/disincentives, broader ecological fiscal reforms such as tax shifting, as well as social marketing. An integrated approach, including a variety of policy instruments to achieve synergies is ideal.

The one-tonne challenge, for example, would be better integrated broadly into a package that includes regulations and incentives. Energy Star standards should become the bare minimum for appliances and equipment sold in Canada. Individual Canadians should be educated and incented through the One Tonne Challenge to buy the *next* cutting-edge technology, driving consumer demand and getting sufficient market penetration so that the standard can be raised without disrupting the marketplace or the manufacturer.

The failure to use the most effective policy instrument, regulation, combined with generous direct and indirect subsidies to the fossil fuel industries, compromises the market opportunities for many new technologies.

Recommendation: The Plan needs to move beyond voluntary programs and spending to take advantage of a whole range of other policy instruments that would allow dramatic reductions in greenhouse gas emissions. Most importantly, this involves smart regulations and standards in almost every sector of the economy. It also includes ecological fiscal reform, incentives and disincentives, spending, public education and outreach, mandatory targets for federal government procurement. A well-designed and integrated public policy approach generates synergies.

2. Establish central implementation agency

The current machinery of government is unable to effectively drive Kyoto implementation in the direction of sustainability. It has fundamental design limitations. There are tensions and conflicting mandates between the two lead departments, Environment Canada and Natural Resources Canada. The latter is preoccupied with advancing the fossil fuel and nuclear agendas, sidelining renewable and energy efficiency. Not perceived to be a department with economic/industrial development experience, Environment Canada is not in a position to develop and carry out an innovative industrial agenda

Neither has the authority to integrate and harness the immense opportunities in transportation, fiscal reform, government purchasing, industrial innovation, regional development, etc. The engagement of numerous other departments is critical for successful implementation.

Inadequate coordination and continued interdepartmental miscommunication will result in continued greenhouse gas emission growth, and a failure to improve the efficiency of the Canadian economy and take advantage of innovative, sustainable energy opportunities.

Canada Talks 21st Century Economy Other Countries are Building It

While Canada is talking about building the “21st Century economy” and supporting “technological innovation,” other countries are doing it. Wind power is massively expanding in UK, Germany, Spain and the US. Japan and Europe are supporting the development of highly efficient automobile manufacturing capacity. Solar thermal hot water capacity is proliferating in Japan, Germany, Greece, Israel, China, and the US. Highly efficient appliances and buildings have become the norm in much of Europe and California.

Performance standards and regulations have been central to advancing these technologies. And so has the innovative use of taxes.

In numerous European countries, the tax system has been used to send price signals to the market to reduce “bads”, particularly greenhouse gas emissions, and invest in social and environmental “goods”. The OECD found that there are positive effects on GDP and employment if revenues from environmental taxes are used to reduce payroll and capital taxes (OECD. 2001. *Environmentally Related Taxation in OECD Countries: Issues and Strategies*). As finance minister, Paul Martin was so intrigued with ecological fiscal reform, he urged a dozen of the country’s largest environmental groups to establish the Green Budget Coalition.

Currently there is no accountability for ensuring that departments that have accepted climate change/sustainable energy commitments in Action Plan 2000 or subsequent budget announcements will deliver the tonnes, nor in some cases have the tonnes even been identified. In many cases, there is a real risk that money has been misspent because of the lack of due diligence. This could become clearer when the long overdue self-assessment reports on Action Plan 2000 are eventually published.

Furthermore, there is no consistent or coherent effort to look at the overall government agenda, let alone supposedly Kyoto-related programs through the climate lens.

Recommendation: Canada needs a lead agency to effectively implement Kyoto, develop a sustainable energy strategy, and ensure there is an integrated approach that realizes the synergies in laying the foundation for a 21st Century Economy. Such an agency would be given a clear mandate from the Prime Minister and respond to the Prime Minister's Office-Privy Council Office. The agency would need the authority to engage departments in carrying out specific responsibilities related to the Plan, including provision of analysis by both Environment Canada and Natural Resources on strategic opportunities.

Working closely with Treasury Board, this agency would ensure departments are accountable for delivering on their commitment to reduce greenhouse gas tonnage. The agency would ensure the Canadian government looks through a "Kyoto lens" in its overall agenda, and demands due diligence for those programs that explicitly identify Kyoto implementation as a criterium for operationalization.

Prominent and respected experts with proven track records in sustainable energy and public policy would lead it. The government has established something similar, the Cities Secretariat, which involves a strong and effective Parliamentary Secretary on cities and a widely respected former premier of BC.

3. Design a transparent, fair, and effective system for large emitters

The largest and most significant policy measure in the Plan is a system of negotiated agreements with large final emitters combined with a system of emissions trading to reduce emissions by 55 MT.

Unfortunately, this target is too small considering some of the easy reductions. For example, the Ontario government's commitment to close all coal-fired power plants could result in a 38 MT reduction alone.

Unfortunately, regardless of how conservative the target is, a number of decisions and developments seriously compromise the integrity of the LFE system. Industry has been promised that if reductions cost more than \$15 a tonne, the government would pay the surplus. This decision shifts the liability for reducing greenhouse gas emissions from Canada's largest greenhouse gas polluters to taxpayers.

Because the government plan counts emission reductions from industry under numerous other measures in the plan (and has already spent heavily in some of these areas), there is a real risk that government and industry double-count emission reductions, failing to genuinely meet the 55 MT target on its own, and the overall target in the Plan.

Rather than negotiating absolute emission reductions, the government has to date conceded to industry pressure to negotiate "emission intensity" targets. Atmospheric stability and our international Kyoto target, however, are not influenced by the amount of greenhouse gas emitted per unit of production. The climate is affected by net emission reductions (or increases). So, if output is much higher than expected, the intended emission reduction targets could be overshoot, forcing taxpayers to buy emission reductions.

Industry is resisting reporting anything more than greenhouse gas emission levels, concealing production output numbers from the public. This will make it impossible to assess progress on the emission intensity target. The lack of transparency makes an inadequate indicator – emission intensity – almost meaningless.

