Canada's Climate Change Mitigation Plan

Government of Canada

Guy Saint-Jacques
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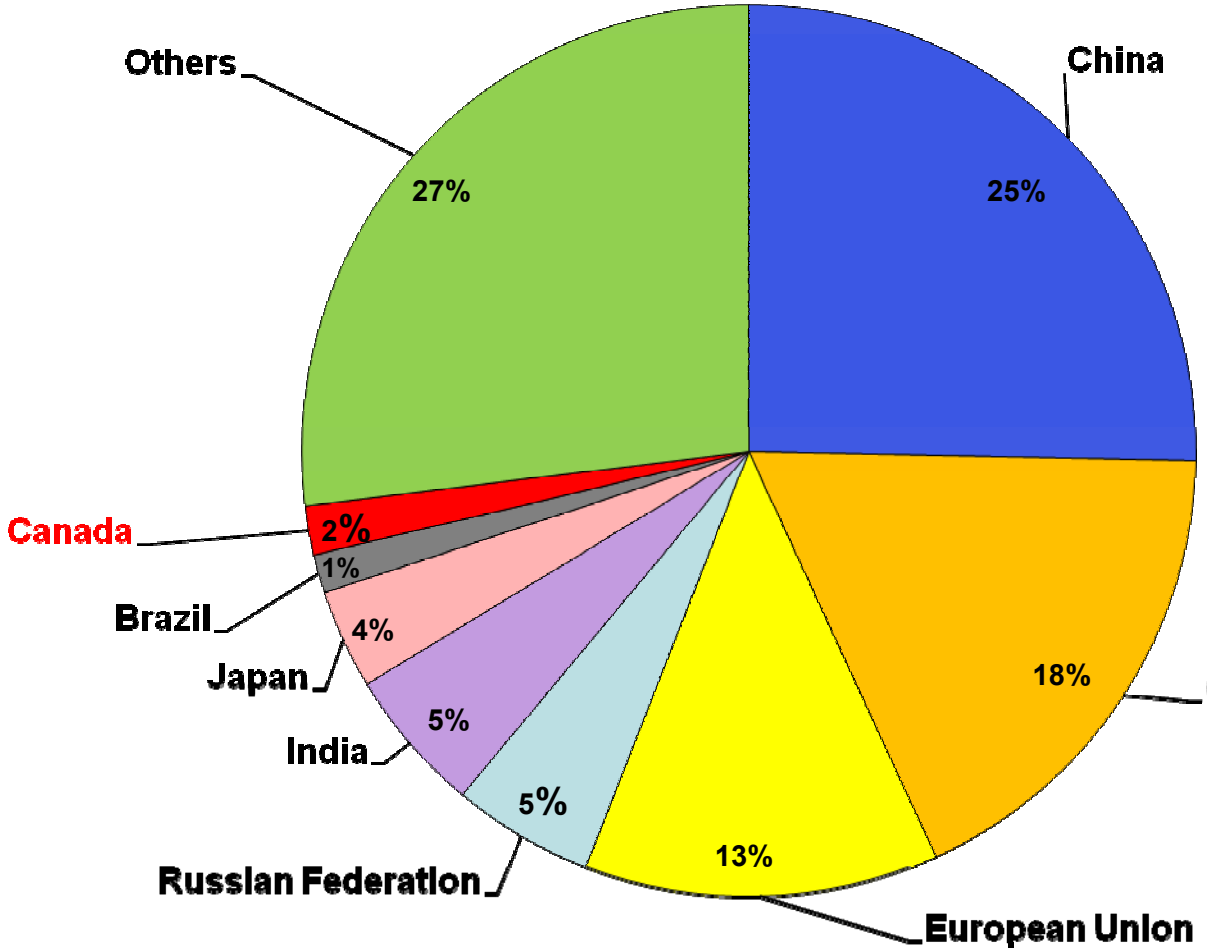
Purpose

- Situate emission reductions within Canadian context
- Provide information on Canada's greenhouse gas (GHG) emissions and reduction target
- Discuss Canada's efforts to address climate change through mitigation and adaptation activities
- Provide initial thoughts on country reporting

