Department of Finance Canada | Ministère des Finances Canada

MEMORANDUM NOTE DE SERVICE

Memo to Deputy Minister	(14)
DMO	3
Assoc. DM (TS) / (MM)	2
Economic & Fiscal Policy	1
LAW / C&C	2
ADM / GD / ADMO (ED&CF)	3
SCAN / Registry / Director	3

Security classification / Classification de sécurité: SECRET

Originator/Telephone number / Auteur/Numéro de téléphone: Bruno Roy (369-3652)

Our file / Notre référence: 2015FIN422996

Your file / Votre référence: [redacted]

Date: JUN 30 2015

TO / À: Paul Rochon

FROM / DE: Richard Botham — Sloss Ezzeddin per

SUBJECT / OBJET: **Existing Suite of Federal Climate Policy Measures**

For information. This note provides an overview of the existing suite of federal measures to address greenhouse gas emissions in Canada.

Issue

Since 2006, the Government of Canada has adopted a regulatory approach to reducing greenhouse gas emissions, complemented with programming in economic sectors that were not being regulated. Under the 2009 Copenhagen Accord, Canada aligned with the United States (U.S.) to adopt a target of a 17 per cent reduction in greenhouse gas emissions below 2005 levels by 2020. [redacted] To date, federal regulations have been implemented for two of Canada's largest sources of emissions: transportation and electricity-generation. This note provides an overview of the existing suite of federal climate policy measures. A list of federal mitigation actions and their estimated greenhouse gas emissions reduction in megatonnes is presented in Annex 1.

Background

Since 2006, the Government has implemented or proposed several measures to reduce greenhouse gas emissions in the transportation, electricity and emissions-intensive and trade-exposed sectors. These measures are expecting to reduce greenhouse gas emissions by about 40 megatonnes per year in 2020.

The following provides a brief description of the measures that have been introduced or are under development by the federal government that are expected to result in reductions to domestic greenhouse gas emissions.

Transportation Sector Measures

Light-Duty Vehicle Greenhouse Gas Regulations (Phase 1): The regulations, implemented in 2011, apply increasingly stringent annual greenhouse gas emission standards to new passenger automobiles and light trucks manufactured in or imported into Canada for the model years

Soren Halverson (613) 369-3628

Canada

s.16(2)(c)

s.69(1)(g) re: (c)

2011-2016. Environment Canada estimates that these actions will reduce carbon dioxide equivalent emissions by 10 megatonnes per year of in 2020.

Light-Duty Vehicle Greenhouse Gas Regulations (Phase 2): Environment Canada amended the Phase 1 Light-Duty Greenhouse Gas Regulations to introduce more stringent standards for the model years 2017-2025. These amendments will enter into force in 2017. Environment Canada estimates that Phase 2 will reduce emissions by 3 megatonnes per year in 2020.

Heavy-Duty Vehicle Greenhouse Gas Regulations: These regulations, implemented in 2014, apply increasingly more stringent annual greenhouse gas emissions standards to new on-road heavy-duty vehicles and engines imported or manufactured in Canada for the model years 2014-2018. Environment Canada estimates that these regulations will reduce emissions by 3 megatonnes per year in 2020.

Carbon Dioxide Standards for Aviation: Under this initiative, Canada is participating in the development of a new international carbon dioxide standard for new airplanes at the International Civil Aviation Organization. Canada plans to adopt the standard once it has been finalized and approved by the International Civil Aviation Organization. The mitigation impact of this initiative has not yet been estimated.

Rail Sector Regulatory Initiative: Canada is working with the U.S. and the North American rail sector to develop an Action Plan to reduce greenhouse gas emissions from the rail sector under the Canada-U.S. Regulatory Cooperation Council. This work builds upon a voluntary agreement between the Government of Canada and the Canadian rail sector, which was renewed in 2013, to reduce greenhouse gas emissions and contaminates produced by locomotives during rail operations. The mitigation impact of this initiative has not yet been estimated.

