

A CLOSER LOOK AT THE CARBON FOOTPRINT OF CANADIAN BANK PORTFOLIOS

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EXECUTIVE SUMMARY

As of spring 2022, none of the top eight Canadian deposit-taking institutions (DTIs) had yet disclosed total emissions financed by their credit and investment portfolios. These eight institutions—Desjardins, National Bank, Laurentian Bank, Bank of Montreal, CIBC, Scotiabank, Royal Bank of Canada and Toronto-Dominion Bank—report all emissions related to their day-to-day operations and supply chains, but none has yet fully costed its financed emissions (credit and investment).

While the eight major Canadian DTIs have committed to measuring their financed emissions, the information available at this time suggests that their calculation methods do not provide a complete picture. Several have said they would commit to counting only emissions financed through their portfolio of loans (National Bank, RBC and Scotiabank). National Bank and RBC (along with BMO and TD) say they are aiming for carbon neutrality by 2050, but only for their loan portfolio, while Scotiabank does not say what its target encompasses. Desjardins's current commitment is to zero net emissions by 2040, but only for its assets in the energy, transportation and real estate sectors.

Given the above, Oxfam-Québec and its partners wanted to delve deeper. In conjunction with *Carbon4 Finance* and *Institut de recherche en économie contemporaine*, a study was conducted to quantify, analyze and compare GHG emissions financed by the portfolios of Canada's leading DTIs. The purpose of this report is to provide our key findings, but also and importantly to raise awareness among the public, policy makers and the financial institutions themselves of the scale and potential consequences of their carbon footprint.

The methodology used for this report—*Carbon Impact Analytics* (CIA), developed by *Carbon4 Finance* (see Appendix 1)—is internationally recognized as one of the most comprehensive and accurate for calculating financed emissions. This analysis includes loans to individuals, businesses and the public sector, residential and commercial mortgages, land and real estate portfolios, equity investments in public and private enterprises and corporate, government and sovereign bonds. Our aggregate financed emissions therefore represent between 77% (RBC) and 95% (Laurentian) of the total assets of each of the eight DTIs, or nearly C\$5.670 trillion of the C\$6.934 trillion reported on 2020 balance sheets, for an average of 82%.

1,906,741,640 tonnes: this is the total carbon weight (CO₂ eq.) of these eight institutions as determined for 2020, or more than two and a half times the total carbon weight of Canada as a whole (730 million tonnes in 2019) and nearly 23 times that of Quebec (84 million tonnes in 2019). Total emissions financed in 2020 by the asset portfolios of the eight major Canadian DTIs therefore represented approximately 2.6 times the total emissions reported by Canada in 2019. If the top eight Canadian DTIs were a sovereign country, they would have counted as the fifth largest emitter of greenhouse gases in the world at the end of 2020 in terms of asset-backed emissions, behind China, the United States, India and Russia.

TD and RBC alone finance more emissions than all of Canada generates annually, while Scotia-financed emissions alone exceed the total carbon footprint of Canada's oil and gas sector by 85%. The emissions financed by CIBC, which were medium in scope, were nonetheless 24% higher in 2020 than emissions from all of Canada's transportation sector in 2019. Similarly, emissions financed by the four Quebec DTIs (Laurentian, Desjardins, National Bank and BMO) represent no less than six times Quebec's total carbon weight. In 2020 emissions financed by Laurentian alone exceeded the total carbon footprint of Quebec's agricultural sector by more than four million tonnes. Desjardins and National Bank respectively financed GHG emissions equivalent to two to three times the total emissions generated by Quebec's transportation sector.

However, aggregate assets in Canadian DTI credit and investment portfolios vary considerably, so the only way to compare carbon weight is to put everything on an equal footing by determining the *intensity* of financed emissions for each DTI, expressed in tonnes (CO₂ eq.) per C\$1 million of assets. Compiled this way, the carbon footprints of the National Bank and BMO portfolios appear to be the largest of the eight major Canadian DTIs, at 391 and 376 tonnes of GHGs/C\$ million respectively. This is followed by Scotiabank at 372 t/\$M, CIBC at 370 t/\$M, TD at 322 t/\$M and RBC at 294 t/\$M. Laurentian Bank is next at 280 t/\$M, with Desjardins the least carbon intensive in its financing and investment activities with 256 t/\$M.

Overall, the average carbon intensity of the eight Canadian DTIs was 332 t/\$M, compared to 350 for Canada as a whole (tonnes CO₂ eq. per million \$ GDP). As a result, Canadian DTIs are slightly *less* carbon intensive than Canada itself with its highly carbon-intensive economy (particularly compared to Quebec). In contrast, the portfolios of the eight largest Canadian DTIs are more carbon intensive than Quebec. At 207 t/\$M for Quebec as a whole (2019), for every tonne of GHG emitted by Quebec as a whole, each of the major Canadian DTIs financed between 1.24 and 1.89 tonnes. For illustrative purposes, each client with \$1,000 in savings on deposit “finances” between 0.25 tonnes (Desjardins) and 0.39 tonnes (National Bank) of GHGs per year, with the average of 0.33 tonnes for our eight DTIs.

To assess whether it is plausible to hope that emissions financed by Canadian bank portfolios will drop drastically and that more funds will be made available for the ecological transition, emissions *saved* by the eight DTIs. must also be considered This essentially refers to the extent by which their portfolios *reduce* and *prevent* GHG emissions by individuals, businesses, organizations and governments. These emissions savings include emission levels 1 to 3 and thus measure the *positive* impact of DTI credit and investment when it serves to finance energy efficiency projects, the development and deployment of green technologies, carbon capture, renewable fuel production, electrification of transportation or industry and so on.

Here again, it is more evocative to analyze the relative contribution of each DTI in terms of the *intensity* of the emissions it has saved, in tonnes (CO₂ eq.) per million dollars of financing and investment. In terms of intensity, emission savings by Laurentian (10 t/\$M) and Desjardins (15.5 t/\$M) are relatively low as their portfolio-*financed* emissions are already the lowest among the eight Canadian DTIs and therefore they are already financing lower carbon sectors. On the other hand, emission savings by BMO (25.2 t/\$M) and National Bank (22.3 t/\$M) are particularly strong. That means that in addition to or as part of their financing of carbon intensive sectors such as fossil fuels, BMO and National Bank are also backing a number of projects, technologies and products that contribute to decarbonization.

Yet, for all DTIs without exception, the emissions saved represent a very small share of the total emissions financed. Regardless of whether ratios are calculated on the basis of total emissions or emission intensities, the conclusion is the same (Chart 13): none of the top eight Canadian DTIs has a “carbon impact ratio” (emissions saved/ emissions financed) greater than 10%, with the range fluctuating from 3.6% (Laurentian) to 7% (RBC). Per 100 tonnes of GHGs (CO₂ eq.) financed, DTIs “save” only 5 on average. These carbon impact ratios are very clearly insufficient given the emissions targets that Canadian DTIs have set for themselves. In order to achieve carbon neutrality for their loan portfolios, this ratio should be 100%, with all emissions financed offset by emissions saved.

Of course, it would be wrong to say that Canada’s big DTIs are not making any concrete financial efforts to support and accelerate the green transition. This is reflected in their environmental, social and governance (ESG) and other climate strategy documents. Nevertheless, there are two fundamental nuances. First, not only have none of Canada’s major DTIs committed to withdrawing from the fossil fuel sector in the short or medium term, but they all persist in presenting themselves as participants in the energy transition and sustainable financing aimed at either decarbonizing the processes of extraction, transformation and/or use of fossil fuels or



supporting diversification of the “green” asset portfolios of companies in the sector, particularly in the areas of green technologies and renewable energy.

Second, even in terms of their *financial* commitments to the energy and environmental transition, Canadian DTIs have set their sights relatively low: For example, the total C\$850 billion pledged by BMO, RBC, Scotiabank, CIBC and TD for 2020–2030, while not inconsiderable, will ultimately represent only two-thirds of their previously committed fossil fuel assets between 2016 and 2020 alone, which were in excess of C\$1.3 trillion. In addition, many of the mutual funds and exchange-traded funds of the eight Canadian DTIs, including ESG or “green” funds, are still not aligned with the Paris Agreement targets, exceeding the maximum exposure to carbon sectors that would limit global warming to less than two degrees.

