



Climate Change Draft Plan Achieving Our Commitments Together



Climate Change Draft Plan Overview



 Government of Canada / Gouvernement du Canada

Canada 

Climate Change Draft Plan
Achieving Our Commitments Together

Table of Contents

- Introduction
- I. Climate Change: The Context
- II. Canada's Response
- III. Meeting our Targets: Step II
- IV. The Role of Canadians, Communities and Governments
- V. Improving our Understanding of Climate Change and Preparing to Adapt
- VI. Accountability
- VII. Next Steps
- VII. Issues for Discussion
- Annex: Recent Analysis and Modeling Results

GC
CCli
2002
(draft)
c.2

Introduction

- **Serious issue for Canada and Canadians**
 - environment, health and economy
 - impact on future generations
- **Serious global issue – requires an international solution**
 - the science is clear and the international framework agreed
- **Canada is in a unique situation:**
 - have a demanding target
 - but have considerable scope for cost-effective emission reductions
 - are alone in the Americas with a Kyoto commitment
 - but can establish competitive edge by joining rest of the industrialized world in making technological advances to embrace a less carbon-intensive economy
 - face competitiveness concerns from taking action
 - but face high costs of inaction

Introduction (cont'd)

- **Our economy will grow while we reduce emissions**
 - innovation and technology are critical
 - investments will put us ahead of the curve
- **Many years of collaborative work and analysis to draw on**
- **Discussion Paper in May followed by extensive consultations**
- **Provinces and territories have released plans containing many good ideas and commitments to action**
- **Will be continuing intensive consultations on key issues and the best way of implementing the Plan**
- **Fundamentals of the Canadian approach:**
 - national project – everyone must do their part; many already engaged
 - made-in-Canada, evergreen, step-by-step, in partnership
 - no undue burden on any region or sector
 - risks managed and fairly shared
 - adequate and prudent funding

Climate Change Draft Plan
Achieving Our Commitments Together



I. Climate Change – The Context

Climate Change Draft Plan
Achieving Our Commitments Together

I.A. The Science

- **Average global temperature likely to increase 1.4°C to 5.8°C by 2100:**
 - when temperature was 5°C colder, Canada was covered with three kilometres of ice
- **Serious implications for Canada:**
 - droughts affecting agriculture in all regions
 - reduced water levels in Great Lakes and St. Lawrence
 - insect infestations and forest fires
 - changes and reductions in marine fishery
 - melting permafrost; subsiding northern infrastructure
 - increased heat waves; reduced air quality; health problems
- **Profound effect on our environment, our economy and our quality of life; intergenerational issue**

1.A. The Science (cont'd)

- **Serious implications for the world**
 - food and freshwater supplies
 - climate change refugees
 - geopolitical stability implications

- **Today's emissions will affect the global climate for the next 100 years**

- **Broad scientific consensus**
 - the potential seriousness and long-term nature of the risks mean that prudent actions should be taken to reduce emissions

I.B. The International Response

- **All countries must eventually become part of any global solution but industrialized countries have a responsibility to step up to the plate first**
 - have considerably more financial resources and economic capacity to do so
 - have led the way in other major international agreements, be they trade or environment

I.B. The International Response (cont'd)

- **Kyoto Protocol is the result of a decade of international negotiations**
- **It will likely enter into force sometime in 2003 covering at least 55% of industrialized country emissions**
- **The first commitment period will result in only a little slowing of global climate change**
- **But it is the first step of many steps needed over the next 50 years**
- **If the Kyoto Protocol falters, it could take years to negotiate a new international agreement**
 - **the science suggests we do not have time**

I.B. The International Response (cont'd)

- **Canada played an important role in shaping the Kyoto Protocol**
 - **Kyoto mechanisms and sinks provisions were “made-by-Canada”**
- **Recognition of the global benefits of cleaner energy exports is one piece of unfinished business that Canada is continuing to pursue**
- **Canada’s involvement will:**
 - **enhance the credibility of the Protocol**
 - **improve prospects for further progress in the next round of negotiations**
 - **reflect our commitment to global cooperation**

I.C. The United States

- US decision not to ratify puts Canada in a unique situation with complex competitiveness considerations
- But modeling indicates implications for Canadian industry are relatively modest and Canada can achieve its target at an acceptable cost
 - can move ahead without the US
- Competitiveness and investment flows are about more than costs:
 - labour skills, productivity, taxation, liveable cities, educational/health/social services, exchange rates
 - investment in technology R&D, capacity to innovate, state-of-the-art capital stock
- A workable approach must:
 - ensure manageable cost impacts for energy and trade-sensitive sectors
 - maximize technology benefits
 - ensure a strong overall investment climate

I.C. The United States (cont'd)

- **And US approach to climate change is not a black or white issue:**
 - US government is making large investments to spur innovation and uptake of clean technology
 - 42 states have some kind of regulation concerning greenhouse gas emissions
- US may reconsider its position in future negotiations
- Finally, the Government is expanding and intensifying cooperation with the US to help reduce the costs and impacts of reaching our target, such as:
 - clean coal technology, CO₂ capture and storage, co-generation and renewables, and sustainable agriculture and forestry practices

1.D. Canada's Kyoto Challenge and Modeling Results

- **2% of global emissions, 9th largest global emitter and 3rd highest per capita**
 - half of the world's GHG emissions come from countries with lower emissions than Canada