Canadian Context

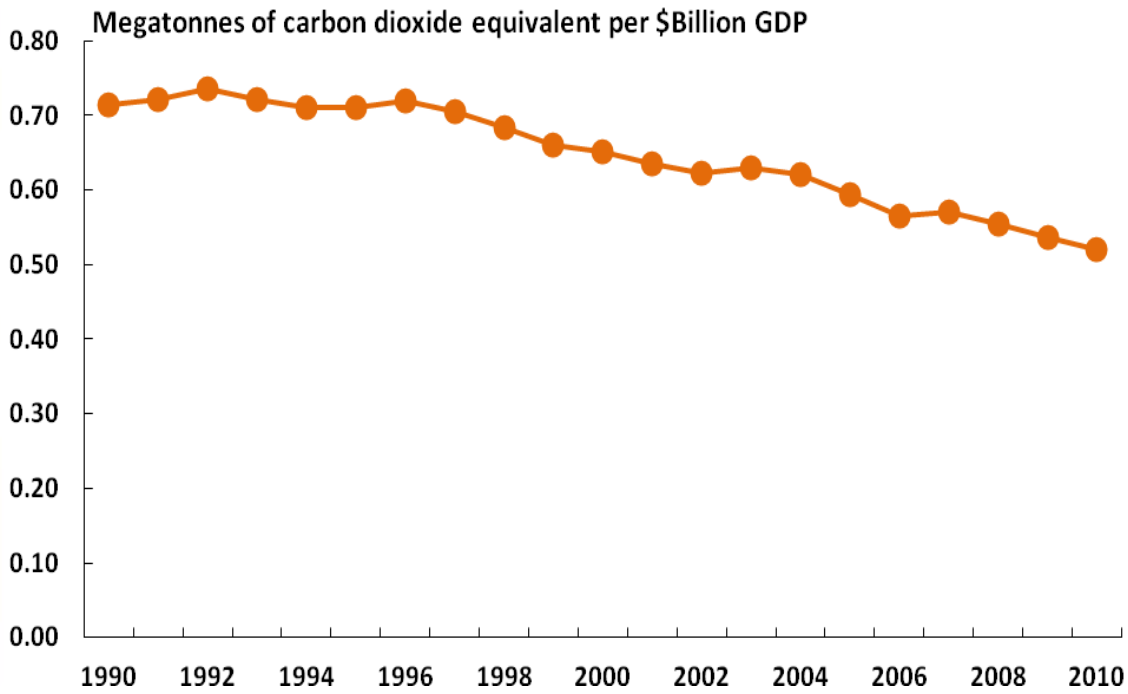
Global CO_2 Emissions From Energy by Country (2009, Mt)



- Canada still represents about 2% of global emissions
- China's energy emissions growing rapidly

The GHG emission intensity of the Canadian economy has steadily improved since 1990

