RESOURCE-RICH CANADA STRENGTHENS ITS CLIMATE CHANGE INITIATIVES

– A FOCUS ON IMPLEMENTING INITIATIVES SPECIFIC TO THE INDUSTRY OF EACH PROVINCE –

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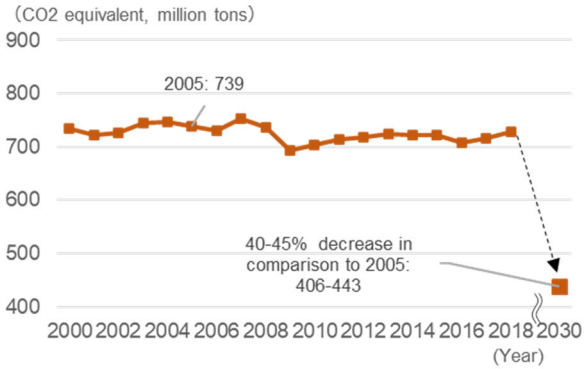
SUMMARY

- Canada introduced a federal carbon pricing system in 2019 to reduce greenhouse gas (GHG) emissions. The country currently plans to gradually increase the carbon price to achieve its goal of a 40-45% reduction from 2005 levels by 2030.
- Each province is allowed to adopt a province-specific carbon pricing system. For this reason, the carbon pricing systems in place vary among the provinces. Some provinces are reluctant to introduce the carbon pricing systems or have relaxed the requirements for companies to apply the systems. Due to the differences in the systems, the government of each province has different support initiatives for companies to reduce emissions.
- Key challenges to achieving the goal includes supporting the development of emission reduction technologies tailored to the characteristics of each province's industry through province-specific emissions trading, raising the carbon price more significantly and developing technologies that have not yet been commercialized.

1. CHANGES IN CANADA'S GHG REDUCTION TARGETS

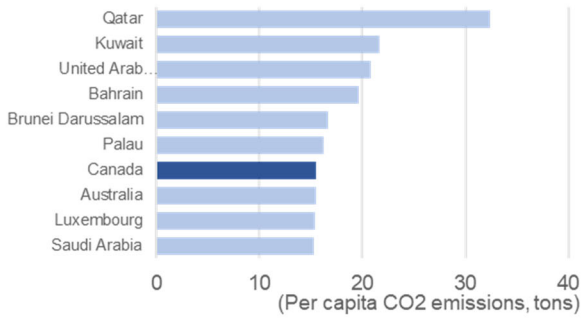
Canada began to take a more proactive stance on reducing greenhouse gas (GHG) emissions from 2015, when Trudeau's Liberal government took office. In 2016, the country signed and ratified the Paris Agreement, setting a goal of reducing GHG emissions by 30% by 2030, compared to 2005 levels. The country introduced a federal carbon pricing system in 2019 as a policy that plays a major role in achieving the goal. In December 2020, the government decided to step up its efforts by raising the annual increase in the carbon price, thus reaching CAD 170 per ton of carbon equivalent by 2030. Afterward, it set a goal of reducing GHG emissions by 40-45% by 2030, compared to 2005 levels (Figure 1). Canada is one of the world's leading producers and exporters of natural resources and its per capita carbon emissions are the seventh highest in the world (Figure 2). Canada,

Figure 1: Trends in Canada's GHG emissions and reduction goals



Source: Prepared by MGSSI based on data released by the Government of Canada

Figure 2: Top 10 countries in per capita carbon emissions (2018)



Source: Prepared by MGSSI based on data from The World Bank

a resource-rich country, is actively working to reduce GHG emissions, although taking climate change action would have a significant impact on its economy. This paper will take a deeper look at Canada's climate change initiatives, especially carbon pricing, a system that is expected to reduce GHG emissions, and summarize the challenges in its implementation.

2. CANADA'S EFFORTS TO REDUCE GHG EMISSIONS

2-1. Five major provinces' varying attitudes toward initiatives

In terms of GHG emissions by province/territory, Alberta has the highest emissions, followed by Ontario, Quebec, Saskatchewan, and British Columbia. The total emissions of these five provinces in 2019 were 663 million tons, which is more than 90% of Canada's total emissions (730 million tons). Efforts by these major carbon emission provinces will be key to achieving the goal. In Canada, provinces have developed their own carbon pricing systems[1] and are allowed to adopt their own systems if certain criteria are fulfilled. However, if certain criteria are not met, the federal government's system is compulsorily applied. For this reason, the carbon pricing system adopted by each province is not uniform, and the carbon price varies among provinces (Figure 3).