- **Business-as-usual emissions projected to be 810 MT by 2010 (33% above 1990 levels)**
 - emissions from industrial processing and manufacturing have remained stable at 1990 levels
 - emissions from transportation up 40%
 - emissions from electricity generation up 38%
 - emissions from oil and gas production up 43%

1.D. Canada's Kyoto Challenge and Modeling Results (cont'd)

- **Canada took on a Kyoto target**
 - 6% below 1990 levels between 2008 and 2012

- **Kyoto "gap" is about 240 MT of emissions**
 - estimated by federal/provincial/territorial working group
 - upside and downside risks
 - but a main driver is the energy sector where we have assumed significant growth

I.D. Canada's Kyoto Challenge and Modeling Results (cont'd)

- **Canada has one of the largest challenges and it is unique given the North American context**
- **However, recent modeling results indicate***
 - overall economic impact is modest
 - impacts are quite balanced across provinces and sectors
 - variation in impacts is small relative to accuracy of modeling overall

* See Annex for details

I.E. Canada's Implementation of the Protocol

- **A made-in-Canada approach within an international framework**
- **Risks must be managed**
- **Large adjustment through many small pragmatic steps**
- **National project**
 - actions in all regions and all sectors and by all Canadians
 - Canadians already engaged on many levels
 - take advantage of opportunities, new technologies, new markets, new products

I.E. Canada's Implementation of the Protocol (cont'd)

- **Must find an approach which balances the management of challenges with the pursuit of opportunities:**
 - a strong Canadian presence in the new markets
 - an economy using leading-edge technologies
 - clean air, water, liveable cities, healthy people

- **New markets where Canadian businesses, if "first movers", have the potential for critical competitive advantage include:**
 - fuel cells and the hydrogen economy
 - urban transit systems
 - renewable electricity
 - bio-fuels and bio-products
 - energy efficient houses and buildings
 - environmental technologies
 - CO₂ capture and storage

I.E. Canada's Implementation of the Protocol (cont'd)

- **Investments in leading edge productive capital stock using state-of-the-art technologies is key to our future competitive position:**
 - other industrialized countries are investing in less carbon-intensive economies
 - past experience in Canada shows strong competitive performance resulting from environmentally driven investments

- **Climate change action provides wide range of important co-benefits**
 - measures to address climate change are broadly consistent with cleaner air and reduced asthma and other respiratory illnesses and deaths

Climate Change Draft Plan
Achieving Our Commitments Together



II. Canada's Response

Climate Change Draft Plan
Achieving Our Commitments Together

II.A. Proposed Approach – Principles for the Federation

- **Made-in-Canada within an international framework**
- **Collaboration and Partnership**
- **Fairness, sharing and no unreasonable burden**
- **Transparency**

II.A. Proposed Approach – Principles for the Federation (cont'd)

- **Made-in-Canada within an international framework**
 - meet the Kyoto commitment
 - respond to unique Canadian challenges
 - contribute to a strong, growing and competitive Canadian economy
 - help developing countries reduce emissions
 - maximize trade opportunities

- **Collaboration and Partnership**
 - design the draft Plan in close consultation with provinces, territories and stakeholders
 - many good ideas and commitments in provincial and territorial plans
 - implement the draft Plan through partnerships

II.A. Proposed Approach – Principles for the Federation (cont'd)

- **Fairness, sharing and no unreasonable burden**
 - balance economic and cost impacts across regions and sectors
 - national approach with a level playing field
 - all governments must act
 - all sectors must do their fair share
 - consumers must do their part
 - provide reasonable certainty while maintaining flexibility for taking further actions

- **Transparency**
 - open process, concrete timelines, no surprises

II.A. Proposed Approach – Principles for The Plan

- **Step-by-step and evergreen**
- **Minimize costs and maximize benefits**
- **Responsible investment by all**
- **Promote innovation**
- **Manage risk**

II.A. Proposed Approach – Principles for The Plan (cont'd)

- **Step-by-step and evergreen**
 - build on actions already under way
 - assess progress, learn as we go, make adjustments, capitalize on new developments/opportunities
 - further prudent and responsible actions as needed
- **Minimize cost and optimize benefits**
 - most cost-effective manner possible
 - integration with other related priorities
 - market-based instruments and international carbon market
 - risk assessment, monitoring, and prudent management

II.A. Proposed Approach – Principles for The Plan (cont'd)

- **Responsible investment by all**
 - will provide additional resources for federally led initiatives
 - will partner on provincial and territorial initiatives
 - will consult on needs and priorities
 - phased approach over successive Budgets
 - resources will be adequate to achieve the goal

- **Promote innovation**
 - fair and competitive tax treatment
 - strategic investments in critical technologies
 - longer term technology R&D

II.A. Proposed Approach – Principles for The Plan (cont'd)

- **Manage risk**
 - work with industry to find appropriate ways to limit uncertainties, risks, and impact on competitiveness
 - recognize risk of measures not meeting expectations
 - will build in contingencies
 - will adjust approach and level of investment as needed
 - committed to continuous assessment and a step-by-step collaborative approach
 - transparent accountability, regular monitoring, bi-annual reporting
 - reduce risk through engagement with the US
 - technological alignment, no first-mover advantage
 - encourage US action and eventual re-engagement in the global approach
 - keep open our longer term undertaking under the Protocol
 - what target we may take on for the second commitment period
 - how we manage relationship between first and second commitment periods