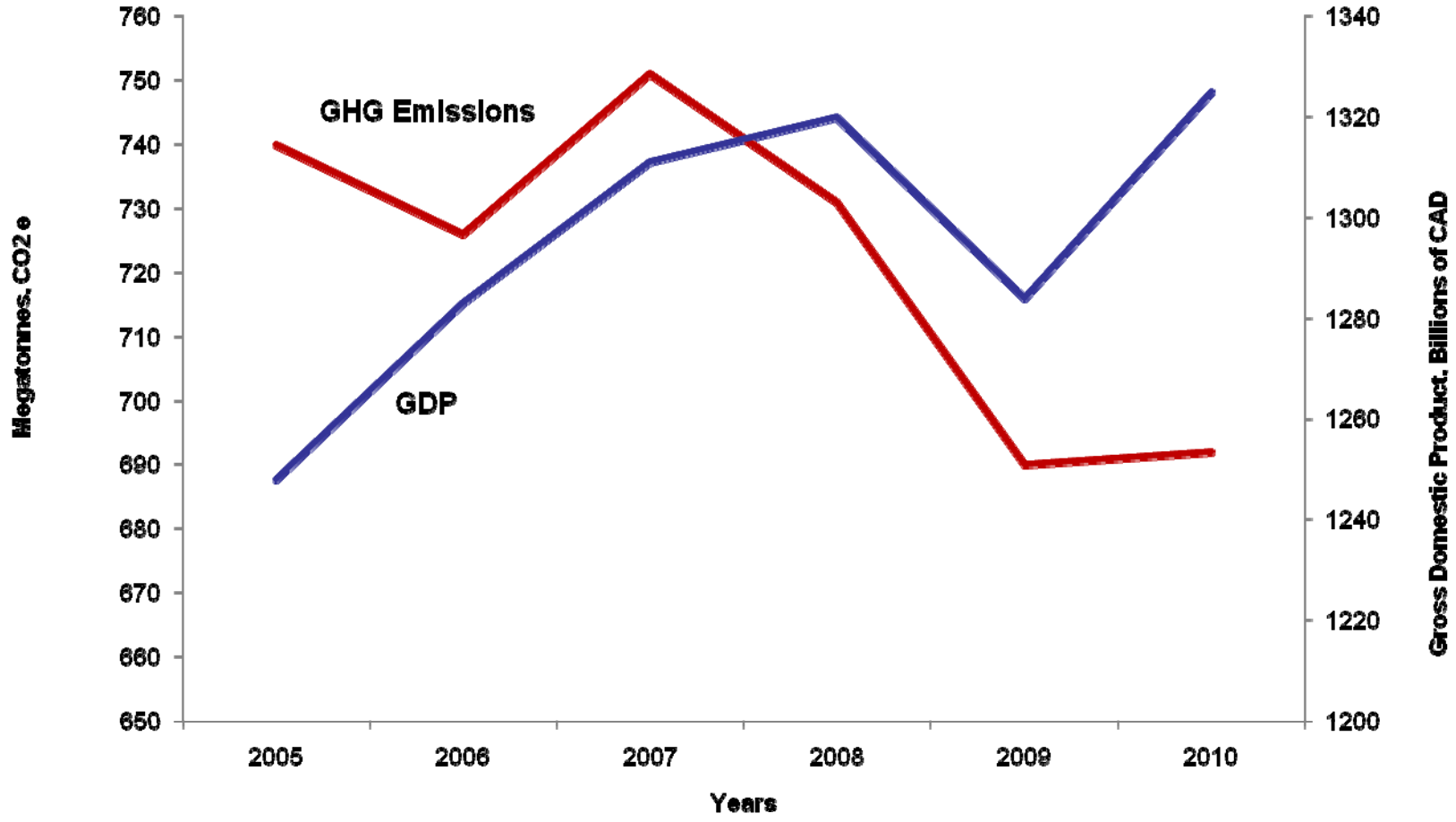
National GHG emissions per unit of GDP (GHG intensity), Canada, 1990 to 2010



- Canada's improved GHG intensity can be explained by more efficient industrial processes, a shift to a more service-based economy and lower-emitting energy generation (e.g., through fuel switching)

Note: GHG intensity is calculated using the real inflation-adjusted GDP in 2002 dollars.
Source: Environment Canada (2012) National Inventory Report 1990–2010: Greenhouse Gas Sources and Sinks in Canada.

In recent years Canada has de-linked economic growth from emissions



Emissions are on downward track in most economic sectors

Sectors	2005 Emissions	2010 Emissions	Percentage Change
Agriculture	67	69	3%
Buildings	85	79	-7%
Electricity	121	99	-18%
Emissions Intensive & Trade Exposed Industries	90	75	-17%
Oil and Gas	160	154	-4%
Transportation	170	166	-2%
Waste and Others	48	50	4%
Total	740	692	-6%