Energy Efficiency Requirements for Marine Vessels: In 2013, Canada enacted national regulations to implement new energy efficiency requirements that were negotiated under Annex VI of the International Maritime Organization's Convention for the Prevention of Pollution from Ships. The regulations require all vessels of 400 gross tonnages and above to have a Ship Energy Efficiency Management Plan on board, stating how each vessel will increase energy efficiency and reduce greenhouse gas emissions. Additionally, under the regulations new vessels of 400 gross tonnages and above must meet Energy Efficiency Design Index requirements that will increase energy efficiency by 30 per cent by 2025. Transport Canada estimates that the regulations will reduce emissions by 0.4 megatonnes per year in 2020. Transport Canada is also planning to implement adjusted domestic energy efficiency design standards for new Canadian ships operating on Canadian waters only (i.e., domestic trade).

Shore Power Technology for Ports Program: This program provides cost-shared funding for the deployment of marine shore power technology at Canadian ports. This technology allows ships to plug into the local electrical grid to power the vessel instead of using their auxiliary diesel engines when docked. Transport Canada estimates that this initiative will have a small mitigation impact in 2020.

ecoTECHNOLOGY for Vehicles Program: Transport Canada implemented this complementary program in 2011, which tests, evaluates, and provides expert technical information on the environmental and safety performance of advanced light-duty vehicle and heavy-duty vehicle technologies. The program shares technical findings to inform the development of vehicle emissions regulations; guide the proactive development of new or revised safety regulations,

standards, codes and guidelines; and support the development of non-regulatory industry codes and standards to help integrate new vehicle technologies into Canada. This program is not expected to directly result in emission reductions.

Truck Reservation System Program: This program provides funding to projects at Canada's major container ports for the deployment of technologies and practices that improve port-trucking efficiency and environmental performance (e.g., reducing truck idling, wait times at port terminals, and congestion on access roads). The Program is currently working with project proponents (e.g., Canadian Port Authorities) to gather more complete data on truck movements within port areas to better measure greenhouse gas emissions on an ongoing basis and also in certain regions to set a baseline. Transport Canada has not yet estimated the mitigation impact of this initiative.

Energy Sector Measures

Coal-Fired Electricity Generation Regulations: These regulations, under the *Canadian Environmental Protection Act, 1999,* apply a performance standard to new coal-fired electricity generation units and to existing units that have reached the end of their useful life. The regulations were finalized in 2012, and the performance standard of 420 tonnes of carbon dioxide per gigawatt hour enters into force on July 1, 2015. Environment Canada estimates that the regulations will reduce emissions by 3 megatonnes per year in 2020.

ecoENERGY for Renewable Power Program: Natural Resources Canada implemented this program in 2007. The program offers a producer subsidy of one cent per kilowatt-hour of electricity produced over a period of 10 years from a qualifying low-impact renewable energy project built before March 31, 2011. Environment Canada projects that this program will reduce emissions by 6 megatonnes per year in 2020.

Carbon Capture and Storage investment: Budget 2008 provided a one-time allocation of $240 million to a full-scale commercial demonstration of carbon capture and storage in the coal-fired electricity sector in Saskatchewan. The $1.4 billion SaskPower Boundary Dam project captures carbon, which is primarily transported by pipeline to nearby oil fields where it is used for enhanced oil recovery. Environment Canada projects that this initiative will capture and store up to 1 megatonne of carbon dioxide equivalent per year starting in 2014 and over the lifetime of the plant, which is estimated to be 30 years.

Clean Energy Fund: This fund promoted the demonstration of technologies, including large-scale carbon capture and storage projects, and small-scale renewable energy and clean energy systems projects. While the largest carbon capture and storage project was subsequently cancelled due to weak carbon pricing, two smaller ones were funded. Investments under the Fund are expected to result in emissions reductions of up to 2.8 megatonnes per year from 2015 to 2025.

ecoENERGY Efficiency Initiative: Natural Resources Canada launched this initiative in 2011. This program is maintaining federal capacity to improve energy efficiency in Canada to make the housing, building and equipment stock more energy-efficient, energy performance more visible, and industry and vehicle operations more efficient. Environment Canada projects that this initiative will reduce emissions by 6.5 megatonnes per year in 2020. This program features the following components:

- ecoENERGY Efficiency for Buildings provides information and benchmarking tools to improve building energy performance of new and existing buildings.
- ecoENERGY Efficiency for Housing encourages the construction and retrofit of low-rise residential housing, making the stock more energy-efficient through ENERGY STAR and R-2000 certification and home evaluations.
- ecoENERGY Efficiency for Equipment Standards and labelling introduces or raises energy efficiency standards for a wide range of products and promotes energy-efficient products through the ENERGY STAR® initiative in Canada.
- ecoENERGY Efficiency for Industry aids the adoption of an emergency management standard and accelerates energy-saving investments and the exchange of best practices information within Canada's industrial sector.