The first emission intensity target the government established was with the oil and gas industry at a level not more than 15 per cent below projected business-as-usual forecasts for 2010. Now, Natural Resources Canada appears to be making this target the default for all sectors. A 15 per cent improvement in emissions intensity over business as usual is woefully inadequate to meet targets in the Plan without double counting. It also fails to put Canada on track to genuinely protect atmospheric stability – emissions

have to be reduced by 50 per cent by at least mid-century (see science in *Principle 6 Implement Kyoto with long-term vision*). The 15 per cent intensity target for the oil and gas sector is particularly inappropriate given its growth in emissions – already more than 50 per cent above 1990 levels. Canada has one of the most greenhouse gas intensive oil and gas industries in the world. Extracting and refining tar sands oil is so energy intensive it produces two-and-a-half times the greenhouse gas emissions as conventional oil. Ultimately, this single agreement undermines the measure and the entire plan.

President George Bush popularized the concept of “emissions-intensity” after the US withdrawal from international efforts to reduce emissions. It has been discredited internationally on the grounds that while the indicator suggests improved performance, there is no guarantee that emissions will be reduced. Alberta Premier Ralph Klein imported the concept to Canada, and under pressure from Klein and the fossil fuel industry it now underpins the cornerstone of Canada’s climate change plan. To protect ecological integrity, it is important that the emissions intensity indicator gets no further legitimacy within the international framework, particularly as a yardstick for performance in future commitment periods.

Industry is currently advocating the weakening of targets in exchange for promises for future reductions or research investments. This form of “deficit financing” has been rejected by government and industry in fiscal management; borrowing from the future to resolve a growing ecological, economic and social catastrophe that demands immediate mitigation, is not acceptable.

Natural Resources Canada has been moving very slowly and only intends to have the LFE system in place by 2008 in time for the beginning of the 2008-2012 Kyoto period. The European Union trading regime will start in 2005, giving companies valuable experience in trading and an incentive to reduce emissions.

While Natural Resources Canada has acquired considerable insight into trading, the effectiveness and integrity of the system is threatened because of design biases. This, in turn, will undercut the entire Plan.

Recommendation: Natural Resources Canada must promptly demonstrate its commitment to a fair and effective Large Final Emitter system with environmental integrity, or management and design of the system should be given to another institution such as the Privy Council Office or Environment Canada. A good system would include the following design considerations:

- *An additional indicator that addresses the fundamental objective of Canada and the world’s climate protection efforts, i.e. absolute targets, should be used alongside emission intensity. Under such a system, a company or a sector would have an absolute target as well as an emission intensity target. If production were rising much higher than forecast, then the emission intensity target would be adjusted upwards. Emission intensity would also be important in developing an absolute target.*
- *For emission intensity to have any relevance, companies must report production output as well as greenhouse gas emissions. Without transparent reporting, it is impossible to gauge progress.*
- *The environmental integrity of the system must be protected, notably: safeguarding against double-counting reductions that are already allocated (and subsidized by taxpayers) somewhere else in the plan; ensuring that business-as-usual reductions are not counted as reductions under the LFE system; ensuring that de facto subsidies to inefficient, carbon-intensive sub-sectors are not established, incenting their continuation (e.g. if weaker emission intensity targets are set for coal-fired utilities than natural gas or wind utilities, this establishes a bias for continued use of an inefficient, carbon-based source of electricity).*
- *The LFE system must protect against shifting responsibility from industry to the taxpayer, and respect the cardinal principle agreed to by provincial, territorial and federal governments, i.e. that no region is expected to bear an unreasonable burden. If this means the oil and gas industry’s target is re-negotiated because of the unreasonable burden on other regions, this must be considered.*
- *Move promptly to put the LFE system in place to enable companies to successfully meet their targets, familiarize themselves with trading, as European countries also gain the experience.*

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- *Lastly, the federal government should confirm that it will not follow the current US administration's lead in advocating an "emission intensity" yardstick in international commitment periods after the Kyoto Protocol. This approach would undermine the scientifically-established urgency of reducing greenhouse gas emissions.*

4. Renew the principle of equitable burden sharing

Canada is threatening to violate a fundamental principle agreed to by federal, provincial and territorial governments about Kyoto implementation: equitable burden sharing.

Because of the endless concessions, and continued federal subsidies granted to the oil and gas sector, 47 per cent of the growth in Canada's emissions has come from one provincial jurisdiction alone – Alberta.¹⁷ For Canada to meet its target under the current emissions trajectory with the concessions extracted from the oil and gas industry, other provinces, sectors of the economy, and taxpayers would be forced to accept a much greater share of the responsibility.

From the perspective of sectoral burden sharing, inadequate regulations and standards are encouraging the rapid growth in emissions from the electricity and transportation sectors, as well as oil and gas. Once again, without demanding more from these sectors, the burden will be shifted to other sectors.

While allowances have to be taken into account for regional (e.g. highly energy-intensive industries) and sectoral circumstances (e.g. cost per tonne to reduce emissions, competitive disadvantage with trading partners), shifting responsibility this disproportionately is unreasonable.

If regional and sectoral burden sharing are inequitable and the plan insufficiently creative and robust, taxpayers are potentially at risk of absorbing the shortfall by purchasing credits internationally.

Ultimately, balancing off sectoral, regional, private sector-government-individual burden is important. Under the current Plan, any analysis of burden sharing shows inequity.

Recommendation: In the next generation of the Climate Change Plan for Canada, the commitment to the principle of equitable burden sharing must be renewed. The uncontained growth of the major drivers in emissions (oil and gas, electricity, transportations) threatens to shift the burden to other regions or sectors or from industry to taxpayers.