II.A. Proposed Approach – Criteria For Next Steps

- **Cost effectiveness**
- **Degree of partnership, leverage and actions taken to date**
- **Co-benefits achieved**
- **Balance between immediate emission reductions and getting on longer-term lower emissions intensity path**
- **Impact on and contribution to competitiveness**
- **Responsiveness to areas of regional interest**

II.B. Three Steps to Overall Plan

Step I: Actions under way	80 MT
Step II: Actions in this Step	100 MT
Step III: Options for the remainder	60 MT
Total:	240 MT

II.B. Three Steps to Overall Plan (cont'd)

Overview of the Three Steps

	Step I: Actions to date	Step II: Actions in this Step	Step III: Options for the Remainder
Canadians and Government Actions: Transportation and buildings	15 MT	15-20 MT	About 60 MT (See page 19)
Industrial Emitters	25 MT	55 MT	
Other Industrial Emissions: Technology, infrastructure and efficiency gains		15 MT	
Agriculture, Forestry and Municipalities	40 MT	Offsets*	
International Market		min 10 MT	
TOTAL	About 80 MT	About 100 MT	

* Estimated at 20 to 28 MT

II.B. Three Steps: Step I - Actions Under Way (80MT)

- **Government of Canada has invested \$1.6 B since 1998**
- **Action Plan 2000 and Budget 2001 initiatives projected to lead to 50 MT of reductions over 5 to 10 years**
 - wide range of initiatives in all sectors: incentives, information, negotiation of voluntary action
 - most initiatives have been in place for one year or less
 - many are in partnership with provinces, territories, private sector
 - major assessment of progress starting this year
 - will make adjustments in response: shift resources to areas of greater success, change approach in areas not meeting expectations
- **Sound agricultural and forest management practices are expected to lead to 30 MT of sinks credits**
 - actions to foster further improvements in these areas should reduce risks to these credits

II.B. Next Steps: Step II – This Package (100 MT)

Three priority areas for action

1. Targeted measures to support individual action by Canadians
 - challenge of 1 tonne per person
 - measures in transportation and buildings sectors assist with 2/3 of this effort
 - products, services, information and incentives
2. Comprehensive approach for industrial emissions
 - domestic emissions trading
 - with domestic offsets in agricultural, forestry and possibly municipal and other sectors
 - with seamless access to international permit market
 - strategic technology and infrastructure projects
 - targeted measures where needed
3. Direct Government participation in the international market

II.B. Next Steps: Step II – This Package (100 MT) (cont'd)

- Additional reductions from initiatives that will be pursued but which are not quantified:
 - additional investments in innovation and infrastructure that reduce emissions
 - create a Partnership Fund to respond to provincial, territorial, municipal, aboriginal communities' and private sector priorities
 - assist the private sector to:
 - invest in domestic offsets
 - create international credits with good rates of return

II.B. Next Steps: Step II – This Package - 100 MT (cont'd)

	Canadians and Governments			Industrial Emitters				Int'l	Total
	Transport	Buildings	Federal House	Emission Trading	Renewables and Innovative Technology	Fugitive Gas and SVEs	Ag/Forestry/Landfill Gas Offsets		
BAU Emissions	206	84		← 425 →			94	NA	809
Actions Underway (AP2000 & Budget 2001)	10	4	0.3	← 25 →			10		~80
BAU Sinks							30		
Next Steps This Plan	12	4	0.2	55	11	5	Potential Offsets	10 min	~100
Total Target Emission Reductions	22	8	0.5	80	11	5	40	10 min	~180

Potential offsets estimated at 20-28 MT

II.B. Three Steps: Step III – The Remainder (60MT)

- **Decisions on Step III to be taken from now to 2008-2012**
 - learn from experience
 - capitalize on new technologies
 - collaborations will evolve
- **Fair sharing of responsibility for closing the gap**
 - seek areas of most reasonable cost and greatest opportunity
 - share burden
 - transparency of decision-making
- **Steps I and II address three-quarters of the gap**
 - and many areas where action can be anticipated or is already under way are not included
 - Step III will address the risks in Steps I and II and options for addressing the remainder of Canada's Kyoto commitment

II.B. Three Steps: Step III -- The Remainder (60 MT) (cont'd)

Examples of current or potential reductions that could meet remaining 60 MT

Investments not quantified in Step II

- Partnership funds to work with provinces, territories, municipalities, aboriginal communities, private sector and non-governmental groups including infrastructure programming • 20-30 MT
- Existing and future technology R&D investments which produce emission reductions • 10 MT

Reductions not included

- Provincial and territorial actions to date are not quantified • 10-20 MT
- 100 municipalities designing community-wide emissions reduction plans • 10 MT
- A challenge to Canadians to reduce emissions by 1 tonne each (31 M Canadians – only 24 MT included in the Plan) • 7 MT
- Credits for cleaner energy exports • Up to 70 MT

II.C. Achieving our Objectives - Instruments

- Four options in the *Discussion Paper*
- National consultations and modeling work lead to conclusion that use of mix of instruments is best
 - innovation and technology
 - partnership mechanisms
 - infrastructure
 - emissions trading
 - tax initiatives
 - smart regulation