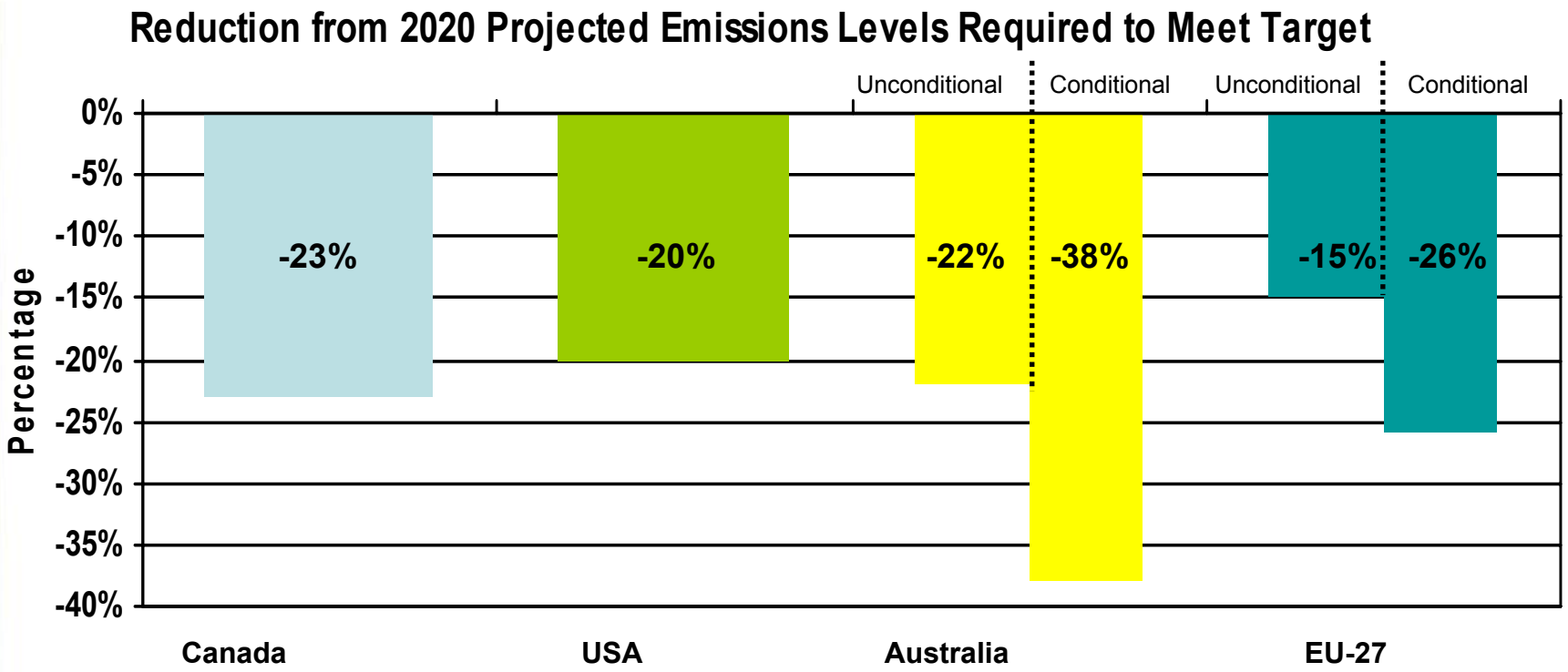
Note: All emissions are reported as Mt of CO_2 equivalent.
Source: Environment Canada (2012) National Inventory Report 1990–2010: Greenhouse Gas Sources and Sinks in Canada.

Canada's 2020 Target

Canada is taking action to reduce GHG emissions

- Under the Cancun Agreements, Canada has an emission reduction target of 17% below 2005 levels by 2020
- Significant action is taking place at both federal and provincial levels
  - Federal sector by sector regulatory approach
  - Provincial carbon taxes, cap and trade, feed-in tariffs

Canada's national target reflects significant ambition



Note: Includes both unconditional and conditional targets for Australia and EU-27.
Source: UNFCCC.

Clarification of Target

- Canada's submission for Clarification of 2020 Target notes:
  - Base year for 2020 target will be 2005
  - Canada agrees to add NF_3 to list of 6 gases and to revised global warming potentials (GWPs)
- All IPCC sources and sectors will be covered
- Canada intends to include the LULUCF sector in its accounting of greenhouse gas emissions
  - Emissions and removals from the LULUCF sector will be accounted for using either the 2005 base-year or a reference level
  - Non-anthropogenic emissions and related removals resulting from natural disturbances will be excluded, and accounting for harvested wood products would follow a production approach
- Canada's submission can be found at: http://unfccc.int/files/bodies/awg-lca/application/pdf/mitigation_clarification_-_canada_-_may_7,_2012.pdf

Canada has an annual report on progress towards its 2020 target

- *Emissions Trends* report provides comprehensive projections of emissions nationally and by sector
- First published in July 2011; update expected in summer 2012
- Transparency and shared understanding of country specific emission reduction challenges is important
  - Reporting should allow for a broad and flexible range of mitigation actions to be reported in a way that takes into account unique national circumstances
  - Should allow for integrated assessment of estimated reductions from policy measures within countries (e.g., federal and provincial measures)

Canada's Climate Change Efforts

The Government of Canada's approach to GHG emission reductions

- The Government is committed to achieving its environmental objectives, meeting the 2020 target, and its economic objectives, including sustainable economic growth and job creation

- Canada is focusing on developing environmental policies that achieve real environmental benefits while minimising economic costs, decoupling environmental damage from economic growth – consistent with international focus on green growth