Figure 3: Carbon pricing systems in five major provinces

Province (abbreviation)	Carbon pricing system	Carbon price (Canadian dollars, as of April 2021)	Coverage rate of emission sources	Lower limit of annual emissions of facilities subject to emissions trading	Main industries covered by emissions trading
British Columbia (BC)	Provincial carbon taxes/ province emissions trading (LNG business)	45	80%	—	・LNG business only
Quebec (QC)	Provincial emission trading	22.5	80%	25,000 tons	・Industrial facilities such as aluminum refineries, cement plants, chemical plants, oil refineries, chemical plants, steel mills, and mines; power generators; distributors of fossil fuels
Ontario (ON)	Federal carbon tax/ Federal emission trading	40	80%	50,000 tons	・Oil and gas production; mineral refining (such as cement production); chemicals; pharmaceuticals; iron, steel and metal tube production; mining and ore processing; nitrogen fertilizers; food processing; pulp and paper; automobile manufacturing; power generation
Alberta (AB)	Federal carbon tax/ Provincial emission trading	40	80% (the provincial system accounts for 60%)	100,000 tons	・Any facility that exceeds the minimum annual emissions limit is eligible
Saskatchewan (SK)	Federal carbon tax/ Federal and provincial emission trading	40	60% (the provincial system accounts for 20%)	・Province: 25,000 tons ・Federal: 50,000 tons	・Province: pulp mills, ethanol manufacturing, steel mills, mining, canola crushing plants, fertilizer production, oil and gas refining ・Federal: Power generation, natural gas transportation pipelines

Note 1: A facility may voluntarily participate in emissions trading under certain conditions, even if it is below the lower limit of facilities eligible for emissions trading.
2: The coverage of emission sources provides a rough estimate based on data released by each state government and previous studies.
3: Companies that emit 0.16 tons or more of CO2 equivalent per ton of LNG produced are subject to British Columbia's emissions trading.
4: Ontario will transition to its own emissions trading in January 2022.
5: Carbon price refers to the price per ton of carbon equivalent. Quebec's carbon price is the lowest price at auction.
Source: Prepared by MGSSI based on materials from provincial governments and Sarah Dobson, Jennifer Winter and Brendan Boyd "The Greenhouse Gas Emissions Coverage of Carbon Pricing Instruments for Canadian Provinces"

Of the five major provinces, British Columbia and Quebec were the first to introduce their own systems and take proactive initiatives to reduce GHGs. British Columbia was the first province in North America to introduce a carbon tax on GHG emissions from the combustion of all fossil fuels used in the province, with a few exceptions, starting as early as 2008. Quebec also introduced an emissions trading system in 2013. Each province's system covers about 80% of the emission sources.

In contrast, the remaining three provinces were reluctant to apply carbon pricing to a wide range of sectors. These three provinces have their own systems, which are deemed inadequate by the federal government due

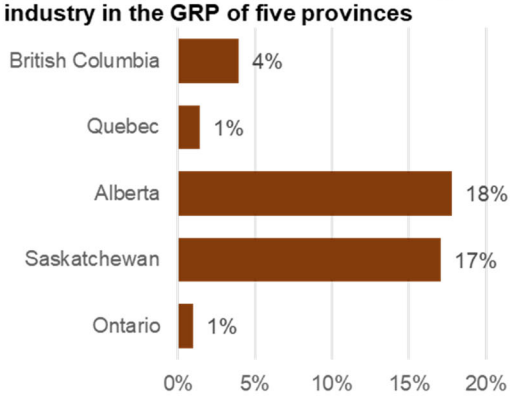
[1] One measurement for whether a certain standard is met is whether the province's system covers emission sources in the transportation sector, such as automobiles, railroads, and airports, as well as fuel combustion in facilities such as boilers and incinerators. Carbon pricing systems in provinces that meet the criteria cover about 60-80% of emission sources.

to the narrow scope of emission sources covered. In these provinces, the federal system (including carbon taxes and emission trading for some businesses) is being applied instead. The three provinces had filed a lawsuit in the courts claiming that this application of the federal system violated their jurisdiction and was unconstitutional. However, the Supreme Court ruled in March 2021 that the federal system is constitutional because global warming that causes harm beyond provincial boundaries is a national concern as defined by the Constitution; it is the federal government that has jurisdiction over that issue.