II.C. Innovation and Technology

- **Dual opportunity for Canada:**
 - leading-edge technologies can help meet target
 - emerging transformational technologies can get us on longer-term lower emissions intensity path
- **Requires cost sharing among private sector and governments**
- **We will**
 - increase investments in innovation and technology
 - re-allocate funds in some existing programs to climate change objectives
 - use single window coordination for new investments under existing programs
 - explore promising new areas such as:
 - renewable energy
 - bioproducts, bioenergy and biofuels
 - fuel cells and the hydrogen economy
 - clean coal technology and CO₂ capture and storage
 - distributed power systems
 - eco-efficient industrial processes

II.C. Partnership Mechanisms

- **Potential partners have wide ranging priorities and are at different stages of engagement:**
 - need mechanisms flexible enough to respond
- **Three types:**
 - federally led targeted measures
 - provincially/territorially/municipally initiated proposals and proposals from aboriginal communities to meet their needs and priorities
 - proposals from companies, associations and non-government organizations
- **We will co-invest in a new mechanism**
 - want to consult on best approaches such as a Partnership Fund
 - allow partners to come forward over time as opportunities and priorities mature

II.C. Infrastructure

- **Putting climate friendly infrastructure in place is important to position Canada to take advantage of opportunities and meet longer-term climate change challenge**
- **We will**
 - put in place a ten-year program for infrastructure to accommodate long-term strategic initiatives, working with provinces and municipalities (Speech from the Throne)
 - apply a climate change lens to existing funds and new programming
 - explore projects in areas such as:
 - urban planning and transit systems
 - CO₂ capture and storage pipeline
 - inter-modal freight technologies

II.C. Emission Trading

- **Market-based approach**
 - most effective and flexible
 - encourages innovation and strategic investment
 - integrated with international market
- **In use and planned in Canada and other countries for climate change and other issues**
 - Ontario, United States, United Kingdom and European Union
- **We will**
 - continue discussions with industry
 - clarify architecture as soon as possible
 - consult and negotiate details over 2003-2004
 - implement emission trading as soon as possible thereafter

II.C. Tax Initiatives

- **Government already has measures in place**
 - accelerated depreciation for renewable technologies (Class 43.1)
 - excise tax exemption for ethanol

- **We will**
 - monitor and consult on climate change-related tax issues
 - assess the income tax treatment of permit purchases and investments in offset credits under an emissions trading system

II.C. Smart Regulation

- **The draft Plan is largely based on information, incentives and negotiated targets**

- **Market-based approaches are most cost-effective**

- **Government will work with provinces, territories and municipalities to develop selective, smart regulation where appropriate, for instance**
 - energy efficiency
 - biofuels

Climate Change Draft Plan
Achieving Our Commitments Together



III. Meeting our Targets: Step II

Climate Change Draft Plan
Achieving Our Commitments Together

III. Meeting our Targets: Step II

- **This section lays out the actions the Government is proposing in each sector**
 - the Government wants to consult with provinces, territories, municipalities, the private sector and individual Canadians on the timing and best ways to implement them
- **Beginning with Budget 2003 and subsequent Budgets, the Government will announce investments in partnerships with provinces, territories, municipalities, the private sector and individual Canadians**
- **The Government will regularly assess progress and look at new opportunities**

III.A. Transportation - Overview

- Improved fuel efficiency, more alternative fuels, more efficient freight, increased urban transportation
- Create conditions for individual and consumer action
 - greater information, more available products and services

Actions Under Way – 9.4 MT

- negotiation of a 25% improvement in new vehicle fuel efficiency by 2010
- increased ethanol production to support blending in 25% of gasoline
- development and demonstration of fuel cell re-fuelling infrastructure
- demonstration of best strategies and technologies to reduce urban transportation and freight emissions
- voluntary agreements with air, rail, truck and marine sectors to improve fuel efficiency

III.A. Transportation – Specifics (cont'd)

Next Steps: 12.1 MT

- We will
 - intensify negotiations with manufacturers and importers to improve new vehicle fuel efficiency
 - consider possible cooperative action with US partners and governments
 - possibly consider use of legislation
 - provide federal assistance and incentives to increase use of urban transit (7.0 MT)
 - cost shared infrastructure projects
 - build on action by provinces and municipalities
 - promote systems for transportation management
 - promote land use planning

III.A. Transportation – Specifics (cont'd)

- **We will consider**
 - **providing consumer information to improve fuel efficiency (0.5 MT)**
 - EnergyStar labeling for vehicles
 - information on life-cycle carbon emissions
 - targeted campaigns through local partnerships to improve vehicle maintenance and driving practices
 - **improving off-road vehicle and equipment fuel efficiency (0.3 MT)**
 - voluntary agreements with manufacturers
 - possible regulatory measures
 - **increasing national target by 2010 to 35% of gasoline having either 10% ethanol or a standard which focuses on the greenhouse gas content of the ethanol portion by 2010 (0.9 MT)**
 - cooperation with provinces and territories
 - support for development of cellulosic technology

III.A. Transportation – Specifics (cont'd)