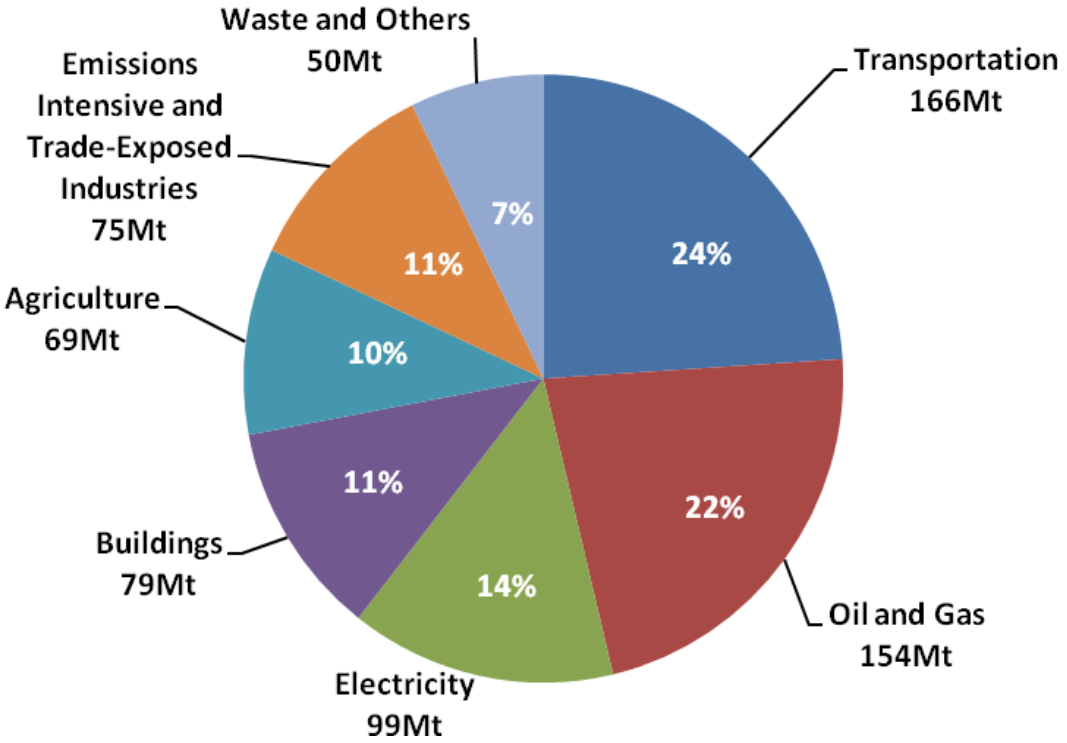
- There is recognition that environmental policies can be positive instruments of economic renewal and competitiveness

The Government of Canada's plan is based on a sector-by-sector regulatory approach

- Given the degree of economic integration with the U.S., we are aligning our climate change approach with that of the U.S. as appropriate, to maximize progress on reducing emissions while maintaining economic competitiveness
- Our sector by sector approach makes it possible to tailor regulations to sector circumstances and integrate environmental and economic considerations, supporting green growth
- Regulations are designed to provide regulatory certainty, drive innovation and leverage capital stock turnover to avoid lock-in of long-lived high-emitting infrastructure
- The Government has already implemented measures targeting two of the largest emitting sectors in Canada – transportation and electricity – and is working towards reducing emissions from the oil and gas sector and other priority industrial sectors

Canada faces different GHG reduction challenges than other developed countries

Distribution of national GHG emissions by economic sector, Canada, 2010 (Total = 692 Mt)



Note: The 'Waste and Others' sector includes emissions from light manufacturing, construction, forest resources, waste and coal production.

Source: Environment Canada (2012) National Inventory Report 1990–2010: Greenhouse Gas Sources and Sinks in Canada.

Sector by Sector Approach started with Transportation

- In 2010, transportation emissions accounted for approximately 24% of all emissions in Canada
- As the largest source of Canadian emissions, transportation is the first sector targeted by Canada's sector by sector regulatory approach
- Regulations mandating new biofuel content in gasoline and diesel
  - Average of 5% renewable content in gasoline (as of October 2010)
  - 2% renewable content for diesel fuel and heating oil (as of July 2011)
- Since 2006, the Federal Government has committed over $3.9 billion for provinces to invest in public transit projects
  - Through revenues raised by a Federal Gas Tax Fund ($2 billion per year) aimed at providing long-term funding to municipalities primarily for green and green-related public infrastructure