As a result, and in particular because these are collective issues by their very nature, but also because the DTIs have not yet made progress at the pace needed to deal with the climate crisis, *governments* must do more and provide the regulatory framework necessary for sustainable financing. It is up to all of us, collectively, to demand action. On this basis, the report makes various general recommendations to the Canadian federal and provincial governments, as well as to the financial regulators and supervisors of both levels of government:





RECOMMENDATION #1

That full implementation of *the final recommendations of Canada's Expert Panel on Sustainable Finance* be accelerated, and that federal Bill S-243 (*An Act to enact the Climate-Aligned Finance Act and to make related amendments to other Acts*) be adopted and implemented as quickly as possible.

RECOMMENDATION #2

That a legal obligation to compile and disclose all of their operational and financed emissions (levels 1, 2 and 3 for all sectors, all asset classes and in full geographic coverage) be imposed on Canadian deposit-taking institutions.

RECOMMENDATION #3

That the definition and scope of the fiduciary duty of Canadian DTIs be clarified (as also proposed by Canada's Expert Panel on Sustainable Finance and Bill S-243) and modified as needed to establish and/or increase the relative importance of climate risks.

RECOMMENDATION #4

That each Canadian DTI be required to develop, adopt and publish by 2025 an action plan to realign all of its portfolios with the Paris Agreement (carbon neutrality by 2050) and explain precisely how this will be achieved, including five-year intermediate targets to be met.

RECOMMENDATION #5

That by 2025 Canada and/or Quebec adopt a "green taxonomy," *as the European Union has done*, based on harmonized technical criteria at the Canada/Quebec level, so as to establish a classification of industrial sectors, economic activities and products (including financial) considered "sustainable" and/or "environmentally and climate responsible."

RECOMMENDATION #6

That Canadian federal and provincial governments, as well as their Crown corporations and other financial entities, fully disengage from the fossil fuel sector by 2025.

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1. INTRODUCTION: CRUCIAL RESPONSIBILITIES OF THE FINANCIAL SECTOR

1.1. Quantifying for better progress

A historic shift in the management, credit and investment strategies of Canada's major deposit-taking institutions (DTIs)¹ is essential if Canada and Quebec are serious about meeting the greenhouse gas (GHG) emission reduction targets they have set for themselves. Not only will these institutions have to decarbonize their portfolios while managing the associated risks and losses, but they will have to at the same time remobilize a substantial portion of their assets in order to contribute to the enormous effort that will be needed to finance the energy transition itself.

According to a conservative estimate, close to C\$13 billion in annual investments will be required just to achieve a 30% reduction in Canada's GHG emissions from 2005 levels by 2030,² a target that is 10 to 15 percentage points lower than the target now set by the federal government (-40% to -45% by 2030 compared to 2005 levels). For comparison purposes, for example, the Canadian federal government announced in its "2030 Emissions Reduction Plan" a total new investment of just over C\$9 billion by 2030.³

In the longer term, RBC estimates that C\$2 trillion will be required to achieve carbon neutrality in Canada by 2050, equivalent to C\$70 billion *annually* for 30 years,⁴ close to C\$60 billion more than is currently spent every year.⁵ McKinsey, meanwhile, pegs this estimate at 6% of Canada's GDP annually by 2050, or more than C\$3.6 trillion based on 2021 GDP (or C\$127 billion annually).⁶

Canada's major DTIs, with immense financial clout, will face similar responsibilities as a result. Because this knowledge will be a prerequisite for developing effective decarbonation strategies, the first of these responsibilities is for these institutions to measure and then disclose the carbon footprint of their credit and investment portfolios. They (and/or their asset management subsidiaries) have all committed to this by joining international initiatives such as the Glasgow Financial Alliance for Net Zero (GFANZ) as well as the Partnership for Carbon Accounting Financials (PCAF), the Carbon Disclosure Project (CDP), the Principles for Responsible Banking (PRB), the Principles for Responsible Investment (PRI) or the Task Force on Climate-related Financial Disclosures (TCFD),⁷ among others.

They have also committed to this internally—with the exception of Laurentian and Scotiabank—by signing the *Statement by the Quebec Financial Centre for a Sustainable Finance* (Desjardins, National Bank) or *Canadian Investor Statement on Climate Change* (Desjardins, National Bank, BMO, RBC, CIBC, TD). These six DTIs and/or their subsidiaries are also members of the Responsible Investment Association (RIA), whose main mandates include the promotion of greater environmental transparency, but also the implementation of recommendations made by Canada's Expert Panel on Sustainable Finance.⁸

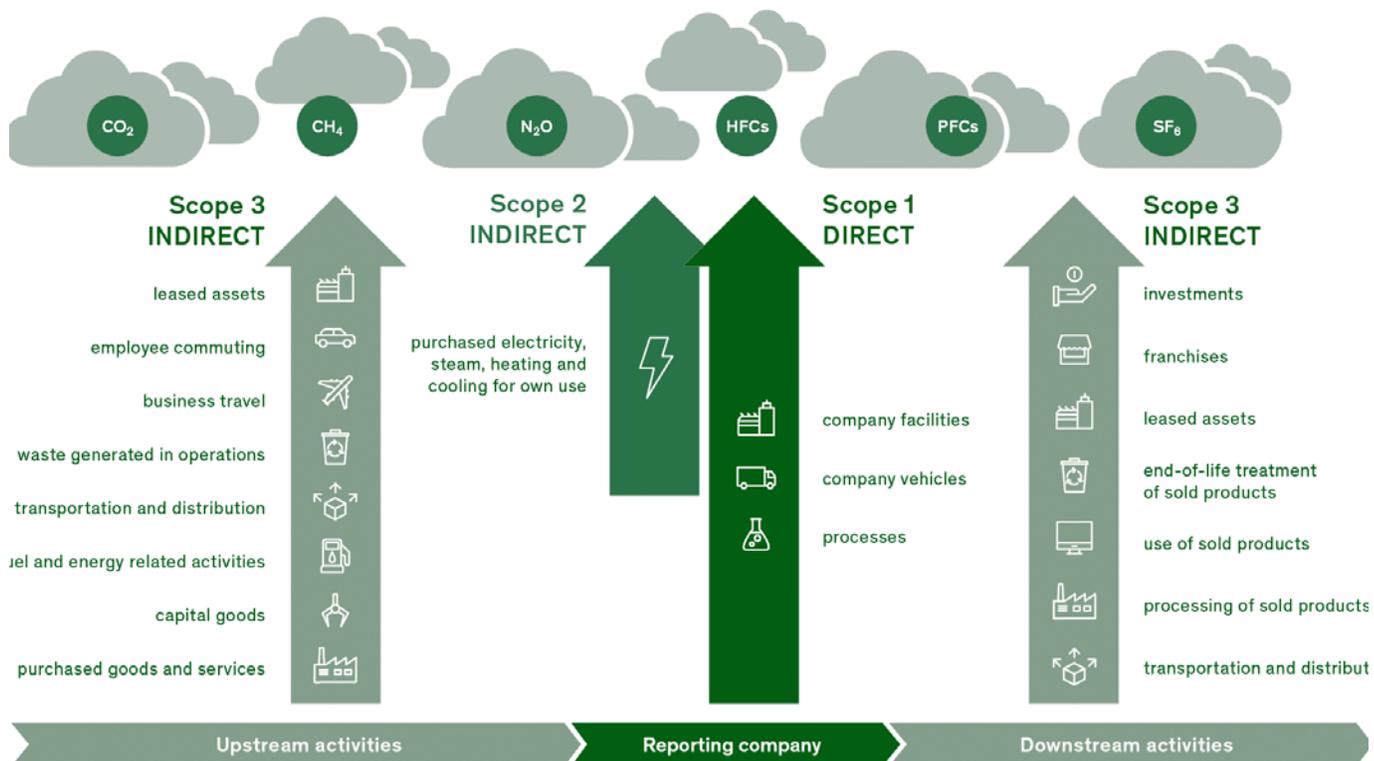
In its Final Report, submitted to Environment and Climate Change Canada in 2019, this Panel recommended, among other things, that Canadian banks implement the TCFD framework for action,⁹ which includes the measurement and disclosure of financed emissions, by 2024. However, this measurement of financed emissions can be complex, particularly because all companies and organizations that make up financial institutions' credit and investment portfolios do not systematically measure or disclose their own GHG emissions.¹⁰

According to the TCFD itself, which has more than 1,000 member financial institutions representing US\$194 trillion in assets, only 27% of banks disclose their GHG emissions at Level/Scope 1 (direct emissions related to current operations and buildings), Level/Scope 2 (indirect emissions related to energy supply) and Level/Scope 3 (indirect emissions related, for example, to supply chains and, especially, to emissions financed by asset portfolios).