- **We will consider (cont'd)**
 - **setting national target of 500 million litres of bio-diesel (1.1 MT)**
 - federal incentives
 - cooperation with provinces and territories
 - support for technology development
 - **setting improved performance targets and best practices for all modes (1.3 MT)**
 - negotiated with associations/industry
 - new education and awareness tools
 - **improving inter-modal freight opportunities (1 MT)**
 - cost-shared investments in infrastructure
 - harmonization of standards
 - showcasing of best practices, including intelligent transportation systems

III.B. Buildings - Overview

- Energy efficiency improvements (new and retrofit) and more efficient equipment
- Create conditions for individual and consumer action
 - greater information, incentives, more available products and services

Actions Under Way – 4 MT

- home energy efficiency evaluations (1 MT)
- making existing housing more energy-efficient (2 MT)
- improved standards for equipment and appliances (3 MT)

III.B. Buildings – Specifics (cont'd)

Next Steps: 3.8 MT

- We will
 - expand cost shared energy audits for houses and buildings
 - enhance existing initiatives which provide financial incentives, information, advice and audits
- We will consider
 - a target of 20% of houses to have energy efficiency retrofits by 2010 (1.5 MT)
 - a target of 20% of buildings to have energy efficiency retrofits by 2010 (1.2 MT)

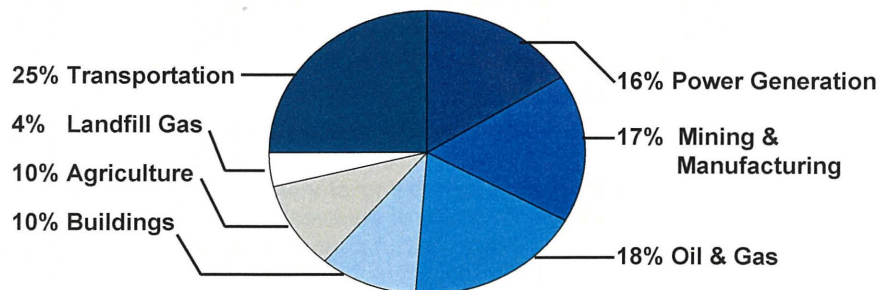
III.B. Buildings – Specifics (cont'd)

- We will consider (cont'd)
 - a target of all new houses being built to R-2000 or equivalent level by 2010 (0.7 MT)
 - cooperation with provinces and territories
 - build on Energuide for Housing initiative and existing provincial/territorial programs
 - a target of all new buildings being built to a minimum of 25% better than the Model National Energy Code by 2010 (0.4 MT)
 - enhance existing financial incentives to owners who meet target

III. C.1 Large Industrial Emitters: A Comprehensive Approach

Approximately 50% of emissions are from large industrial emitters

Emissions by Sector in 2010



- Industry sectors major contributors to the economy
- Climate change plan requires specific focus on industrial sector

III. C.1 Large Industrial Emitters: A Comprehensive Approach (con'd)

- **A comprehensive approach including:**
 - an overall target established through consultation
 - emissions trading
 - access and facilitation of domestic offsets
 - access and facilitation of international permits
 - cost-sharing strategic investments in complementary measures – see Section III.C.3
 - work with Industry to manage uncertainties and risk
 - under discussion with industry, and provincial and territorial views being sought

III. C.1 Large Industrial Emitters: A Comprehensive Approach (cont'd)

- **Overall target**
 - large industrial emitters forecast to contribute approximately 50% of Canadian emissions in 2010
 - Action Plan 2000 and Budget 2001 actions under way in these sectors estimated to reduce by 25MT
 - target for emissions trading under discussion – an additional 55MT
 - complementary targeted measures in these sectors discussed elsewhere in this draft plan would account for about a further 15MT

III. C.1 Large Industrial Emitters: A Comprehensive Approach (cont'd)

- **Permit Allocation Alternatives**
 - options under discussion to allocate a large proportion (approx. 85%) of expected permit requirements free
 - companies would have choices for how to deal with the rest of their permit requirements:
 - investments to reduce emissions, permit purchases, or offsets
 - Government will work with partners to facilitate profitable investment opportunities overseas (e.g. Clean Development Mechanism) and at home (offsets)

III. C.1 Large Industrial Emitters: A Comprehensive Approach (cont'd)

- **Permit Allocation Alternatives (cont'd)**
 - options under discussion for determining allocation factors to be applied to output
 - based on emissions intensity in a given year
 - based on sectoral/subsectoral technological assessment of emissions reduction possibilities
 - all allocation options under consideration designed to address competitiveness and growth concerns raised by industry:
 - favour lower emitting firms within sectors
 - have no “cap” on emissions
 - favour growth by giving firms more permits as output grows
 - implementation through regulations and/or covenants
 - need approach that balances equity with administrative manageability

III. C.1 Large Industrial Emitters: A Comprehensive Approach (cont'd)

- Sectors proposed for inclusion on basis of emissions intensity
 - thermal electricity generation (coal, oil, and gas)
 - oil and Gas (upstream extraction, oil and gas pipelines, gas utilities, petroleum refining)
 - mining (both metal and non-metal)
 - pulp and Paper production
 - chemical production (industrial inorganic chemicals, industrial organic chemicals, and chemical fertilizers and fertilizer materials)
 - iron and steel production
 - smelting and refining
 - cement and lime production
 - glass and glass container production
- Not proposed for inclusion are light manufacturing, car assembly, service sectors which are “low intensity” emitters