Transportation Sector Measures

- Developing common North American GHG emissions standards for light and heavy duty vehicles, given integration of North American market
  - GHG emissions standards for new cars and light trucks for 2011-2016 model years. Regulations are expected to have significant economic and environmental benefits
    - Benefits exceeding costs by a ration of over 3:1; 28 billion litres in fuel savings
  - Ongoing work with the U.S. to develop harmonized and progressively more stringent standards for the 2017 and later model years of passenger vehicles and light trucks
    - Aiming for proposed regulations in fall of 2012
  - Draft standards for heavy-duty trucks published in April 2012 for 2014-2018 model years. Expected to decelerate emissions growth projected for ground freight and off-road vehicles
  - Working with the U.S. and international partners on emission rules for ships, trains and planes

Significant Progress is being made in the Electricity Sector

- Canada has one of the cleanest electricity systems in the world with almost 80% of the electricity supply emitting no GHGs
  - Including nuclear, hydro and other renewable sources
- Federal and provincial measures are gradually phasing out high-emitting coal-fired electricity generation
  - Once regulations fully phased in, only coal with carbon capture and storage will be allowed
- While other developed economies focus on reductions in the electricity sector to meet targets, Canada has limited low-cost abatement opportunities to further reduce its electricity sector emissions

Electricity Sector Measures

- Draft federal regulations were published in August 2011 to limit emissions from electricity generation
  - Aim is to finalize these regulations in 2012
  - Will impose stringent GHG performance standards on new coal-fired electricity generation units and on units that have reached the end of their economic life
  - Will implement a permanent shift to lower or non-emitting types of generation
- The proposed regulations are carefully designed to minimize costs to firms and consumers
  - Are stringent but flexible to stimulate innovation
  - Are predictable to provide investment certainty
- Use of regulation at the point of capital stock turnover guarantees long-lived infrastructure will be built relatively clean, avoiding “lock-in”
  - Avoids costly stranded assets, minimizing costs
- Through the Clean Energy Dialogue, Canada is working with U.S. to collaborate on clean energy R&D, development and deployment of clean energy technologies, and building a more efficient electricity grid

Canada is a net energy exporter, responding to global energy demand

- In the G20, Canada is the 5th largest overall energy producer, and has the 5th largest energy surplus (production minus consumption)
- Canada has the third largest global crude oil reserves in the world
- Oil and Gas is a key driving force in the Canadian economy and accounts for close to 18% of all Canadian exports
- In 2010, oil and gas sector GHG emissions accounted for approximately 22% of all emissions in Canada.
- 7% of total emissions are from oil sands

Oil and Gas Sector Measures

- Federal oil and gas sector GHG regulations under development
  - Working towards draft regulations for 2013
- Alberta Specified Gas Emitters Regulation (from 2007)
  - Existing large emitters/facilities required to immediately reduce per unit GHG output by 12%
  - Carbon Price of $15/tonne
  - Offsets and carbon trading markets
  - $257 million in revenues invested in new carbon reducing technologies
- Technology Investments
  - Federal investments in technology innovation and deployment
  - Significant federal and provincial investment into carbon capture and storage

Oil and Gas Sector Measures (continued)

- The Government is working with Alberta on a *Joint Canada-Alberta Implementation Plan for Oil Sands Monitoring*
  - Commits both governments to implementing a scientifically rigorous, comprehensive, integrated, and transparent environmental monitoring program
  - Outlines the path forward to enhance the monitoring of water, air, land and biodiversity in the oil sands
- Canada's Oil Sands Innovation Alliance (COSIA)
  - An alliance of oil sands producers focused on accelerating the pace of improvement in environmental performance in Canada's oil sands through collaborative action and innovation
- Industry is improving environmental performance over time
  - Increased water recycling, reduced water use, smaller footprint and faster land reclamation

Other Sectors

- In 2010, emissions intensive and trade-exposed (EITE) industries accounted for approximately 11% of all emissions in Canada
  - Sector includes mining, pulp and paper, cement, iron and steel, chemicals, aluminium, etc.
- Emissions are expected to remain relatively constant to 2020, due to modest growth and continued improvements in emission intensity
- We are now looking to address other major emitting industrial sectors of the economy, after transportation, electricity and oil & gas
- Federal Government also continuing to make progress in other sectors
  - Strengthening energy efficiency standards for products and equipment that contribute to building energy use
  - Improving model national building codes (calling for 25% higher efficiency)
  - Looking at measures to capture methane from landfill gas