5. Contain Canada's major drivers of climate change

Energy use and greenhouse gas emission trends are the litmus test of climate protection and energy innovation. Canada has one of the industrial world's least energy efficient and most carbon intensive economies. Our economy is 33 per cent less energy efficient than the United States.¹⁸ Canada's emissions are also growing faster than any other major industrial country. Canada's emissions grew 19 per cent between 1990 and 2001, while emissions in the United States and Japan grew respectively 13 per cent and 9 per cent. European Union emissions shrank by two per cent.

Germany's success can in part be attributed to the closing of inefficient industries in former Eastern Germany and the UK's performance is, in part, due to a serendipitous move to phase out subsidies to coal and move to natural gas. Nevertheless, the importance of these developments is overestimated. These countries have integrated, diverse, creatively-designed policies to encourage innovation and reduce emissions in every sector of their economies, and regulation has been central.

¹⁷ Olsen, Ken et al. 2003. *Canada's Greenhouse Gas Inventory: 1990-2001*. Environment Canada: Greenhouse Gas Division

¹⁸ Canada ranks 27 out of 29 OECD nations in terms of energy use per capita. Canadians annually consume more 6.19 tonnes of equivalent per capita. This is almost double the OECD average of 3.18 tonnes of oil equivalent per capita, and more than five times the world average. Only Iceland and Luxembourg use more energy per capita than Canadians. See Boyd, David. 2001. *Canada vs the OECD: An Environmental Comparison*. University of Victoria Eco-Chair of Environmental Law & Policy.

Change in Aggregate GHG Emissions 1990-2001 in leading industrial countries

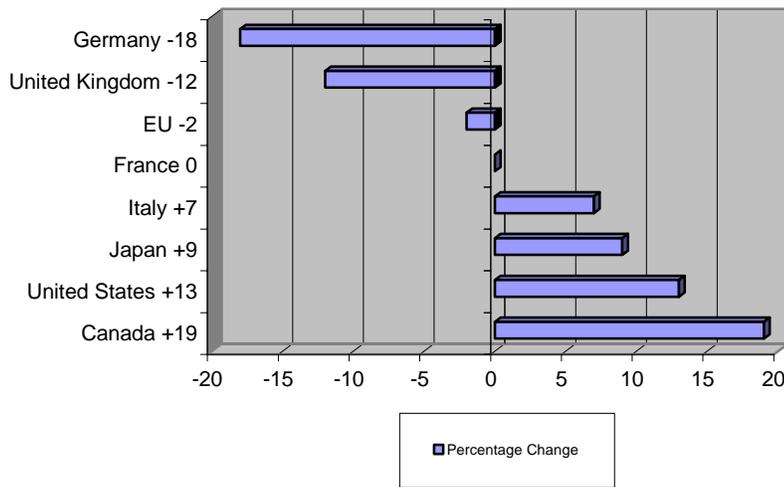


Figure 2: Source: UNFCCC. 2003. *Greenhouse Gas Inventories*.

In strengthening Canada's Plan, it is critical to analyse where the growth is happening and then contain it.¹⁹ (See Figure 3)

The electricity sector's 42 per cent growth in greenhouse gas emissions is largely due to increased use of coal and natural gas. The centralized approach to electricity production is hugely inefficient, and demand is driven by one of the industrial world's least efficient residential, commercial and institutional building stocks, inefficient industrial operations, and low standards for appliances and equipment. The failure to internalize many of the costs of fossil fuels (esp. human health) and the significant direct and indirect subsidies make fossil fuels relatively inexpensive. To address this challenge, demand-side management and renewable energy development are key priorities in the recommendation: *Develop a sustainable energy agenda*.

The petroleum industry's 40 per cent growth in emissions is from rapid expansion of natural gas, offshore deposits, and the tar sands. A lot of this growth is export led: 139 per cent increase in natural gas exports and 309 per cent increase in oil exports over this period. Canada has become the world's largest source of foreign oil and gas for the world's largest energy consumer – the United States. Oil from tar sands is the world's worst oil from an atmospheric perspective. Extracting and refining tar sands oil is so energy intensive it produces two-and-a-half times the greenhouse gas emissions as conventional oil. Current projections have tar sands being the single largest addition to Canada's greenhouse gas emissions.²⁰ Without the immense direct and indirect subsidies, federally and provincially, as well as large-scale royalty reductions, the massive growth of petroleum production and greenhouse gas emissions would not be occurring. The current government's explicit support for continued expansion of oil and gas in the tar sands, offshore and the Arctic does not bode well for reversing this trend and implementing Canada's Kyoto plan. This support only adds fuel to the climate crisis.

¹⁹ References to Canada's greenhouse gas emission profile are drawn from the most recent 2003 Canadian Government inventory. Projections to present are based on 1.6% annually average growth rate. Olsen, Ken et al. 2003. *Canada's Greenhouse Gas Inventory: 1990-2001*. Environment Canada: Greenhouse Gas Division

²⁰ Price, Matt & John Bennett. 2002. *America's Gas Tank: the high cost of Canada's oil and gas strategy*. Natural Resources Defense Council and Sierra Club of Canada