2-2. Background to the varying attitudes toward initiatives

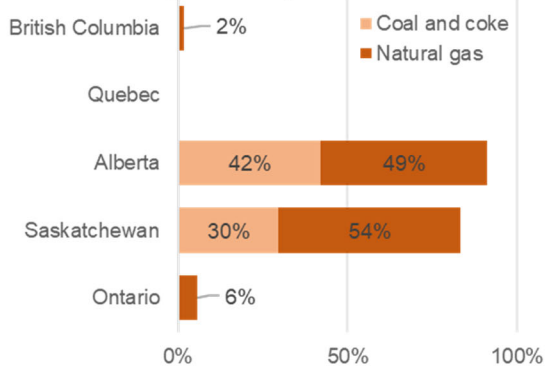
As descrived above, some provinces have made early and aggressive efforts to reduce GHG emissions, while others are so reluctant that they only have inadequate systems or oppose the application of the federal system. The first reason behind this is the difference in the dependence of their industries and economies on resources. In the reluctant provinces, the share of the coal, oil, and gas industries in the Gross Regional Product (GRP) is as high as 20% (Figure 4). Coal and natural gas also tend to account for a high percentage of power generation sources in these provinces, at over 80% (Figure 5).

Figure 4 Proportion of coal and natural gas industry in the GRP of five provinces



Note: Data as of 2017
Source: Prepared by MGSSI based on data from Statistics Canada

Figure 5: Proportion of power generation from coal and natural gas in five provinces



Note: Data as of 2019
Source: Prepared by MGSSI based on data from Canada Energy Regulator

The second reason is the difference in approaches to climate change among political parties. Liberal parties are developing active climate change initiatives, while conservative parties tend to be more passive. In Alberta, for instance, the center-left New Democrats launched the province's own climate change Initiatives in 2015, which included a carbon tax on households and small-scale emitters. However, when the Conservatives came to power in 2019, they immediately passed a bill to repeal the carbon tax.

3. AREAS RECEIVING INVESTMENTS FROM REVENUES GENERATED BY THE CARBON PRICING SYSTEM

3-1. Province-specific carbon pricing system to help companies reduce emissions

Provinces with their own carbon pricing systems have invested revenues from the systems in support for their industries and in efforts to reduce emissions.

In British Columbia, the province is providing incentives to companies that reduce their emissions, and is also developing the CleanBC Industrial Fund to invest in projects for companies that reduce their emissions (Figure 6). Together, the incentives and funds aim to reduce annual emissions by 2.5 million tons in 2030.

Figure 6: Major corporate support policies through federal and provincial carbon pricing schemes

	Name of corporate support policy	Overview	Major achievements
Federal	Climate Action Incentive Fund (CAIF)	Up to 25% of project costs for SME projects, $20,000 to $250,000 per target company	Major projects including shifts to low-emission fuels, energy conservation in buildings, and improvement in energy efficiency in waste management
BC	CleanBC Industrial Incentive Program (CIIP)	Providing incentives for companies that reduce their emissions below a benchmark	Was under trial in 2019 and 2020. Began full-scale operations in 2021.
	CleanBC Industry Fund	Pooling carbon tax revenues into a fund, from which investments are made in companies	Projects such as replacing diesel haul trucks used in mines with electric haul trucks, and switching fuel from coal to natural gas which emits less GHG
QC	Electrification and Climate Change Fund (FECC)	Pooling revenues from emissions trading into a fund to allocate the money to projects aimed at reducing emissions	Pre-commercial innovations in electric vehicle purchase, home charging station installation, energy efficiency, renewable energy, bioenergy, and reduction of GHG emissions
AB	Technology Innovation and Emissions Reduction (TIER) Fund	Pooling revenue generated through the province's emissions trading system (TIER) into a fund to use the money to develop new clean technologies to reduce emissions in Alberta	Improvement of oil sands extraction methods, research on carbon capture, utilization and storage, etc.