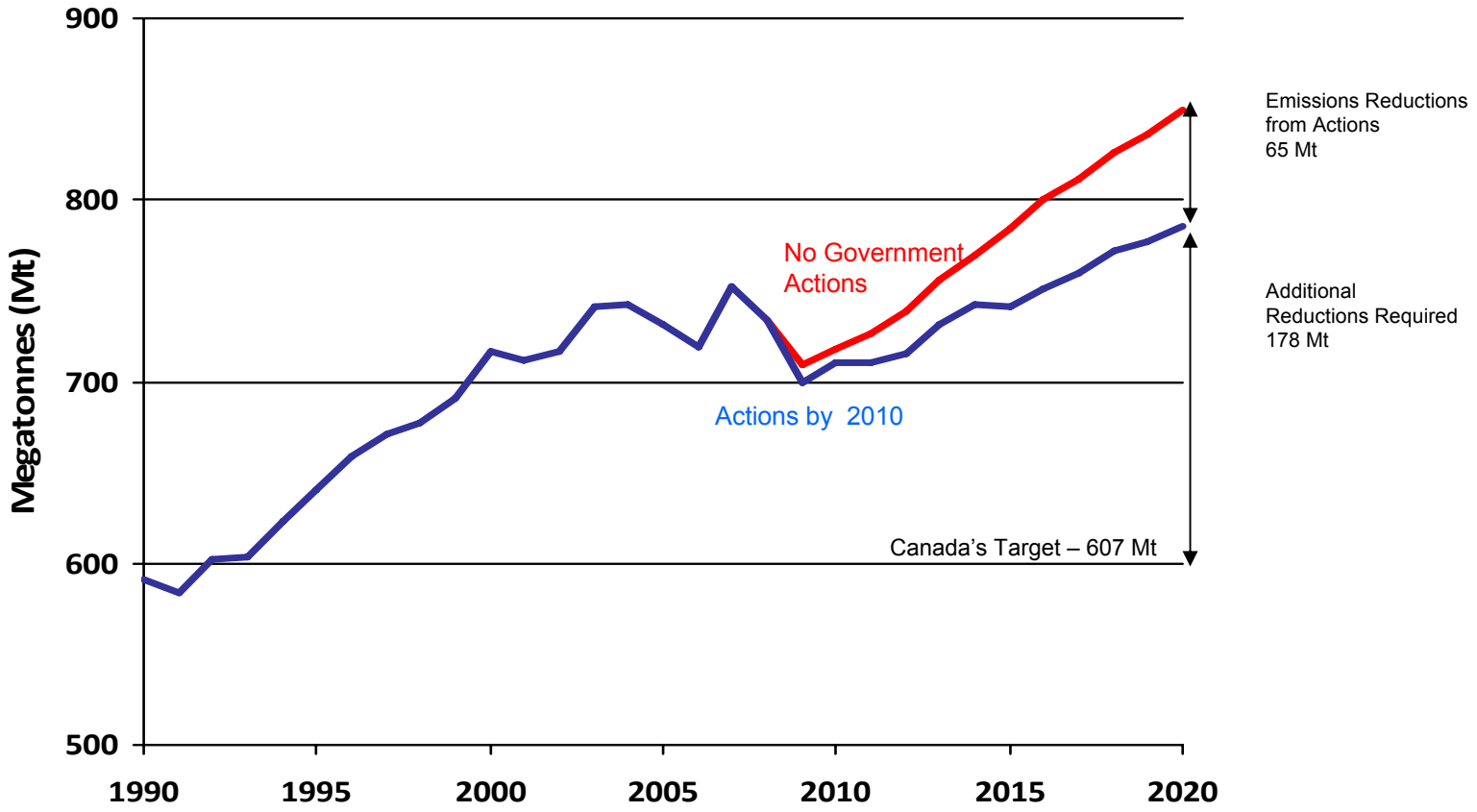
Provinces and territories play a key role in reducing GHG emissions

- Provincial and territorial governments hold many of the levers for action on climate change
  - Responsible for energy and other natural resources management
  - Urban planning and infrastructure development
- Provinces and territories are implementing GHG reduction strategies that reflect their individual circumstances

Provincial and territorial measures complement and add to results from federal measures