It is therefore not surprising that, as of the spring of 2022, since they are not yet legally required to do so and since the vast majority of their international counterparts are no further ahead in this regard, none of the top eight Canadian DTIs had yet disclosed the total emissions financed by their credit and investment portfolios.¹¹ These eight institutions report all Level 1, Level 2 and, in some cases, Level 3 emissions related to their day-to-day operations and supply chains, but none have yet fully costed their financed emissions (Level 3: credits and investments).

In this context, Oxfam-Québec and its partners wanted to delve deeper and tackle the problem head on. In conjunction with *Carbon4 Finance* and *Institut de recherche en économie contemporaine*, a comprehensive study was conducted to quantify, analyze and compare, more precisely than has been done to date, GHG emissions financed by the portfolios of Canada's leading DTIs. The purpose of this report is to provide our key findings, but also and importantly to raise awareness among the public, policy makers and the financial institutions themselves of the scale and potential consequences of their carbon footprint.

Figure 1. Typology of a company's GHG emission levels (scopes 1, 2 and 3) for compilation according to the Greenhouse Gas Protocol (GHG Protocol)¹²



The fight against climate change is a concern shared by everyone, but, insofar as it involves means controlled by financial institutions, it is essential to review the way in which these institutions carry out their responsibilities. Historic heat waves, out-of-control forest fires, catastrophic flooding—all of this devastation that struck Canada over the past year reminded us that the country is not immune to global warming and is even one of the main drivers. The responsibility of Canada's significant oil and gas industry¹³ springs to mind, but what about its sponsors?

As it turns out, this is the key question, and the data are dizzying: **if the top eight Canadian DTIs were a sovereign country, they would have counted as the fifth largest emitter of greenhouse gases (CO₂ eq.) in the world at the end of 2020 in terms of asset-backed emissions**, behind China, the United States, India and Russia, but ahead of Brazil, Japan, Germany, Saudi Arabia or France and very far ahead of Canada.¹⁴

1,906,741,640 tonnes: this is the total carbon weight (CO₂ eq.) of these eight institutions as determined for 2020, more than two and a half times the total carbon weight of Canada as a whole, 730 million tonnes (2019) and close to 23 times that of Quebec, 84 million tonnes (2019).¹⁵ We are not talking about direct emissions from these institutions as energy, resource and material consumers, but about "asset-backed" emissions indirectly through their loan and investment portfolios. These include direct (Level 1 and Level 2) and indirect (Level 3) emissions produced by individuals (personal and mortgage loans), companies (loans, bonds, stocks), governments and public companies (bonds, sovereign bonds) or even buildings (land/real estate investments) that make up the asset portfolios of DTIs.

Therefore, any comparison between these emissions financed by major Canadian DTIs and total emissions from Quebec, Canada as a whole or other countries is mentioned here for illustrative purposes. They are compiled using a different methodology, that of the Intergovernmental Panel on Climate Change (IPCC),¹⁶ and their scope is “territorialized,” because they only cover GHG emissions within national boundaries. Conversely, DTI asset portfolios as analyzed in this report are international and include emissions generated in a number of different countries.

Nevertheless, it is important to note that although these comparisons are used for illustrative purposes only, they are nonetheless appropriate. Their relevance can be assessed against a measure that is discussed in detail later in this report, but that permits an immediately better grasp of the scales discussed here. For example, it should be noted that while total emissions in 2020 backed by the asset portfolios of the eight major Canadian DTIs studied represent about 2.6 times the total emissions reported by Canada (2019), these same portfolios also represent almost exactly 2.6 times Canada’s GDP for 2020 (C\$5.67 trillion in assets versus \$2.207 trillion in GDP¹⁷).

These comparisons are therefore both revealing and highly relevant because, of course, these “financed” emissions are nonetheless real and underscore the heavy responsibility that financial institutions have to fight climate change. Just like governments, businesses and individuals are responsible for decarbonizing their operations (production, consumption, transportation, etc.), banks and other asset managers are responsible for decarbonizing their portfolios.

WHY AND HOW TO CALCULATE “FINANCED” EMISSIONS¹⁸

The majority of GHGs (CO₂ eq.) are generated by human activity, whether it relates to individuals (transportation, residential heating, etc.), businesses (industrial and agricultural processes, fossil fuel combustion, etc.), governments (infrastructure, utilities, government corporation operations, etc.) or even buildings (construction industry, energy consumption, etc.). While the financial assets of DTIs do not generate GHGs in and of themselves, they “finance” GHGs in the sense that these assets make the human activities that produce them possible.

Since loans (to businesses and individuals, for mortgages, etc.) and investments (stock market investments, corporate and government bonds, land and real estate assets, etc.) of DTIs finance economic activity, it can also be said that they indirectly “finance” the GHGs generated by this activity. For example, if a bank owns 5% of the shares of a listed company, it can reasonably be inferred that it makes possible 5% of this company’s activities and, at the same time, “finances” 5% of GHG emissions.

There are different methodologies for accounting for corporate GHG emissions, but generally speaking, the Greenhouse Gas Protocol (Figure 1) distinguishes three levels/scopes of emissions: “direct” emissions related to current operations, industrial processes or company buildings (Level/Scope 1); “indirect” emissions related to the company’s energy supply (Level/Scope 2); and “indirect” emissions related to the company’s upstream (supply chains) or downstream (transportation and distribution, product use, waste, etc.) activities.

In the case of DTIs, emissions “financed” by asset portfolios are therefore considered indirect and Level 3 (downstream from current operations). Using the Carbon Impact Analytics methodology developed by Carbon4 Finance (see Appendix 1), this report evaluates emissions “financed” by the credit and investment portfolios of Canada’s eight largest DTIs. This analysis includes loans to individuals, businesses and the public sector,

residential and commercial mortgages, land and real estate portfolios, equity investments in public and private enterprises and corporate, government and sovereign bonds. It therefore takes into account, in proportion to the financing provided, Level 1, Level 2 and Level 3 emissions produced by financed individuals, businesses, organizations and governments, both in Canada and internationally.

There are two main ways to compare the significance of emissions backed by Canadian DTI assets: based on “absolute” emissions, in tonnes of GHGs (CO₂ eq.) or based on “emission intensities.” This report details both measures, but since the size of the assets in the respective DTI portfolios varies considerably, the only way to compare their carbon weight fairly is to put these assets on an equal footing by determining the *intensity* of financed emissions for each DTI, expressed in tonnes (CO₂ eq.) per C\$1 million in assets. This measure is therefore the amount of GHGs emitted for every dollar allocated in loans and investments by each DTI.