III.C.1 Large Industrial Emitters: A Comprehensive Approach (cont'd)

Illustrative Costs for Selected Industries with 85% Free Permit Allocation
(at \$10/Tonne Carbon Price)

Sector	\$ per Unit	Cost/ Price (%)	Sector	\$ per Unit	Cost/ Price (%)
Conventional Oil (\$/ barrel)	0.03	0.09	Electricity - Coal (c/KWHR)	0.14	1.94
Heavy Crude Oil (\$/ barrel)	0.015	0.05	Electricity – Oil (c/KWHR)	0.12	1.57
Oil Sands – Bitumen (\$/barrel)	0.10	0.34	Electricity – Gas (c/KWHR)	0.04	0.60
Oil Sands – Synthetic (\$/barrel)	0.12	0.31	Cement (\$/ tonne)	1.18	1.18
Natural Gas (\$/ mcf)	0.005	0.14	Lime (\$/tonne)	1.85	2.50
Pipelines (\$/ mcf)	0.0014		Pulp and Paper (\$/tonne)	0.59	0.06
Refined Petrol Products (\$/ m ³)	0.17	0.03			
Steel – Conventional (\$/ tonne)	2.10	0.29	Industry Chems (\$/ tonne)	0.31	
Steel – Electric Arc (\$/ tonne)	0.60	0.08	Agriculture Chemicals, Fertilizers, etc (\$/tonne)	2.63	1.46
Aluminum (\$/ tonne)	4.73	0.23			

III. C.1 Large Industrial Emitters: A Comprehensive Approach (cont'd)

- **Cost Implications**
 - for most industries this approach would add much less than one percent to production costs
 - for a few it is more significant (coal-fired power generation, cement, lime)
 - would need to consider competitiveness impacts, including ability to pass on costs
 - these cost estimates are based on \$10 per tonne international price and could be reduced by making less expensive investments in reducing emissions, offsets or international projects

III. C.1 Large Industrial Emitters: A Comprehensive Approach (cont'd)

Key Issues Under Discussion

- Government has underlined need for a significant contribution by large emitters to reducing greenhouse gas emissions. It has indicated openness to alternative approaches, which would include emissions trading, to achieve this
- Government is engaged with stakeholders to design an approach which
 - is equitable in dealing with different sectors and companies, with due recognition for early action
 - addresses competitiveness concerns, including risks from sustained high carbon prices and from uncertainties regarding quantity of reductions sought from industry
 - provides real incentives for emission reductions
 - promotes opportunities for profitable investments in offsets in Canada as well as in the Clean Development Mechanism in developing countries
 - provides adequate certainty for private sector planning
 - is administratively clear and efficient

III. C.1 Large Industrial Emitters: A Comprehensive Approach (cont'd)

Next steps

- **We will**
 - continue discussions with industry
 - clarify architecture as soon as possible
 - consult and negotiate details over 2003-2004
 - implement emissions trading as soon as possible thereafter

III.C.2.Agriculture, Forestry and Landfill - Overview

- Forests and agricultural crops absorb CO₂ from the atmosphere through photosynthesis
- With good management practices, they can be net carbon sinks
- Current practices are already producing sinks credits
- Expansion and enhancement of these practices and increased capture and flaring could produce potential offsets credits for an emission trading system
 - must be real, measurable and go beyond business as usual

III.C.2. Agriculture, Forestry and Landfill - Specifics

Actions Under Way

- Developing measurement tools and inventories needed to qualify for credits through international rules as a result of existing good agricultural and forest management practices (30 MT)
- Promoting additional sinks through improved soil management initiatives in Action Plan 2000 and the Agriculture Policy Framework and through Greencover program (6 MT)

III.C.2. Agriculture, Forestry and Landfill - Specifics

Next Steps

- **We will**
 - establish framework enabling new agricultural and forestry sinks to be sold as offsets into the emission trading system (12 MT)
 - this could include establishment of a facilitating mechanism for generation of offsets
 - consult on whether to regulate emissions reductions from new capture and flaring of landfill gas or allow them to be sold as offsets into the emission trading system (8 MT)
 - integrate climate change objectives into farm environmental management planning under the Agriculture Policy Framework
- **We will consider**
 - increasing forestry sinks through further cooperation with provinces and territories

III.C.3. Renewable Energy/Innovative Technology - Overview

- Important for achieving target and longer term lower emissions intensity path
- Creates significant economic opportunities
- Partnerships between governments and private sector important

Actions Under Way - 12 MT

- Incentive for wind power production (2.8 MT)
- Green power purchases to meet 20 % of the Government of Canada's electricity needs (0.2 MT)
- Cooperation with provinces to reduce barriers to inter-provincial electricity trade and transmission (5.4 MT)
- CO₂ capture and storage demonstration projects (3.5 MT)

III.C.3. Renewable Energy/Innovative Technology – Specifics (cont'd)

Next Steps - 10.6 MT

- **We will**
 - target 10% of new electricity generating capacity from green sources (3.9 MT)
 - partner on suitable clean coal technology demonstration projects – retrofit and/or greenfield (4.5 MT)
 - partner on a suitable proposal for the backbone of a CO₂ pipeline system (2.2 MT)
 - further analysis of needs and approach
- **We will consider**
 - whether there are undue impediments to new electricity transmission and hydro capacity