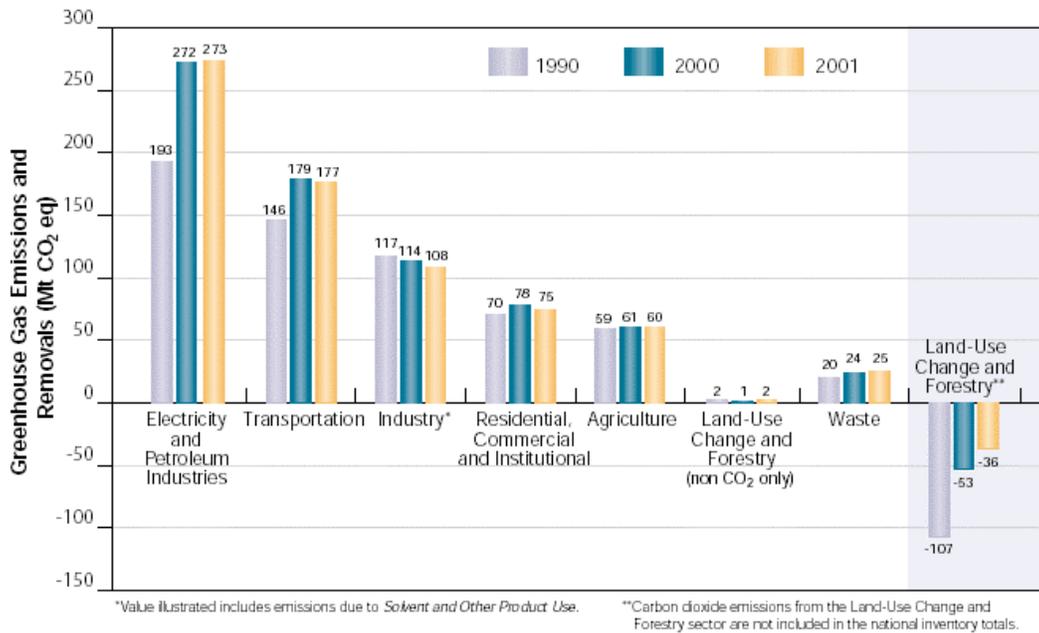


Figure 3 : Source: Environment Canada. 2003. *Canada's Greenhouse Gas Inventory: 1990-2001*

More importantly, a long-term economic, social and ecological analysis would reveal a need to slow production to protect more of the country's rich oil and gas resources for future generations, get a greater return on investment (as oil prices climb), make a smoother transition towards renewable and hydrogen-based energy, and also protect the atmosphere.

Direct and indirect subsidies need to be phased out. And in the mean-time existing subsidies should be directly tied to performance-based targets in efficiency improvements. The exclusion of the immense social and environmental costs and the generous subsidies create an artificially low price which is a major obstacle to the uptake of sustainable energy technologies. As many conventional petroleum companies are recognizing, their strategic stake is in energy. If the market shifts towards sustainability, then these companies will shift from fossil fuels to renewables and efficiency. The government has played a powerful role in fostering the growth of the oil and gas sector. Canada must shift its priorities towards sustainability.

The transportation sector's 21 per cent increase in emissions has a number of drivers. The growth in the absolute passenger vehicle fleet is combined with a shift from light duty cars to light duty trucks (SUVs, mini vans, pick ups) which, on average, emit 40 per cent more GHGs per kilometre. A shift in freight transport from rail to road is also a significant factor. Moving an item by truck over a given distance requires almost four times more energy, compared to moving it by rail.²¹ There is rapid growth in heavy-duty diesel and gasoline truck fleets and net emissions increases of 57 per cent and 31 per cent respectively in those categories. Voluntary and weak fuel efficiency standards, inadequate investment in public transit, significant road and highway expansion, and an unequal playing field between freight and rail are all factors in the rapid growth of emissions in the transportation sector. To address this challenge, a sustainable transportation strategy is an important priority in the recommendation: *Develop a sustainable energy agenda.*

²¹ Canadian National based on data from Transport Canada and Federal Railroad Administration: *CN: Committed to a Clean Environment*. 1999. available at www.cn.ca

Recommendation: The Plan must explicitly determine an approach to slow and reverse the major drivers of growth in Canada's greenhouse gas emissions: electricity, oil and gas, passenger and freight transportation. The recommendations in "Sustainable energy in an innovative economy" address these drivers: conservation and efficiency, renewable energy and sustainable transportation. The extent of their success, nevertheless, is influenced by the price of oil, gas and coal which are highly subsidized and externalize public health and environmental costs. It is important, therefore to phase out subsidies to the fossil fuel industries, tie ongoing subsidies to performance-based improvements in efficiency, and send positive messages to the marketplace that indicate the shift towards sustainability which should engage the fossil fuel industries.

6. Develop an innovative sustainable energy agenda

Because Canada has one of the world's most inefficient and energy-intensive economies, and most underexploited low-impact renewable energy resources, the opportunities for deep emission reductions are immense. Developing a meaningful sustainable energy agenda is part of an industrial vision that can strengthen Canadian competitiveness, protect human health and renew our cities.²²

There have been numerous publications outlining specific policy options by numerous organizations, trade associations, the national process. Success in advancing these policy priorities will be critical in containing the growth of the major drivers in Canada's greenhouse gas emissions.

A conservation and efficiency agenda

Rather than the traditional focus on supply to address environmental and economic objectives in the energy sector, it is critical to examine how to reduce demand through efficiency (technological improvements) and conservation (consumer behaviour). A review of U.S. demand-side management programs showed that it cost the equivalent of four cents (Cdn) per kilowatt-hour to reduce demand in the electricity sector.²³ It costs more than six cents per kilowatt hour to generate electricity supply in Ontario.²⁴ The federal government's role in setting performance standards can play a decisive role in helping provincial and territorial governments literally keep their lights on.

Distributed heat and power

Distributed and off-grid, heat and power technology can play an important role in reducing greenhouse gas emissions and is significantly under emphasized in the current Plan. These small-scale cogeneration facilities can be highly efficient in commercial, industrial and residential sectors. Policies supporting cogeneration should be designed to reinforce a movement towards higher density living, e.g. an economic incentive could be tied to the development of an effective community energy plan.

It is critical that promotion of small-scale cogeneration does not open the tap for large-scale, centralized electricity utilities. This would compromise valuable gas reserves and drive up demand, increasing prices. Natural gas exploration is still very environmentally destructive, and, as a hydrocarbon, a transition fuel.