1.2. A necessary decarbonation

The environmental responsibility of financial institutions is now universally recognized. It was even the focus of discussions at the most recent Glasgow Climate Change Conference, “COP 26,” held in the fall of 2021. This was evidenced by the work of the Glasgow Financial Alliance for Net Zero (GFANZ), chaired by former Bank of Canada Governor Mark Carney. GFANZ is linked to both the Net-Zero Banking Alliance and the Net Zero Asset Managers Alliance, both of which are committed to achieving (on a voluntary basis) carbon neutrality in lending and investment portfolios by 2050. Major Canadian banks, with the exception of Laurentian Bank and Desjardins Group, are members of these two alliances.¹⁹

According to GFANZ, in order for the world to get back on track to meeting the Paris Agreement goals of capping global warming at 1.5 degrees and achieving carbon neutrality by 2050, global GHG emissions will have to fall by at least 7% every year until 2030 (including by 45% from 2010 levels by 2030). Various estimates indicate that investments of up to US\$275 trillion—including more than US\$100 trillion in the energy sector alone—will be needed globally over the next 30 years.²⁰

As of the fall of 2021, banks and fund managers from G20 countries had more than US\$20 trillion in assets in sectors and companies considered “carbon-intensive.”²¹ Since the Paris Agreement alone, that is, in the five years from 2016 to 2020, the world’s 60 largest banks allocated about US\$3.8 trillion to various fossil fuel industries in the form of loans or underwriting.²² Without the contribution and commitment of banks and other asset managers, the world will simply never get there.

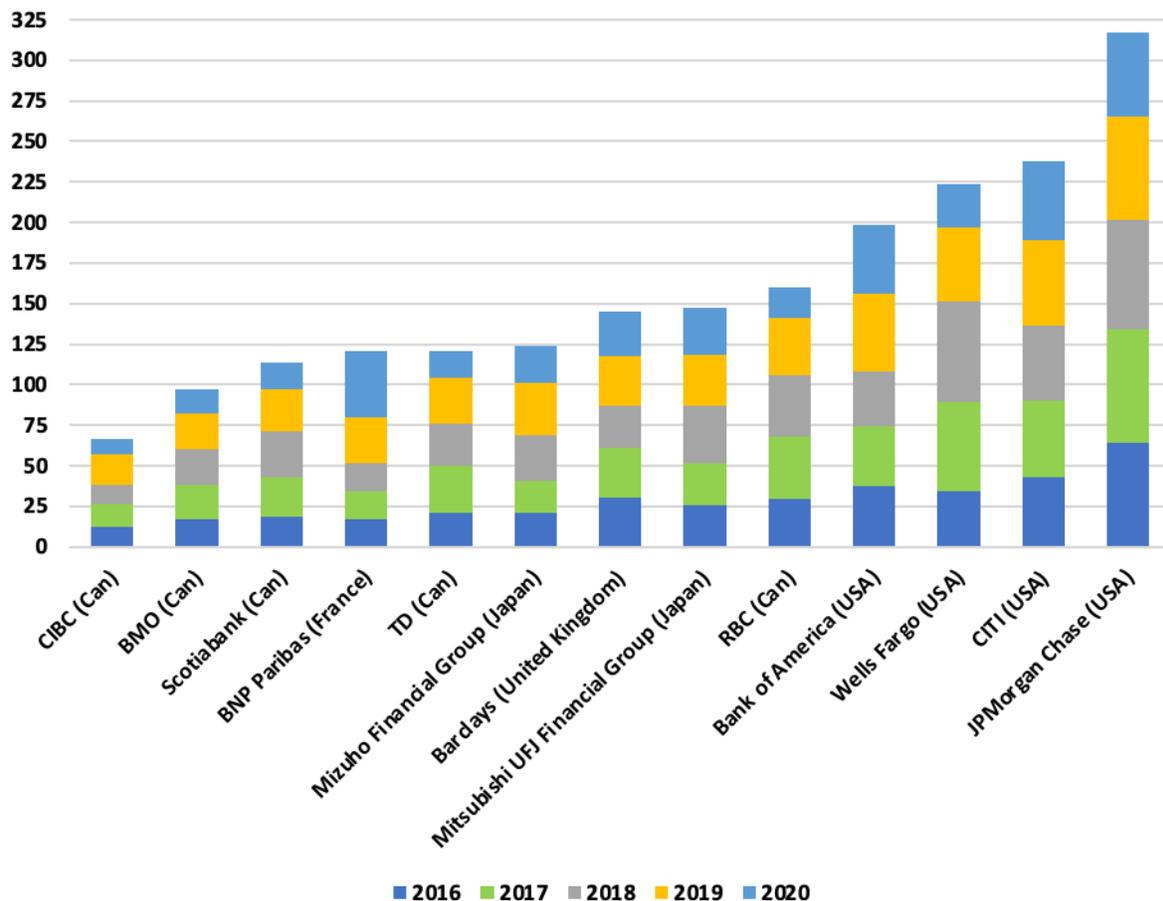
This is particularly true of Canadian financial institutions, which, due in part to the significance of the fossil fuel sector in Canada, are among the top funders of this industry around the globe.²³ To provide an idea of the order of magnitude, for example, between 2016 and 2020, Canada’s five

largest banks allocated US\$559 billion (almost C\$700 billion) to the fossil energy industries in loans and underwriting²⁴ alone. Two of them (TD and RBC) even rank among the top ten banks most involved in these sectors worldwide (Chart 1).

It should be noted that, like their US, Japanese and European competitors, Canadian banks *increased* their financing to fossil fuel industries between 2016 and 2019. The (slight) decline observed in 2020 was the exception and was particularly tied to economic factors associated with the health crisis. As of early December 2021, the world’s ten most involved banks in the fossil fuel industry, which included RBC, Scotiabank, CIBC and TD, had once again allocated over US\$210 billion in loans and underwriting over the previous year.²⁵

Worse still, what should be added to this total is the other component of the activities of Canada’s major banks, namely investments (bonds and stocks): no less than C\$646 billion was invested in the fossil fuel industry by the same five banks from 2016 to 2020 (again, with no significant slowdown before 2020).²⁶ This brings this group’s total contribution (credits and investments) to this sector to over C\$1.3 trillion for the five years following the Paris Agreement. At this rate, it will not be just Canadian DTIs that will be unable to meet their own targets—including carbon neutrality for their portfolios by 2050—but Canada itself, which has committed to carbon neutrality by 2050 and, previously, to reducing emissions by at least 40% from 2005 levels by 2030.²⁷

Chart 1. Total credits and underwriting to the fossil fuel sector, top 10 most involved banks in the world and Canadian banks, 2016–2020 (US\$ billion)²⁸



According to the latest reports from both the International Energy Agency and the Canada Energy Regulator, given the current state of legislation, industrial and environmental policies, carbon pricing, productive technologies and capacity, and domestic and global demand, Canadian natural gas and crude oil production, which accounts for more than 25% of Canada's GHG emissions, will continue to grow until at least 2045.²⁹ However, according to the Régie de l'énergie, even in a scenario where legislation, environmental policies, carbon pricing and demand continue to tighten significantly, crude oil production would continue to expand until at least 2032.

In either case, Canada would fall far short of its emissions targets because, even if technological advances (extraction and production techniques, carbon capture, etc.) cause emissions from the oil and gas sectors to decline at a steady pace, it will not be enough to offset further expansion of production over the next 10, 20 or 25 years. In short, the financing and investment activities of Canadian banks in the fossil fuel sectors have put Canada in an unsustainable position, both environmentally and financially.

1.3. Environmental risks are financial risks

From a *financial* perspective, insistence is essential because the more environmental and climate consequences of fossil fuel exploitation intensify and the more international GHG emission reduction targets narrow over time, the more policies and restrictions likely to accelerate the shift to decarbonation will be radicalized. As a result, the risks associated with credit and investment portfolios in carbon-intensive sectors will increase and the likelihood of recovering these loans or making a return on these investments will diminish.

Some analysts today are calling it a "**carbon bubble**."³⁰ There is already a significant gap between, on the one hand, the assets held by financial institutions in fossil fuels, as well as the volume of resources represented by these assets, and, on the other, the total amount of fossil fuels that can be consumed globally if we want to limit global warming to a range of 1.5 to 2 degrees. Assuming that energy in excess of this limit will not actually be consumed, it is clear that the related assets will eventually be partially or completely devalued.