ecoENERGY Innovation Initiative: Natural Resources Canada launched this initiative in 2011. The program's objective is to support energy technology innovation to produce and use energy in a cleaner and more efficient way through support for research, development and demonstration projects. The program also helps in the search for long-term solutions to reducing and eliminating air pollutants from energy production and use. Activities are funded in the following five areas: energy efficiency, clean electricity and renewables, bioenergy, electrification of transportation, and unconventional oil and gas. As this initiative primarily involves research projects, only minor direct greenhouse gas emissions reductions are expected.

ecoENERGY Technology Initiative: This program, a precursor to the above ecoENERGY Innovation Initiative, was implemented in 2007. The program funded research, development and demonstrations to support next generation technologies that supported zero emissions fossil fuel production and use, as well as clean sources such as renewable and bio-energy. The program contributed $7.2 million to the International Energy Agency Greenhouse Gas Research and Development Programme Weyburn-Midale CO_2 Monitoring and Verification Project, which studied CO_2 geological storage in depleted oilfields. It was conducted in conjunction with two commercial CO_2-enhanced oil recovery operations near Weyburn, Saskatchewan. Natural Resources Canada projects that this program will reduce emissions by 0.2 megatonnes per year in 2020.

Sustainable Development Technology Canada SD Tech Fund: This fund was launched in 2001 and a total of $915 million has been allocated by the Government. To date, the SD Tech Fund has allocated $592 million to support 245 projects across Canada, leveraging an additional $1.5 billion mostly from industry. Greenhouse gas emissions reductions are an indirect and long-term objective of the Fund. These efforts are expected to result in a total cumulative emission reduction of 135.8 megatonnes by 2020. Environment Canada has not yet estimated the annual mitigation impact of this initiative starting in 2020.

ecoENERGY for Aboriginal and Northern Communities: Aboriginal Affairs and Northern Development Canada launched this program in 2011 to support the development and implementation of renewable energy projects that reduce greenhouse gas emissions arising from electricity and heat generation renewable energy projects in Aboriginal and northern communities. The program supports projects that use proven and commercialized technologies that are appropriate to the local conditions, with priority given to projects in northern communities and off-grid communities. Aboriginal Affairs and Northern Development Canada estimates that this initiative will have a small mitigation impact in 2020.

Other Measures

While the following measures are not part of the Government's climate change strategy, they are expected to reduce greenhouse gas emissions as a co-benefit.

Federal Renewable Fuels Regulations: As part of the Government's Renewable Fuels Strategy regulations were implemented in 2010 requiring that gasoline contain an average 5 per cent renewable fuel content and that most diesel fuel contain an average 2 per cent content. Environment Canada projects that these regulations will reduce emissions by 2 megatonnes in 2020.

Pulp and Paper Green Transformation Program: Operating from June 2009 to March 2012, the $1-billion Pulp and Paper Green Transformation Program provided funding to Canada pulp and paper companies for capital projects with environmental benefits. Though not specifically designed as a climate change mitigation mechanism, through projects that improved energy efficiency, enabled fuel switching and added capacity to generate renewable electricity, Environment Canada expects that this program will reduce emissions by 1.4 megatonnes per year in 2020.

Considerations

Canada was the source of 1.6 per cent of global emissions in 2012 and is the 9th largest greenhouse gas emitter in the world. In 2009, Canada aligned with the U.S. to adopt a target of 17 per cent below 2005 levels by 2020. Historical data show that along with positive economic growth from 2006 to 2012, Canada's overall greenhouse gas emissions were below 2005 levels during this period (with the exception of 2007). While Canada's most recent report to the United Nations of historical data, submitted in April 2015, shows an increase in emissions from 2009 to 2013, the new figures remain below 2005 levels.