III.C.4. SMEs and Fugitive Emissions - Overview

Small and Medium-Sized Enterprises (SMEs)

- Scope for voluntary energy efficiency improvements

Actions Under Way - 2 MT

- improvements to industrial energy efficiency (2 MT)

Next Steps – 0.7 MT

- We will
 - expand Canadian Industry Program for Energy Conservation (CIPEC) to include voluntary energy efficiency improvement targets for SMEs (0.7 MT)

III.C.4. SMEs and Fugitive Emissions(con'd)

Fugitive emissions

- Difficulties with measurement preclude inclusion in emissions trading system
- Use of best technologies and practices can significantly reduce emissions
 - experience in Alberta

Next Steps - 4 MT

- We will
 - work with provinces to further reduce flaring and venting of waste gases(4 MT)
 - build on Alberta experience and expand current voluntary actions

III.D. International Emission Reductions - Overview

- **New international market and global commodity**
- **Government wants to work collaboratively to:**
 - help developing countries reduce emissions
 - maximize trade opportunities for Canadian goods and services
 - maximize opportunities for Canadian companies to make a business out of generating offsets
 - help build an effectively functioning market to allow Canadian firms to purchase permits at a reasonable price
 - help risk manage Canada's ability to reach its target
- **Canadian business already active in the market and making money**

III.D. International Emission Reductions - Specifics

Actions Under Way

- \$15 M investment in the World Bank Prototype Carbon Fund
- \$100 M investment in capacity building activities in developing countries (Canada Climate Change Development Fund)
- \$25 M to facilitate Canadian private sector participation in international projects (CDM/JI Office)

Next Steps - 10 MT

- **We will**
 - consult with private sector on best approach to work together
- **We will consider**
 - purchasing a minimum of 10 MT of credits by the Government of Canada

Climate Change Draft Plan
Achieving Our Commitments Together



IV. The Role of Canadians,
Communities and Governments

IV.A. A Goal for Canadians

- Canadians emit an average of 5 tonnes per person
 - accounts for more than one quarter of Canada's emissions
- Challenging Canadians to take personal action to reduce emissions by 1 tonne
 - the Plan provides means for more than 2/3 of this
 - expand public education and outreach to provide better information on what Canadians can do
- Actions could include:

➢ operating home energy efficiently	0.4 T
• turn thermostat down at night, lower hot water temperature, fill clothes dryer, etc	
➢ buying a 25% more fuel efficient vehicle	1.0 T
➢ reducing use of car by 10%	0.5 T
➢ retrofitting house to make it more energy efficient	2.0 T

IV.B. Community-level Action

- **Already reducing emissions by about 3 MT**
 - 100 municipalities developing plans to reduce community-wide emissions by 6% below 1990 levels
- **10 MT of further emission reductions through actions in:**
 - waste diversion, land use planning, operations, renewable electricity and sinks

IV.C. Aboriginal and Northern Communities

- **Aboriginal and northern communities face unique challenges**
 - already seeing impact of climate change
 - livelihoods can come from land, water and natural resources

Already Under Way:

- through Action Plan 2000 aboriginal and northern communities are being provided with tools to
 - build capacity to respond to climate change
 - take advantage of renewable energy
 - act on energy efficiency particularly in buildings

Next Steps:

- **We will consider:**
 - further efforts as the current initiatives are implemented and other opportunities are identified

IV.D. The Government of Canada and its Partners: Leading by Example

Already Under Way

- Government of Canada's current emission reduction target is 31% below 1990 by 2010
 - 21% reduction to date, 6% more to come from green electricity purchases

Next Steps

- We will
 - commit to EnergyStar criteria for government office equipment
 - increase new vehicle purchases which are alternative fuel or most energy efficient within their class
 - extend as national program to challenge and encourage provinces, territories, commercial, and transit fleets

Climate Change Draft Plan
Achieving Our Commitments Together



**V. Improving Our Understanding
of Climate Change and Preparing
to Adapt**

Climate Change Draft Plan
Achieving Our Commitments Together

V.A. Improving Climate Science

- **Four priority areas for further action**
 - improving climate models
 - greater precision on rate and magnitude of future climate change
 - regional scale climate change information
 - information that can be used for decision-making at the local level
 - play our part to ensure a sustained international effort to understand and model climate change in the Arctic
 - impacts on sea ice, permafrost etc
 - better understanding of extreme weather events
- **To be done in collaboration with provinces/territories, universities, the private sector and other countries**

V.B. Assessing Impacts and Preparing to Adapt

- **Four priorities areas**
 - develop approaches to adaptation planning
 - expand assessment of vulnerabilities to a changing climate for key areas:
 - the North
 - agriculture and drought, forestry and fishing and others
 - develop initial adaptation strategies for the above areas and municipalities
 - develop increased awareness of the need for adaptation among decision makers

- **To be done in collaboration with provinces/territories, universities and the private sector**