Since the 1970s, the state of California's investments in efficiency and conservation have provided enough energy savings to defer the construction of 20 large power plants, saving the state's energy consumers billions of dollars in infrastructure costs, and significantly reducing air pollution and

²² The framework and delineation of technological capacity to achieve this vision, Canada's Kyoto target and a 50 per cent reduction by 2030 are mapped out in: Torrie, Ralph et al. 2002. *Kyoto and Beyond: the low emission path to innovation and efficiency*. David Suzuki Foundation and Climate Action Network-Canada

²³ Eto, J et al. *Where did the money go? The cost of the performance of the largest commercial sector DSM programs*. The Energy Journal, vol 21, no 2 (2000)

²⁴ Independent Electricity Market Operator. 2003. *The Ontario Wholesale Electricity Market: Year in Review 2003-2003*.

greenhouse gas emissions.²⁵ Over the next decade, California's energy efficiency programs expect to save the state approximately \$8.6 billion, and prevent the construction of seven new power plants. Californians use 40 per cent less power per capita than the rest of the U.S. While per capita demand has grown across the U.S. by 50 per cent since the late 1970s, Californian consumption is roughly steady.

One of the easiest ways to close the growing Kyoto gap is to ensure that the next generation of capital investments by individual and private sector consumers is for the most energy efficient products that can be practically put into the market place. Every day in Canada, millions of dollars worth of appliances, building components such as lighting, doors and windows, vehicles, office equipment and machinery are sold. The technology is outdated before the goods are even unwrapped. Comprehensively and regularly updating efficiency standards in all of these categories is critical, starting with the everyday products consuming the most energy.

The federal government's new conservation program – the one tonne challenge – needs to be part of an integrated program involving standards and incentives and other policy instruments to achieve synergies. Encouraging consumers to purchase a high efficiency furnace or Energy Star air conditioner (when those standards should be the minimum for the marketplace) compromises the program's potential. Ideally, consumers are provided with an economic incentive to purchase the next cutting edge technology to drive market demand so that next level of efficiency soon becomes the new performance standard. Working with manufacturers to develop the most constructive incentive programs, and keeping them apprised of ongoing plans to regularly update standards is critical to ensuring the most efficient products are in the marketplace.

While the federal government has somewhat less control over commercial, institutional and residential buildings, it can lever provincial and territorial engagement and play an active role in its own operations. As mentioned, the standards for significant building components (doors, windows, lighting, major appliances, equipment) are often in the federal purview. The CBIP program shows it is possible to achieve a 40-50 per cent improvement in energy efficiency over the model national energy code for new commercial buildings with virtually no increase in cost.²⁶ Innovative fiscal incentives and standards can be used to maximize the use of waste heat, solar thermal, fuel cell and combined heat and power systems in residential and commercial buildings.

Well-developed standards enable consumers to offset increased costs through savings in energy bills.

Programs such as the retrofitting of commercial and residential buildings are exemplary measures that must be built upon.

A renewable energy agenda

The fastest growing source of new energy in the world is renewable, led by wind which has grown at a rate of above 40 per cent per year during the past five years. Renewable energy technologies are technologically mature and in many locations cost-effective generation options. Unfortunately, while Canada was once a pioneer in advancing low-impact renewables, today programs, policies and deployment are more advanced in much of the industrial world and some of the developing world.

Canada must use a range of policy instruments to take advantage of this growing domestic and international market opportunity. Current support is inadequate to reap the benefit of increased investment, and in turn domestic manufacturing and job creation. It is not beyond the federal mandate to establish renewable energy targets. The European Union, for example, has a goal to generate 12 per cent of its energy from renewables by 2010 and 20 per cent by 2020. Canada should establish a similar target.

²⁵ All California electricity data from: Etcheverry, Jose. 2003. *Bright Future: Avoiding Blackouts in Ontario*. David Suzuki Foundation.

²⁶ Torrie, Ralph. 2002. *Comparison of Climate Change Plan for Canada with Kyoto & Beyond* (briefing note to Climate Action Network). Torrie-Smith Associates

It is imperative to increase the support of the Wind Power Producer Incentive for wind developers, and extend a similar incentive to other renewable energy sources. Various fiscal incentives can help kick start deployment, for example, GST rebates or tax credits on capital investments. The federal government can be an enabler and help leverage provincial government engagement in the form of renewable portfolio standards (targets), and guaranteed prices for renewable energy (the very successful feed-in laws of Europe).

The rapid growth of wind power clearly illustrates how timely and well-designed policy and fiscal incentives can result in the quick development and adoption of renewable energy technologies. There are, nevertheless, a variety of other low-impact renewable technologies that have an important role to play in an innovative, sustainable economy, for example: solar thermal, ground-source heating, solar photovoltaics, micro-hydro, biomass and geothermal.

As the bulk of energy investment and subsidies in Canada continues to be absorbed by the fossil fuel and nuclear sectors, renewable energy developers face a constant uphill struggle. The playing field needs to be tipped in favour of renewables to support an energy future that affords Canada a variety of co-benefits: improved air quality, economic innovation, energy security, job creation, reduced environmental costs, climate protection.

Canada enjoys an incredible comparative advantage over most other nations in both its amount and variety of renewable energy sources, its highly versatile workforce, and research and development capability.

A sustainable transportation agenda

While the burgeoning growth of emissions from oil and gas, and electricity are exceptional problems for Canada, reducing transportation emissions is a problem many countries confront. According to a 1997 World Bank study, supporting sustainable transportation infrastructure improves economic performance. It also greatly improves local air quality.

Fortunately, there are a number of illustrative success stories. Germany, for instance, has virtually flattened personal transportation emissions by consistently funding public and alternative transit infrastructure, including inter-city and suburban rail, through a variety of instruments, ensuring that there are options to get people out of their cars. The most decisive policy tool, however, in shifting transportation choices has been a significant increase in taxes on gasoline and oil (as well as natural gas and electricity). At the same time, there was a substantial decrease in payroll taxes by shifting the “ecotax” revenue into state pension budgets. Overwhelmingly, the public responded well to this ecological fiscal reform because it was clearly not a tax grab.