Since 2011, Canada's climate change strategy has focused on implementing a sector-by-sector regulatory approach, aligned with the U.S. where possible given the high degree of economic integration.

s.21(1)(a)

s.21(1)(b)

On May 15, 2015, Canada committed to reduce its greenhouse gas emissions by 30 per cent below its 2005 levels by 2030, [redacted]

s.21(1)(a)

s.21(1)(b)

Annex 1

Table 1: Federal Mitigation Actions and Their Effects – Policies and Measures

Name of Mitigation Action	Sector Affected	Start Date of Implementation	Estimate of Mitigation Impact in 2020 (Mt CO_2e reduction)
Light-Duty Vehicle GHG Regulations (Phase 1)	Transportation	2011	10
Light-Duty Vehicle GHG Regulations (Phase 2)	Transportation	2017	3
Heavy-Duty Vehicle GHG Regulations	Transportation	2014	3
Carbon Dioxide Standards for Aviation	Transportation	To be determined	Not estimated
Carbon Dioxide Standards for Aviation	Transportation	To be determined	Not estimated
Rail Sector regulatory Initiative	Transportation	To be determined	Not estimated
Energy Efficiency requirements for Marine Vessels	Transportation	2013	0.4
Energy Efficiency Requirements for Canadian Marine Vessels that Serve Domestic Trade	Transportation	To be determined	Not estimated
Shore Power Technology for Ports Program	Transportation	2011	≈0
ecoTECHNOLOGY for Vehicles Program	Transportation	2011	Not estimated
Truck Reservation System Program	Transportation	2013	Not estimated
Reduction of CO_2 Emissions from Coal-Fired Generation of Electricity Regulations	Electricity	2015	3
ecoENERGY for Renewable Power Program	Electricity	2007	6.2
Carbon capture and storage investment in Canada's Federal Budget 2008	Energy	2014	1

Source: Environment Canada, *Canada's Sixth National Report on Climate Change 2014*

Table 1: Federal Mitigation Actions and Their Effects – Policies and Measures (continued)

Name of Mitigation Action	Sector Affected	Start Date of Implementation	Estimate of Mitigation Impact in 2020 (Mt CO_2e reduction)
Clean Energy Fund	Energy	2009	2.8
ecoENERGY Efficiency Initiative	Energy	2011	6.5
ecoENERGY Innovation Initiative	Energy	2011	Not estimated
ecoENERGY Technology Initiative	Energy	2007	0.2
Sustainable Development Technology Canada – SD Tech Fund	Energy	2001	Expected to result in a total cumulative global emissions reduction of 135.8 megatonnes by 2020.
ecoENERGY for Aboriginal and Northern Communities	Energy	2011	≈0
Federal Renewable Fuels Regulations	Transportation	2010	2
Pulp and Paper Green Transformation Program	Emissions-Intensive and Trade-Exposed	2009	1.4

Source: Environment Canada, *Canada's Sixth National Report on Climate Change 2014*

(FOLD HERE) (PLIER ICI)

Department of Finance Canada | Ministère des Finances Canada

For Signature by / Information of À signer par / Pour l'information de Deputy Minister	
Prepared by (name/initials/division) Préparé par (nom/initiales/division) Bruno Roy B.R. Microeconomic Policy Analysis	Chief Chef SW Suzanne White
In consultation with (name/initials/branch(es)/division(s)) En consultation avec (nom/initiales/direction(s)/division(s))	
Approved by Approuvé par	
Director Directeur	Soren Halverson
General director Directrice générale	Leah Anderson
Assistant Deputy Minister Sous-ministre adjoint	Richard Botham RE
Clifford Clark V. E. Économiste invité Clifford Clark	
Associate Deputy Minister & G7 Deputy for Canada Sous-ministre délégué et représentant du Canada au G7	Timothy Sargent
Associate Deputy Minister Sous-ministre déléguée	Marta Morgan
Deputy Minister Sous-ministre	Paul Rochon
Remarks Remarques:	
File no. No de dossier 2015FIN422996	Date JUN 30 2015

Associate Deputy Minister & G7 Deputy for Canada **Sous-ministre délégué et représentant du Canada au G7**	**(Sign on behalf of DM)** **(Signer au nom du SM)**	☐
Associate Deputy Minister **Sous-ministre déléguée**	**(Sign on behalf of DM)** **(Signer au nom du SM)**	☐
Assistant Deputy Minister **Sous-ministre adjoint(e)**	**(Sign on behalf of DM)** **(Signer au nom du SM)**	☐