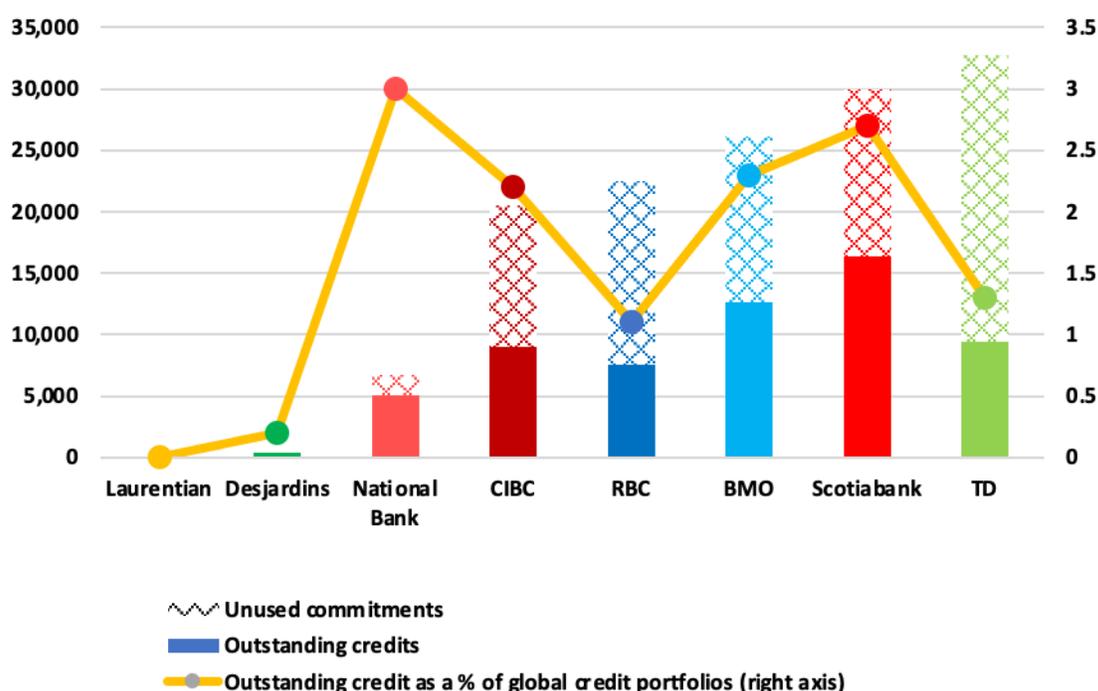
Recent estimates suggest that total assets held in these sectors are more than five times that small amount. The potential financial losses associated with the devaluation of these assets could therefore be between US\$1 trillion and US\$4 trillion by 2050.³¹ Of course, given the weight of the fossil fuel sector in the Canadian economy, as well as the credit and investment portfolios of Canadian banks, the effects of this potential "carbon bubble" are likely to be particularly harmful in Canada.

For example, in an early 2022 report, the Bank of Canada and the Office of the Superintendent of Financial Institutions (OSFI) analyze four different scenarios, ranging from "immediate" global action to limit global warming to 1.5 degrees and achieve carbon neutrality by 2050 to "delayed" action that would only see environmental policies harden after 2030 in order to limit global warming to 2 degrees. However, in each scenario, an 8% to 10% drop in Canadian GDP by 2050—compared to the baseline scenario (global climate policies in place at the end of 2019)—seems inevitable due to increasing carbon pricing, declining global demand for resources (especially fossil fuels), decreasing prices for these resources and related financial devaluations.³²

These financial impacts could be major, even catastrophic. According to the Bank of Canada and OSFI study, a devaluation of equity assets in the oil and gas sector between 80% and more than 90% is expected between 2020 and 2050. Similarly, the various scenarios studied would lead to an explosion in the probability of default on credits by 2050 of more than 150% in the latter sector in general, more than 400% in oil sands extraction, and from 450% to close to 600% in the petroleum refining sector, for example.

Given the huge amounts of money that Canadian banks have committed to the fossil fuel sector, there is reason to be concerned not only from an environmental perspective, but also from a financial standpoint. As of the end of 2020, outstanding credit and unused credit commitments (on revolving lines of credit, for example) of Canada’s major DTIs in this sector totalled close to C\$140 billion. Outstanding credit alone accounted for 1% to 3% of the overall credit portfolio of each institution, with the exception of Laurentian and Desjardins, which are virtually absent from this sector (Chart 2).

Chart 2. Outstanding credit and unused credit commitments by deposit-taking institution, fossil fuel sector (oil, gas & pipelines), 2020 (C\$ million)³³



Of course, the financial risks associated with climate change extend far beyond just the fossil fuel sector. Many other carbon-intensive niches are also at risk of being severely affected by the acceleration of environmental legislation, rising carbon prices and shifts in global demand and prices. As we will see, a very large share of emissions backed by Canadian DTI assets are also linked to sectors such as construction, real estate, manufacturing, transportation, services, energy supply, and even agriculture and forestry.

These institutions are therefore exposed to the financial risks associated with the foreseeable decline in the oil and gas industries, but not only that.³⁴ Since transition risks (e.g., increase in carbon pricing), but also physical risks (e.g., natural disasters) and liability risks (e.g., reputational damages, lawsuits and claims) directly associated with climate change are so likely to grow almost exponentially by the 2030s and 2040s, OSFI announced in early 2022 that Canadian banks will soon have to raise their capital reserve requirement, as a bulwark against potential losses related to these risks.³⁵

The bottom line is that it is not just financial institutions themselves that stand to pay the price of climate inaction. The Basel Committee on Banking Supervision, for example, recently compiled a comprehensive list of “microeconomic transmission channels” of climate-related financial risks that could directly affect individuals, households and/or business owners (and, through them, financial institutions due to defaults, devaluations, drying up of savings and so on).³⁶

In addition to declining financial returns on their investments, the main ones include land and real estate devaluations, damage to property and equipment of all kinds, cuts in the supply of goods and services, declining corporate profit margins, poor crop seasons, monetary inflation, or higher fuel taxes and energy prices, which are likely to hit individuals hard (and already do to some extent). It is with this in mind that the findings of this report must be considered, both collectively and individually.

HIGHLIGHTS: CONTEXT

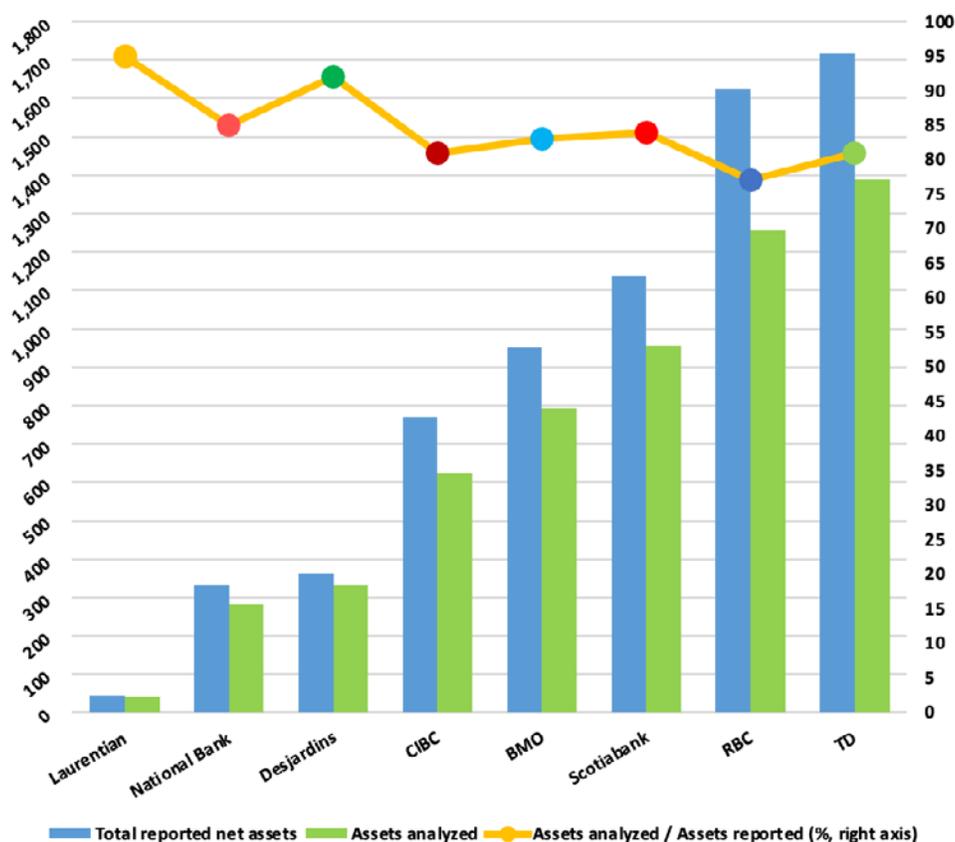
- If Canada’s eight major DTIs were a sovereign nation, they would be the fifth largest GHG emitter in the world.
- 1,906,741,640 tonnes: this is the total carbon weight of these eight institutions, or more than two and a half times the total carbon weight of Canada as a whole and close to 23 times that of Quebec.
- From 2016 to 2020, Canada’s five largest banks allocated close to C\$1.3 trillion to fossil fuel industries.
- A devaluation of equity assets in the range of 80% to 90% and an explosion in the probability of default on loans of more than 150% is expected by 2050 in the Canadian oil and gas sector.
- As of the end of 2020, outstanding credit and unused credit commitments of Canada’s major DTIs in this sector totalled close to C\$140 billion.
- RBC estimates that over C\$65 billion in investments annually will be required over the next three decades to achieve carbon neutrality by 2050.
- As of spring 2022, none of the top eight Canadian DTIs had disclosed total emissions financed by their credit and investment portfolios.