The most important priority in reducing *personal transportation* emissions is protecting people’s mobility through well developed public and alternative transportation options in urban areas. Stable funding to municipalities for public transit is the central policy instrument supported by other economic incentives like tax-exempt transit passes. A stable revenue stream would use a portion of the federal tax

Wind Energy Development: Select Countries

Country	Total Installed in 2003 (MW)	Cumulative Total end of 2003 (MW)
Germany	2,645	14,609
USA	1,687	6,374
Spain	1,377	6,202
India	408	2,110
China	100	568
Japan	272	686
Canada	81	317
World Total	8, 133	39, 294

During the past year alone, Germany created almost 800 per cent more wind energy capacity than Canada’s total to date.

Source: European Wind Energy Association, 2004

on gasoline. Investing in public transit can help stop urban sprawl, which in many parts of Canada, is the biggest reason for growing emissions in both electricity and transportation.

Improving fuel economy of passenger vehicles is absolutely critical. Canada's commitment to improve fuel economy by 25 per cent must include a suite of policies, central to which is regulation. Moreover, the priority for fuel-efficient passenger vehicles should become a Canadian industrial strategy.

The recommended standard for passenger cars has not changed since 1986, for light-trucks not since 1996. And current legislation has huge loopholes that exempt light-trucks and SUVs. (In fact, the federal government's failure to implement the 1981 Motor Vehicle Fuel Consumption Act means all these standards are voluntary.) Using existing technology, mid-size cars could be 50 per cent more fuel efficient and SUVs could be up to 70 per cent more fuel-efficient. The five per cent increase in cost would be made up in reduced spending on fuel.²⁷

An Integrated Industrial Strategy for Fuel Efficient Vehicles

A thoughtful, integrated public policy approach generates synergies. Meeting Canada's goal of a 25 per cent improvement in fuel efficiency should be an industrial strategy as well as environmental and human health priority. This is possible without compromising safety and performance. Building 21st century cars for a low-carbon 21st century economy can help revitalize and protect the auto manufacturing sector in Canada. The suite of policies would include:

- The central policy is mandatory fuel economy standards for passenger vehicles that guarantee Canada catches up to Japan and Europe, where 25 per cent efficiency improvement targets by 2010 have been established.
- Incentives for consumers purchasing fuel-efficient vehicles 25 per cent above the standard, to drive demand for greater innovation and reward leadership.
- Incentives for Canadian car manufacturers could include accelerated capital cost allowances for companies investing in fuel-efficient assembly line infrastructure.
- Educational materials targeted at consumers of fuel-efficient vehicles (because this constituency is likely to make further emission reductions in other parts of their lives).
- Incentives for municipalities and businesses to purchase fuel-efficient vehicle fleets 25 per cent above the standard to help drive demand for greater innovation and reward leadership.
- Mandatory targets for the federal government to purchase fuel-efficient vehicles to drive demand.

In the *freight transportation* sub-sector, it is important to level the playing field between rail and truck freight by pricing and taxation changes that include in the price of moving freight all the external costs such as highway damage, air pollution, public health and climate change. Moving an item by truck over a given distance requires six times more energy compared to moving it by rail. The use of fleet efficiency standards and incentives for freight truck manufacturers should be explored, along with improved training programs for drivers to enhance fuel-efficient driving practices, and regulated preventative maintenance programs like Quebec's PEP program.

²⁷ DeCicco, J., An, F., and Ross, M. 2001. Technical Options for Improving the Fuel Economy of U.S. Cars and Light Trucks by 2010-2015. American Council for an Energy-Efficient Economy. <http://www.aceee.org/pubs/t012.htm>

Recommendation: Take advantage of the untapped potential in efficiency, conservation, renewables and sustainable transportation. This is largely the corollary of containing the major trends in recommendation “Containing the major drivers of growth”. This will involve integrating economic instruments and voluntary measures around core smart regulations and standards. Priorities include comprehensive and regular updating of standards for equipment, appliances, machinery and building components and industrial strategies for fuel-efficient automobile manufacturing and renewable energy development. Investing in public transit and leveling the playing field between rail and road freight are priorities.

Economic Opportunities & Co-Benefits of Action

In 2002, the David Suzuki Foundation and WWF commissioned The Tellus Institute, a US-based energy policy and planning group, to conduct an economic analysis of key proposals in the Canada’s National Climate Change Process. (Bernow, Steve et al. 2002. *The Bottom line on Kyoto*. David Suzuki Foundation & WWF) Combined, these proposals would achieve half of the Kyoto target, and produce the following economic benefits beyond business as usual:

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

These policies would produce significant health and environmental co-benefits due to better air quality, improved public health, and reduce damage to infrastructure, private property and natural ecosystems upon which many industries depend. While Tellus did not calculate these co-benefits, other analysis shows that a mere 68 MT reduction in emissions (about half of what Tellus modeled) would yield approximately \$1.2 billion in avoided health damage alone. (Caton, Robert et al. 2000. *Clearing the Air*. David Suzuki Foundation.) It is critical to calculate the range of health and co-benefits from taking action.

Under a conservative implementation scenario, the federal government’s analysis and modeling group found the economy would be just 0.4 per cent smaller by 2010 with Kyoto than without .(Kyoto would reduce GDP growth over the decade to 29.5 per cent from 30 per cent.) This model concluded no province would suffer a GDP impact greater than 0.5 per cent over the decade, and some provincial economies would actually benefit, e.g. Ontario. (Government of Canada. 2002. *Climate Change Plan for Canada*, pp 63-67.)

Prior to Kyoto negotiations, similar conclusions were reached. The 1995 summary report from Informetrica stated: “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.” (Sonnen, Carl et al. 1995. *Impact of GHG Initiatives on the National and Provincial Economies*. Informetrica.)

Time and time again, legitimate economic analysis has shown that Kyoto implementation is economically viable and there are tremendous co-benefits.

7. Implement Kyoto with a long-term vision

The primary and ongoing obligation on all countries belonging to the United Nations Framework Convention on Climate Change, from which the Kyoto Protocol emerged, is to prevent dangerous climate change.²⁸ Article 2 states:

“The ultimate objective of this Convention... is to achieve... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”²⁹

This powerful statement recognizes the delicate balance of economic, social and environmental priorities. Yet, the ultimate objective remains *preventing dangerous climate change*. While there is not yet consensus on what precise level of atmospheric concentrations of CO₂ constitutes “dangerous”, it is a conservative estimate that reductions in the order of 50 per cent by around the middle of the century are necessary.