- British Columbia, Manitoba, Ontario and Quebec, along with California, are part of the Western Climate Initiative (WCI)
- Carbon tax in British Columbia, broad-based and revenue-neutral
- Carbon levy and cap and trade scheme in Quebec
- Regulatory framework for industrial emissions in Alberta
- Flaring and venting regulations and performance-based measures for oil and gas production in Saskatchewan
- Renewable power feed-in tariffs in Ontario and phase-out of coal fired electricity
- Absolute cap on emissions from electricity in Nova Scotia
- Emissions tax on coal in Manitoba
- Various other measures to support energy efficiency, development of renewable energy and public transit infrastructure

2011 projections showed significant progress from government action - update expected this summer will show further progress



New federal regulations and provincial programs will continue to shift trend line further downward

At the same time, the Government is taking important steps to help Canadians adapt to a changing climate

- Impacts to Canada's climate are occurring and will become more visible, particularly in the North
- Budget 2011 provided $148.8 million over 5 years for improved understanding of climate impacts and adaptation planning, including programs that:
  - Enhance the science foundation
  - Enhance public health and safety
  - Build resilience in the North and Aboriginal communities
  - Enhance the competitiveness of economic sectors
- In addition, $35 million over five years was allocated to support climate change and atmospheric research at Canadian post-secondary institutions

The Government is also addressing climate change by tackling short-lived climate pollutants

- Increased recognition that reducing emissions of short-lived climate pollutants (SLCPs) is a key element of a comprehensive approach to addressing climate change
  - SLCPs include black carbon, ozone, methane and some HFCs
  - Due to their short life span, reducing SLCP emissions will yield a relatively rapid climate response
  - SLCPs are also air pollutants. Actions to reduce emissions will improve air quality, agricultural productivity and protect public health
- Canada is working with international partners through the Climate and Clean Air Coalition (CCAC) to Reduce SLCPs, the Arctic Council and other fora
- Action in this area complements current mitigation efforts on long lived GHGs

Canada is providing $1.2 billion in new and additional climate change financing from 2010/11 to 2012/13

- Canada is working in partnership with developing countries to support effective climate change actions to significantly reduce GHG emissions and increase adaptive capacity
- Canada's fast-start financing is playing a catalytic role in supporting private sector-led innovative mitigation actions in developing countries:
  - $285.72 million to the International Finance Corporation (IFC) to support private sector clean energy projects and $5.83 million to address barriers to private clean energy investment
  - $250 million for the *Canadian Climate Fund for the Private Sector in the Americas* at the Inter-American Development Bank (IDB), expected to leverage an additional $5 billion in private sector climate investments in Latin America and the Caribbean, resulting in an expected 50Mt of GHG reductions
  - $200 million to the Clean Technology Fund (CTF) to support the demonstration, deployment and transfer of low carbon technologies

Other fast start finance initiatives are supporting mitigation actions

- Canada is providing financial and technical support to the development and implementation of nationally appropriate mitigation actions (NAMAs)
  - Partner countries include Brazil, Chile, Colombia, Mexico and Peru
  - Includes initiatives in the housing, landfill gas, and oil and gas sectors
- More than $67 million to support the implementation of sustainable forest management projects
  - $45 million for the Forest Carbon Partnership Facility to address deforestation and forest degradation in developing countries
  - $22 million for the Congo Basin Forest Fund to support and promote forest conservation and sustainable management projects in the region
- $10 million to support projects that reduce emissions of Short-Lived Climate Pollutants, including:
  - $1.8 million for the Global Alliance for Clean Cookstoves to support the deployment of clean cook stoves
  - $3 million to the Clean Air and Climate Coalition to Reduce Short-Lived Climate Pollutants
- More information on Canada's fast-start financing can be found at: http://unfccc.int/files/adaptation/application/pdf/fast_start_finance_progress_report_canada_-_final.pdf

The Government of Canada is committed to sustaining progress on climate change

- Canada takes the challenges of climate change seriously
- Climate change is a global challenge that requires a global solution
- Canada stands firm on its commitment to reduce its GHG emissions by 17% below 2005 levels by 2020
- Canada is playing its part by actively engaging in the UNFCCC and working constructively with its international partners
- Canada is committed to the Durban Platform to reach a new, comprehensive climate change agreement by 2015 applicable to all Parties
- For more information on *Canada's Emissions Trends*, visit http://www.ec.gc.ca/doc/publications/cc/COM1374/ec-com1374-en-toc.htm#ToC