2. CARBON FOOTPRINT OF DEPOSIT-TAKING INSTITUTIONS: AWARENESS IS NEEDED

2.1. Total financed emissions: Magnitude and comparisons

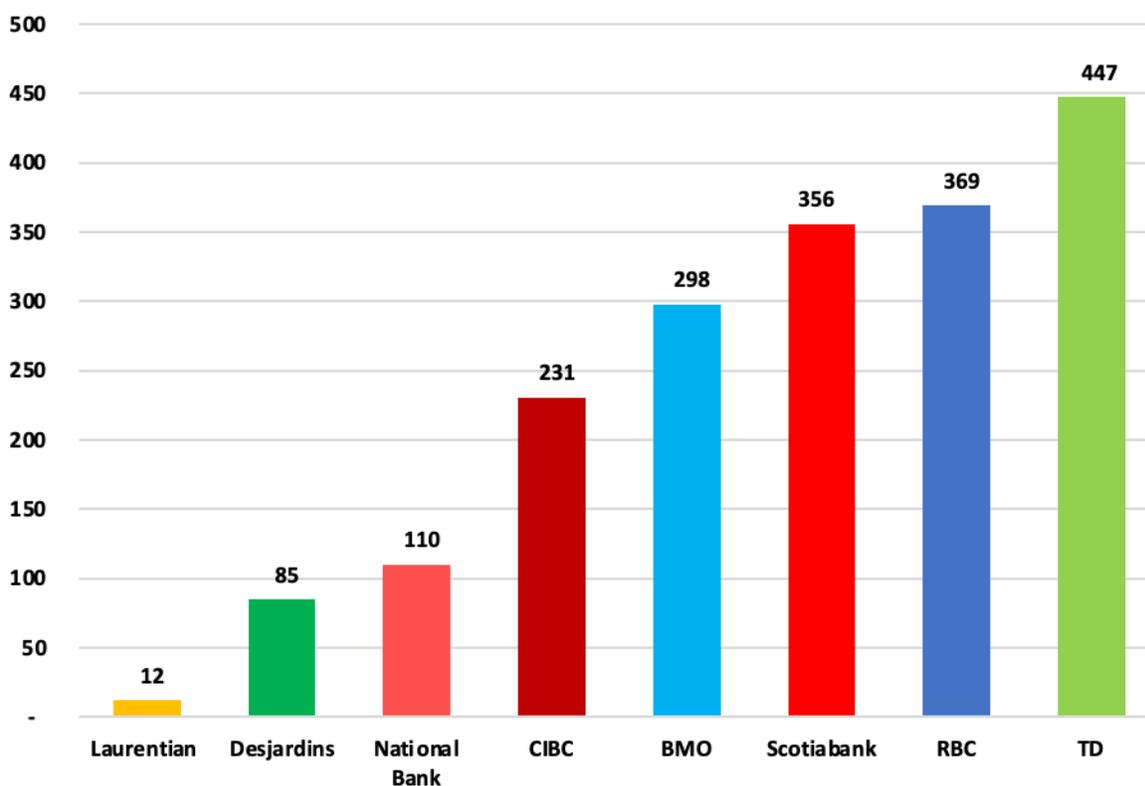
The methodology used for this report—Carbon Impact Analytics (CIA), developed by Carbon4 Finance in collaboration with investment management firm Mirova (see Appendix 1)—is internationally recognized as one of the most comprehensive and accurate for calculating financed emissions.³⁷ The CIA methodology has provided the most comprehensive picture of emissions financed by Canadian DTIs to date, encompassing a very large share of their credit and investment portfolios (Chart 3), excluding only a few asset classes, including underwriting,³⁸ interbank loans and derivatives.

Chart 3. Total assets analyzed for this report as a proportion of total assets reported by deposit-taking institutions for 2020 (C\$ billion)³⁹



This analysis includes loans to individuals, businesses and the public sector, residential and commercial mortgages, land and real estate portfolios, equity investments in public and private enterprises and corporate, government and sovereign bonds (including “green” bonds). As illustrated in Chart 3, our aggregate financed emissions by Canadian DTIs therefore represent between 77% (RBC) and 95% (Laurentian) of the total assets of each DTI, or nearly C\$5.67 trillion of the C\$6.934 trillion reported on 2020 balance sheets, for average coverage of 82%.

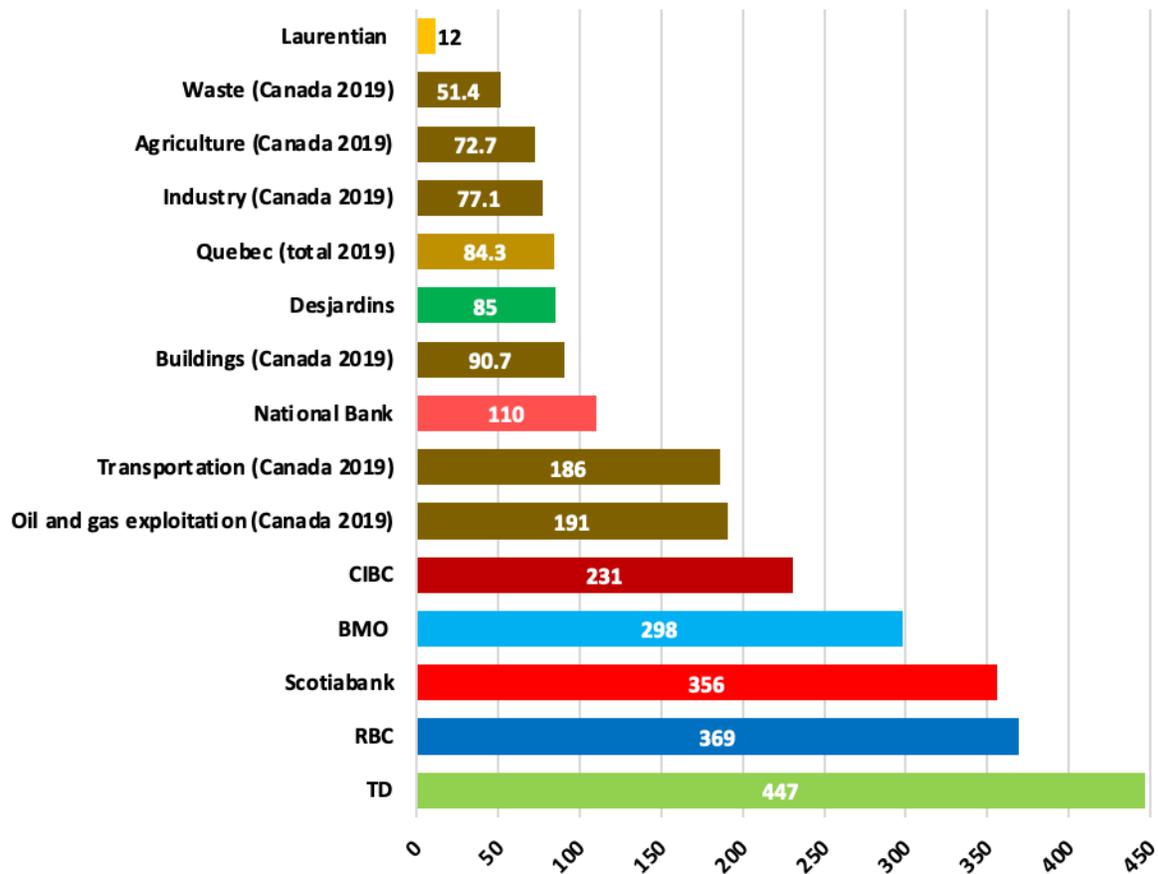
Chart 4. Total financed emissions by deposit-taking institution, 2020 (million tonnes CO₂ eq.)⁴⁰