The British Royal “Commission on Energy & the Changing Climate” concluded a 60 per cent reduction in UK emissions (which are already far lower per capita than Canada’s) is realistic by 2050. This assumes “that emissions will eventually need to fall well below the 60 per cent level if carbon dioxide concentrations in the atmosphere are to be stabilized at a level which avoids the most severe impacts of climate change.”³⁰ The report also concludes that should the sensitivity of climate to CO₂ be at the higher end of the current range of estimates, greater reductions than 60 per cent by 2050 will be needed to avoid the more severe impacts. These conclusions form the basis of the United Kingdom “Energy White Paper” which maps out the framework for achieving 60 per cent reductions and has shaped the UK Climate Change Program.³¹

Countries like the UK, Germany, and Sweden with reduction targets of 40-60 per cent before the middle of the century have put climate protection into a broader agenda for economic revitalization, industrial development, improved air quality, and urban renewal. Their Kyoto implementation plans are not designed to meet only their Kyoto targets, but lay the foundation for much deeper emission reductions necessary to prevent dangerous climate change. This philosophical approach was already established before specific deep emission reduction targets were officially agreed upon.

While implementation is not unfolding without debate in these countries, the emission trends speak for themselves (1990-2001: UK, -12 per cent; Germany, -18 per cent; Sweden, -3 per cent; and Canada +19 per cent).

An obvious feature of these and other countries is their successful integration and diversity of policy instruments, and most notably the use of regulations and standards, to achieve reductions.

In Canada, long-term analysis would demonstrate the need for protecting much more of the country’s rich oil and gas resources for future generations, a greater return on investment, a smoother transition towards renewable energy and hydrogen-based energy, as well as preventing dangerous climate change.

While Prime Minister Paul Martin and Environment Minister David Anderson have both spoken publicly about the need for much deeper emissions reductions, there has yet to be a meaningful debate about this

²⁸ This includes all UNFCCC signatories such as the U.S., other industrial countries and developing countries.

²⁹ <http://unfccc.int>

³⁰ Royal Commission on Environmental Pollution. 2002. *Energy – the changing climate*.
<http://www.rcep.org.uk/energy.htm>

³¹ Government of United Kingdom. February, 2003. *Our Energy Future – creating a low-carbon economy*.
<http://www.dti.gov.uk/energy/whitepaper/index.shtml>

urgent priority. Moreover, the current short-term approach is reflected in the existing Plan which does not lay the groundwork for an innovative, low-carbon economy.

Recommendation: Design a Plan that enables Canada to reach its Kyoto target of a 6 per cent reduction below 1990 levels by 2010, and also establishes a foundation for the much deeper emission reductions necessary to prevent dangerous climate change.

Canada should begin a process to establish a deep emission reduction target consistent with our commitment under the UN Convention, the best available science and rooted in the precautionary principle. Consistent with other countries that have developed such targets, it would inform a broader agenda for economic revitalization, industrial planning, improved air quality, and urban renewal.

8. Start planning from an energy end-use perspective

The analytical starting point for strengthening the Plan should be an energy end-use analysis.³² This involves forecasting the activities in our society and economy into the future based on the growth in GDP, personal mobility, freight, population, etc. Emissions are then calculated by identifying how those activities can be supported in the most realistically efficient manner, e.g. greater efficiency, conservation and renewables and reduced conventional energy sources. The current Plan looks at general emission reduction targets relative to a somewhat arbitrary forecast of energy trends and thus emissions growth, and assumes energy (fuels and electricity) is used for its own sake.

To provide some insight into the problems with conventional energy analysis, it is useful to look historically at energy forecasts. As the graph below demonstrates, energy forecasters in the US (as well as Canada) completely failed to comprehend the ability of consumers to reduce direct energy use largely as a result of innovations in efficiency. (See figure 4) Had North America built according to the energy forecasters, we would have drastically over invested in unnecessary projects, leading to greater pollution, significantly greater greenhouse gas emissions, and gross economic inefficiency.

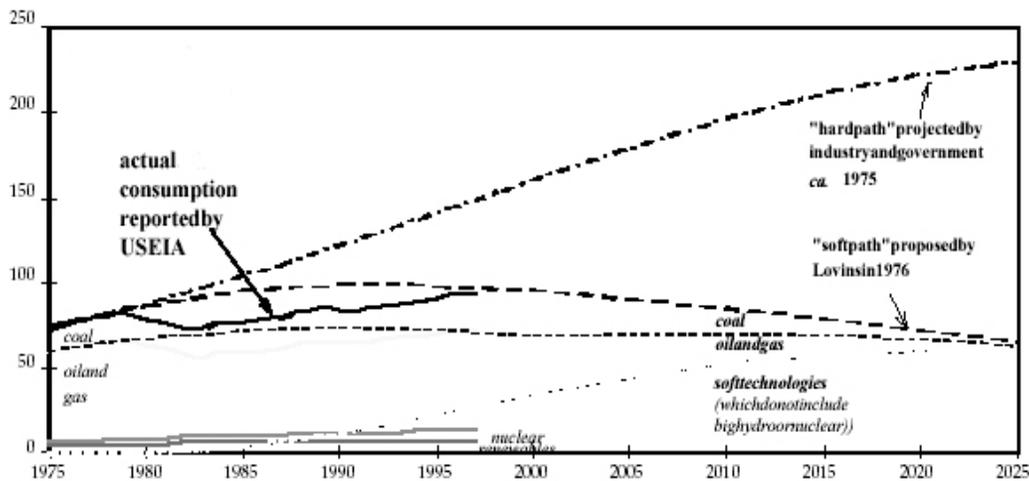


Figure 4: US Energy Consumption in Quadrillion BTUs per year
Source: Journal of International Affairs, Volume 53, Issue 1, 1999

³²A complete end-use analysis of the Canadian economy from 2004 to the Kyoto target and timeline and then 50% reductions by 2030 has been carried out by leading sustainable energy expert, Torrie, Ralph et al. *Kyoto and Beyond: the Low Emission Path to Innovation and Efficiency*. Published by David Suzuki Foundation and Climate Action Network-Canada.