Note: Ontario and Saskatchewan are also considering investing revenues from their own emissions trading schemes into a fund (Emissions Reduction Fund in Ontario and the Saskatchewan Technology Fund) that would be used to help companies reduce their emissions

Source: Prepared by MGSSI based on materials from the federal government and provincial governments

Quebec pools the revenues from emissions trading into the Electrification and Climate Change Fund and allocates them to projects aimed at reducing emissions. As more than 90% of the electricity generated in the province comes from hydropower, the provincial government is trying to reduce emissions by promoting electrification in the transportation sector, which accounts for most of the province's GHG emissions. Specifically, it has contributed substantial amounts to support the purchase of electric vehicles and the installation of home charging stations. The provincial government estimates that the cumulative investment through the fund will amount to several billion dollars by 2030.

3-2. Federal government's carbon pricing system to help companies reduce emissions and provincial governments' systems

As far as the other three provinces are concerned, certain provinces have implemented their own systems, but the federal government's system is compulsory because their province-specific systems do not meet certain standards. A portion of the federal government's revenue is used to support companies in provinces where only the federal system is applied. In provinces where both the federal and provincial carbon pricing systems are applied, a portion of the revenue from each system is used to support companies.

First, the revenue generated from the federal carbon pricing system is distributed from the federal government to the provinces. Each province allocates about 90 percent of the allocated revenue to income compensation for households. The remaining 10% or so goes into supporting SMEs and sectors vulnerable to increased costs. The Climate Action Incentive Fund (CAIF) is one such initiative (Figure 6).

Alberta has also launched an initiative to collect a portion of the revenue from the province's own emissions trading and deposit it into a fund. That money is used to support companies in improving oil sands extraction methods and researching carbon capture, utilization, and storage. Ontario and Saskatchewan are also considering the possibility of using revenues from their own emissions trading schemes to help companies reduce their emissions but have not yet determined the details including what projects to receive the funds.

4. CHALLENGES IN ACHIEVING GHG REDUCTION TARGETS

Canada is working to implement a carbon pricing system as a policy that will play a major role in meeting its emission reduction targets. However, as we have seen in this report, each province's carbon pricing system is different, and some provinces are more willing to introduce it while others are more reluctant. Each province also has a different approach to corporate support initiatives. This last section looks at Canada's challenges to achieving its GHG emission reduction targets and the measures needed to achieve them, referring to the contents discussed earlier in this report and previous studies.

The first challenge is to change the provinces' reluctant attitude toward the initiatives. One way to do so is to expand the province's own emissions trading system. This means investing the revenue generated from emissions trading in the development of emission reduction technologies tailored to the characteristics of the economy and industry in each province. In June 2021, the five largest oil sands companies producing 90% of Alberta's oil sands announced that they would reduce GHG emissions from their operations to net zero by 2050 through various initiatives. These include electrification, fuel substitution, energy efficiency, carbon capture, process improvements, and new technologies.[2] The five companies have announced that they hope to cover more than 60% of the cost of their efforts with government subsidies. About 30% of Alberta's GHG emissions come from the oil sands. If the provincial government cooperates in reducing emissions from this industry, it will help the entire province reduce its emissions.

The second challenge is the possible need for wider measures, such as a more substantial carbon price increase and the development of technologies that have yet to be commercialized. The Fraser Institute, a conservative think tank in Canada, argues that even if the goals set in the Paris Agreement are met, Canada would need to raise the price of carbon to CAD 295. This would be very harmful to the economy: It is estimated that there will be a 3.6% drop in GDP growth in 2030.[3] The Canadian Institute for Climate Choices, an independent think tank, believes that it is possible to achieve the targets set in the Paris Agreement for 2030, but that this will depend on the progress of technologies that are not yet fully commercialized (such as carbon capture and hydrogen).[4] The federal and provincial governments have corporate support initiatives such as those described in this report and the revenues generated by carbon pricing and emissions trading. It should be noted to what extent those revenues and other sources of funding will help encourage the development of climate change technologies in Canada.

[2] Oil Sands Pathways to Net Zero https://www.oilsandspathways.ca/
[3] Ross McKitrick and Elmira Aliakbari "Estimated Impacts of a $170 Carbon Tax in Canada" Fraser Institute (2021)
[4] Canadian Institute for Climate Choices "Canada's Net Zero Future" (2021)