Climate Change Draft Plan
Achieving Our Commitments Together



VI. Accountability

Climate Change Draft Plan
Achieving Our Commitments Together

VI.A. Accountability

- **We will:**
 - meet our UNFCCC reporting obligations
 - and make necessary investments to ensure inventories meet reporting standards
 - monitor the Plan's economic and environmental effectiveness
 - in collaboration with other orders of government
 - monitor emission reductions from individual initiatives and the Plan as a whole
 - adjust the Plan as appropriate to ensure objectives are met
 - use existing tools such as the TEAM System of Measurement and Reporting and the methodologies of the GHG Verification Centre
 - report bi-annually on progress

Climate Change Draft Plan
Achieving Our Commitments Together



VII. Next Steps

Climate Change Draft Plan
Achieving Our Commitments Together

VII. Next Steps

- **JMM – October 28th**
- **CoP 8 high-level segment – October 30th to November 1st**
- **Continuing consultations with stakeholders**
- **JMM – November 21st (tbc)**
- **Parliamentary process – end of November**

Climate Change Draft Plan
Achieving Our Commitments Together



VIII. Issues for Discussion

Climate Change Draft Plan
Achieving Our Commitments Together

VIII. Issues for Discussion

- **Addressing climate change must be a national project**
 - does the draft Plan adequately engage all Canadians?
- **A mix of measures and instruments is proposed**
 - is the framework right?
- **The draft Plan is premised on a sharing of burden, costs and responsibilities**
 - is the balance more or less right?
- **There are many opportunities in the new lower carbon global economy**
 - does the draft Plan capture those that are important to Canada?

Available on-line

www.climatechange.gc.ca

Climate Change Draft Plan
Achieving Our Commitments Together



ANNEX

Recent Analysis and Modeling Results

Climate Change Draft Plan
Achieving Our Commitments Together

ANNEX. Recent Analysis and Modeling Results -- Overview

- **What was modeled:**
 - a new “Reference Case”, not the Plan
 - a most likely scenario (\$10 international price of carbon, government financed initiatives)
 - three alternative scenarios for analyzing risk

- **What was concluded:**
 - overall economic impact is modest
 - impacts are quite balanced across provinces and sectors
 - variation in impacts is small relative to accuracy of modeling overall

ANNEX. Recent Analysis and Modeling Results - Linkages to Previous AMG Modeling

- Modeling in 2000 estimated GDP impact in range of 0 to -3%
 - highest cost estimate included 450,000 job loss, but it was assumed that Canada acted alone (i.e. no international permit trading)
- Modeling reported in spring 2002 Discussion Paper narrowed range to +0.4 to -1.7%
 - option 1 (broad as possible emissions trading) gave small positive overall impact of +0.1 to +0.4% (due to tax cuts financed by auctioning permits), but uneven sectoral and regional impacts
 - option 3 (mix of emissions trading, targeted measures and government purchases) gave impacts in range of -0.6 to -1.7%
- Most recent modeling (Reference Case) focused on Option 4 from the Discussion Paper
 - emission reductions of 170 MT
 - emissions trading designed to mitigate uneven sectoral and regional impacts

ANNEX. Recent Analysis and Modeling Results - Impacts under four scenarios - 2010

	Percent change in GDP relative to BAU in 2010	Employment Growth 2002 to 2010 (millions)	Disposable income per household
BAU	-	1.32	\$68,000
\$10 Case			
Government Financed*	-0.4	1.26	\$68,000
Tax Financed	-1.2	1.13	\$66,700
\$50 Case			
Government Financed	-0.7	1.23	\$67,800
Tax Financed	-1.6	1.08	\$66,300

* Most likely scenario

ANNEX. Recent Analysis and Modeling Results - Reference Case Provincial Changes to GDP in 2010



* Most likely scenario

ANNEX. Recent Analysis and Modeling Results - Impacts on Energy Suppliers & Energy-Intensive Sectors

Sector	Percent Share of GDP	\$10 Tax Fin Change in output	\$10 Gov Fin* Change in output	\$50 Tax Fin Change in output	\$50 Gov Fin Change in output
Metal mining	0.7	-0.1	-0.2	-0.4	-0.4
Nonmetal mining	0.2	-0.6	-0.6	-1.7	-0.9
Pulp & paper	1.0	+0.1	+0.2	-0.1	+0.1
Primary iron and steel	0.6	+0.6	+0.4	+0.4	+0.3
Primary nonferrous metals	0.7	-0.3	-0.3	-0.6	-0.6
Motor vehicles	2.5	+0.9	+0.9	+0.9	+0.9
Cement and clay products	0.3	-2.6	-2.4	-3.2	-3.0
Refined petroleum	0.3	-4.2	-3.1	-5.1	-3.8
Industrial chemicals	0.4	-0.1	-0.3	-0.9	-1.0
Oil and Gas	2.7	-0.4	-0.4	-2.1	-2.1
Electricity	2.3	-3.2	-2.8	-4.5	-3.8
Coal	0.2	-0.9	-0.9	-4.9	-4.8

*most likely scenario

ANNEX. Co-Benefits of Taking Action

- **Taking action on climate change will provide broader benefits including cleaner air, reduced health costs and other environmental and social benefits**

- **Results from update of analysis by federal/provincial/territorial working group:**
 - 600 premature deaths avoided
 - over 1000 cases of chronic bronchitis avoided
 - hundreds of thousands of asthma attacks avoided
 - \$160 million per year in avoided health costs