Recommendation: The analytical starting point for the Plan should be an energy-end use analysis. The current Plan looks at general emission reduction targets relative to a somewhat arbitrary forecast of emissions growth and assumes energy is used for its own sake. A superior approach is forecasting the activities that would take place in our society and economy and then calculate emissions based on a realistic deployment of efficiency, conservation and renewables and reduced conventional energy.

Kyoto Implementation Criteria

In the next generation of the Plan, it is critical to subject individual policy instruments and suites of policy instruments to a criteria matrix to ensure the intended objectives will be met and/or maximized. A central agency in the Prime Minister's Office-Privy Council Office, as recommended, would be ideally positioned to develop and operationalize this process. While it is difficult to satisfy all of them, all of the time, the following are some key criteria to consider:

- **Efficacy:** Will the measure actually reduce emissions as purported? Has a full life-cycle analysis been conducted?
- **Cost:** While cost-per-tonne is a mandatory consideration, it is critical that costs are not defined in short, narrow terms. If the reductions intensify over time, and there are numerous co-benefits, higher cost *may* be appropriate.
- **Co-benefits:** Does the measure have co-benefits, particularly ones that dovetail with other government agendas, e.g. urban renewal, reduced air pollution and human health costs, biodiversity protection, job creation, technological innovation, regional development...
- **Broader sustainability:** Does the measure further compromise existing social, environmental and economic stresses? Does it protect the resource needs of future generations?
- **Industrial vision:** Does the measure position Canada to have an innovative, low-carbon, 21st century economy?
- **Precedent:** Does the measure have a successful precedent in any other jurisdiction in the world? What can we learn?
- **Leverage:** Does the measure lever further engagement (e.g. spending, performance standard/regulation, procurement) from other levels of government, private sector or individuals?
- **Synergy:** How does this suite of policy tools best achieve the desired objective? How can social marketing maximize incentives, how can regulations be part of an industrial agenda, how do all these tools work together? How can different measures best reinforce one another?
- **Public engagement:** Does the measure educate the public in climate change or energy, or engage the public in actual reductions – public awareness is vital over the long term?
- **Just transition:** Are communities and workers accommodated by the contraction (and growth) of various sectors of the economy?
- **Prevent dangerous climate change:** The Kyoto target is a small step towards more than 50 per cent reductions necessary to protect atmospheric stability. Does the measure lay the groundwork for a low-carbon economy?

9. Consult fairly, with focus and timeliness: no more study and delay

Canadian government and industry have made “consultations” an effective tool for delaying progress. Between 1998 and 2002, the federal government spent more than \$22.3 million on consultations including an extensive process involving 16 issues tables, regional workshops, cross-country consultations on a draft plan, extensive federal-provincial consultations including regular meetings with

all energy and environment ministers, and much, much more.³³ Prior to 1998, the federal government had already developed a National Action Plan on Climate through extensive consultations. Since 2002, there have been more consultations.

The current government has indicated the need to develop “an equitable national plan, in partnership with provincial and territorial governments and other stakeholders.” Unless properly designed, these consultations will intentionally or unintentionally lead to further delays.

Delaying only increases the magnitude of the challenge, raises the costs, compromises the development of innovative industries guaranteed with market opportunities, and exacerbates the impacts of climate change. Real action is required immediately.

The current trend towards backroom industry consultations to the virtual exclusion of the environmental community risks designing poor public policy. Consultations on the development of the Large Final Emitter system have inadequately included many sustainable energy and climate change analysts from non-governmental organizations. These insights are critical in effective public policy development.

Balancing timeliness with fair engagement is an important exercise.

Recommendation: Rather than focusing on “if” emission reductions should happen, consultations have to be designed to determine “how” to achieve specific targets, equitably share the burden, and maximize co-benefits. Building unanimity, while ideal, is virtually impossible. The need to strengthen the plan should not launch another protracted series of consultations designed intentionally or unintentionally to stall action on a growing crisis. Nevertheless, moving beyond backroom industry consultations to timely and meaningful consultations that engage NGO and independent energy and climate analysts is also critical. It is important to balance timeliness, focus and fair engagement in consultations.

10. Take leadership: the most critical priority

And we will go beyond Kyoto to strengthen our environmental performance.
Speech from the Throne. Governor General. February 2, 2004.

It is clear that Prime Minister Paul Martin has a deep appreciation of the threat climate change poses to the prosperity of Canadians today and in the future.

In the early 1990s he had already laid out some of his thinking to meet these objectives: “The rules of business need to be changed so that it pays to protect the environment and so that it costs to pollute and deplete resources.”³⁴ He also has the knowledge to meet this challenge by moving away from the 20th century carbon-based economy to an innovative 21st century economy that protects human health and builds more sustainable communities.

While some progress can be made without it, leadership at very top is essential in meeting the long-term challenge of preventing dangerous climate change. Leadership is critical in shaping the next generation of the Climate Change Plan for Canada. It is also necessary for the next generation of technologies, cities, Canadians, and the next generation of Federal Government.

Recommendation: Leadership is the single most important consideration in establishing and operationalizing a climate protection and sustainable energy agenda in Canada. Prime Minister Paul Martin has a rich appreciation of climate change and a vision for an innovative 21st century economy. While some progress is inevitably possible, leadership at the top will determine the real success in developing and implementing a Plan to achieve Canada’s Kyoto target and prevent dangerous climate change.

³³ Spivak, Mira. November 6, 2002. F.O.I finding presented to the Senate of Canada.

³⁴ Martin, Paul. 1992. *The Environment: A Liberal Vision*.