At the outset, emissions financed by Canada’s eight major DTIs totalled over 1.9 billion tonnes (CO₂ eq.). These include, in proportion to the financing provided, Level 1, Level 2 and Level 3 emissions produced by financed individuals, businesses, organizations and governments. Of course, since the sum of assets analyzed varies in proportion to the size of the DTIs, their gross carbon weight fluctuates greatly, from just under 12 million tonnes for Laurentian to close to 450 million tonnes for TD (Chart 4). It is interesting to note here that emissions financed by RBC and TD, respectively, are each higher than the total emissions of a country like France (361 million tonnes in 2019),⁴¹ whereas the emissions financed by Desjardins are equivalent to Quebec’s total carbon footprint of 84 million tonnes in 2019⁴² (Chart 5).

It is also striking that the two largest Canadian DTIs, namely TD and RBC, alone finance more emissions than all of Canada generates annually, while Scotiabank-financed emissions alone exceed the total carbon footprint of Canada’s oil and gas sector by 85%. The emissions financed by a medium-sized DTI such as CIBC were nonetheless 24% higher in 2020 than emissions from all of Canada’s transportation sector and equivalent to the combined emissions from Canadian agriculture, industry and buildings in 2019 (Chart 5).

Chart 5. Total financed emissions of deposit-taking institutions (2020) versus Canada's and Quebec's total emissions by sector (million tonnes CO₂ eq.)⁴³



Similarly, emissions financed by the four Quebec DTIs⁴⁴ (Laurentian, Desjardins, National Bank and BMO) represent no less than six times Quebec's total carbon weight. In 2020, for example, emissions financed by Laurentian alone, by far the smallest of the DTIs studied, were more than three million tonnes higher than emissions generated by all buildings in Quebec and more than four million tonnes higher than the total carbon footprint of Quebec's agricultural sector. In 2020, Desjardins and National Bank respectively financed GHG emissions equal to between two and three times the total emissions generated by Quebec's entire transportation sector.⁴⁵

Comparing the gigantic carbon footprint of Canadian DTI portfolios to that of Quebec or Canada is one thing, but comparing it to other bank portfolios around the world would be another. Unfortunately, because of the lack of transparency among large banks regarding their financial data, but also because of the complexity of the exercise, such compilations have rarely been done elsewhere. In most of these cases, the emissions compiled also greatly underestimate, for many methodological reasons, the emissions actually financed by the institutions studied. Even through *reports disclosed as part of the Partnership for Carbon Accounting Financials (PCAF)*, reliable comparisons from the world's major banks are not possible. This is problematic because, without a comparison, it is difficult to assess the performance of Canadian DTIs and thus draw conclusions as to the scale of decarbonation efforts to be implemented.

In early 2022, of the 122 PCAF member banks representing US\$28.264 trillion in assets, only 27 (US\$4.87 trillion in assets) had calculated and published their financed emissions. Four “financial groups” offering banking services can be added to this total, representing US\$4.004 trillion in assets. However, even among these some 30-odd institutions, none had yet produced a precise and comprehensive compilation comparable to that of this report. Some exclude the Level 3 emissions of financed businesses, others exclude their financing of a host of industrial sectors except the most carbon-intensive, and still others measure only the emissions related to their loan portfolio, excluding their securities.

Although some major banks have disclosed their financed emissions, any comparison would be useless. For example, the Dutch bank ABN AMRO, with approximately C\$825 billion (2020) in assets under management, is somewhere between CIBC and BMO in terms of size (Chart 3). However, for 2020, it reported only 32 million tonnes of GHGs (CO₂ eq.) in financed emissions, or barely 14% of the emissions financed by CIBC or 10% of the emissions financed by BMO according to our calculations (Chart 4). In short, the methodological gap is too wide to compare anything.

In contrast, there are at least three reports similar to this one, published in 2021, covering the US, British and French financial sectors respectively.⁴⁶ The first two used the same methodology, the GHG Protocol, while the US version used 2020 data and the British version used 2019. In both cases, however, the calculated total emissions are significantly underestimated, in part because they do not take into account the Level 3 emissions of the companies and organizations financed (supply, transportation and distribution, waste, use/ processing of products sold, etc.; see Figure 1). In most sectors, these Level 3 emissions represent several times the combined Level 1 and Level 2 emissions; for example, the multiple is six on average for oil and gas sector companies.⁴⁷

Out of the US\$32.6 trillion in assets analyzed, more than seven times that of our Canadian DTIs, the US study estimated 1.97 billion tonnes (CO₂ eq.) emissions financed by 18 banks and asset managers, barely outpacing the carbon footprint of the portfolios of our eight DTIs. Again, any comparison seems impossible here. The UK study, with the same methodological limitations, estimated around 800 million tonnes (CO₂ eq.) in total emissions financed by 25 banks and fund managers, whose total assets analyzed are not disclosed. By how much should these estimates be multiplied to get a more accurate picture of reality? It is difficult to say with any certainty, let alone make any meaningful comparison.

The French study, carried out by Oxfam France in collaboration with Carbon4 Finance, is methodologically identical to this report and therefore comparable. These comparisons help put some of our findings into perspective. For example, four of the largest French banks all had higher financed emissions for 2020 than TD, Banque Populaire /Caisse d’Épargne – BPCE (484 million tonnes (CO₂ eq.)), Crédit Agricole (620 million tonnes), Société Générale (707 million tonnes) and BNP Paribas (749 million tonnes). Each of these four banks, as indicated in the Oxfam France report, therefore finances emissions that are higher than those of France as a whole, with BNP Paribas financing more than twice as much.

The two other French banks analyzed, Crédit Mutuel and Banque Postale, would rank fourth and sixth in Canada, respectively, with financed emissions of 310 and 225 million tonnes (CO₂ eq.). Of the four major Quebec DTIs, in terms of the carbon weight of portfolios, only BMO surpasses one of the six largest French banks, which also heavily finance the fossil fuel industry, including companies such as Maurel & Prom and TotalÉnergies.⁴⁸ However, all of this is relative, of course; the hidden reality of Canadian DTIs is best viewed in terms of *financed emission intensities*.

HIGHLIGHTS: TOTAL FINANCED EMISSIONS

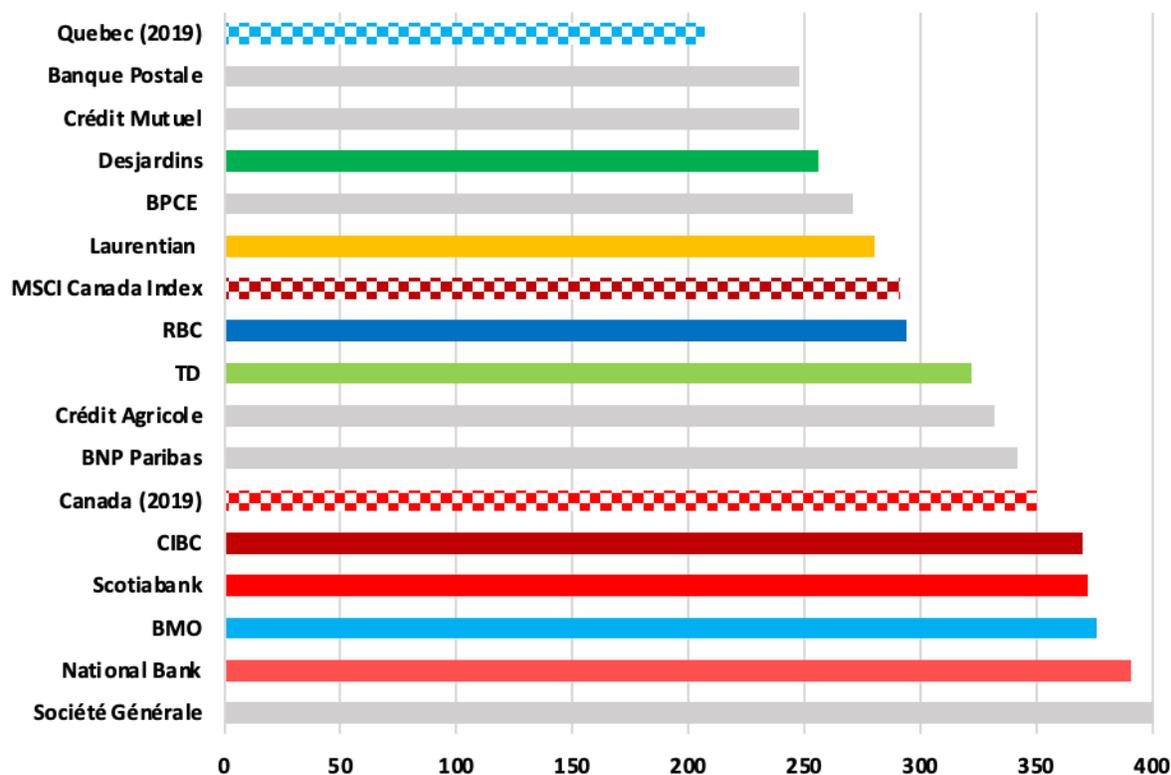
- Our compilation of financed emissions covers between 77% (RBC) and 95% (Laurentian) of the total assets of each DTI, or close to C\$5.67 trillion in assets.
- The methodology used for this report, Carbon Impact Analytics, includes Level 1, Level 2 and Level 3 emissions produced by financed individuals, companies and organizations.
- Emissions financed by Quebec's four most active DTIs (Laurentian, Desjardins, National Bank and BMO) account for six times Quebec's total carbon weight.
- Because of the lack of transparency among banks regarding their financial data, such compilations have rarely been done elsewhere. In most of these cases, the emissions compiled greatly underestimate the emissions actually financed by the institutions studied (concealing mainly Level 3 emissions).

2.2. Financed emission intensities: The hidden reality

Aggregate assets in Canadian DTI credit and investment portfolios vary considerably, so the only way to compare carbon weight is to put these assets on an equal footing by determining the *intensity* of financed emissions for each DTI, expressed in tonnes (CO₂ eq.) per C\$1 million in assets. This is therefore the amount of GHGs emitted for every dollar allocated in loans and investments by each DTI. This indicator is for the purpose of a report like this one that is much more informative than "absolute" financed emissions, since the carbon intensity of the portfolios analyzed speaks volumes about the activities and sectors prioritized by the DTI financing and investment strategies.

The findings of this indicator, shown in Chart 6, are of interest in several respects. First, there is a reversal in the outlook: compiled this way, the carbon footprints of the National Bank and BMO portfolios appear to be the largest of the eight major Canadian DTIs, at 391 and 376 tonnes of GHGs/C\$ million respectively. This is followed by Scotiabank at 372 t/\$M, CIBC at 370 t/\$M, TD at 322 t/\$M and RBC at 294 t/\$M. Laurentian is next at 280 t/\$M, with Desjardins the least carbon-intensive in its financing and investment activities with 256 t/\$M.

Chart 6. Total financed emission intensities, Canadian and French deposit-taking institutions, 2020 (tonnes CO₂ eq. / C\$ million)⁴⁹



This *relative* indicator is not perfect, however, as it tends to mask the *objective* reality; for example, the fact that in absolute terms, TD and RBC are by far the largest sponsors of the fossil fuel industry among Canadian DTIs is undeniable. Nevertheless, since their assets under management are larger than those of any other DTIs, the relative impact of this financing is smaller. Just because the carbon *intensity* of RBC and TD portfolios is lower than that of National Bank, BMO, Scotiabank or CIBC, it does not mean that their carbon *weight* is lower as well (Chart 4 shows the opposite).

The credit portfolios of National Bank, BMO, Scotiabank and CIBC are indeed, as illustrated in Chart 2 in the introduction, all significantly more exposed to the fossil fuel sector in relative terms—from 2.2% to 3%—than those of TD (1.3%) or RBC (1.1%). Moreover, although RBC’s investments (stocks and bonds) in this sector were, as of December 31, 2020, more than double those of BMO, for example, as a proportion of their respective assets under management, this spread represented no more than half of a percentage point (2.7% compared to 2.2%). It should be noted here that while these proportions appear to be relatively small, this is still, in absolute terms, a total exposure in excess of C\$60 billion for the eight DTIs.

Comparisons with French banks can also be reviewed against this indicator. While the emissions financed by French banks are generally higher than those of Canadian DTIs, the carbon *intensity* of their portfolios, with the notable exception of Société Générale, is relatively low (Chart 6). The carbon intensity of the portfolios of Crédit Mutuel, Banque Postale and BPCE is therefore similar to that of Desjardins or Laurentian, whereas Crédit Agricole and BNP Paribas are about the same as TD.

While Canadian DTIs absolutely finance fewer emissions than French banks, their portfolios are nevertheless as or, in many cases, more carbon *intensive*. For example, on average, the four major Quebec DTIs (BMO, National Bank, Desjardins and Laurentian) finance close to 326 t/\$M and the four major Ontario DTIs, 340, compared to 308 in the case of the six French banks.

Another observation from Chart 6 is that, overall, the average carbon intensity of the eight Canadian DTIs is 332 t/\$M, compared to 350 for Canada as a whole (CO₂ eq. per million dollars of GDP). As a result, Canadian DTIs are slightly *less* carbon intensive than Canada itself with its highly carbon-intensive economy (particularly compared to Quebec). This is in line with the fact that, as noted in the previous section, the total financed emissions of Canada's eight DTIs are about 2.6 times Canada's total emissions, and their total assets are also 2.6 times Canada's GDP.

On an individual level, as shown in Chart 6, Desjardins, Laurentian, RBC and TD are all also *less* carbon-intensive than Canada as a whole. The four other banks (CIBC, Scotiabank, BMO and National Bank) are not significantly more carbon-intensive than Canada, but this explains the spread, aside from the concentration of a share of bank assets in more carbon-intensive sectors. This includes the fact that the Canadian GHG inventory is territorialized (it stops at national borders), while DTI asset portfolios are international and can therefore be decoupled from Canada's average carbon intensity.

It is also quite noteworthy that six major Canadian banks (with the exception of Desjardins and Laurentian) all have higher carbon intensity, for their financed emissions, than the MSCI Canada Index,⁵⁰ which comprises close to 90 Canadian mid- and large-caps listed on the Toronto Stock Exchange, representative in sum of Canada's "real" economy. Moreover, the portfolios of the eight largest Canadian DTIs are more carbon intensive than Quebec itself. At 207 t/\$M for Quebec as a whole (2019), for every tonne of GHG emitted by Quebec as a whole, each of the major Canadian DTIs financed between 1.24 and 1.89 tonnes.

The intensity of emissions financed by Canadian DTIs also provides an illustrative estimate of the magnitude of emissions financed by savers' deposits in each DTI (Table 1). By reporting these intensities in tonnes/\$, for example, it can be established that each client with \$1,000 in savings on deposit "finances" between 0.25 tonnes (Desjardins) and 0.39 tonnes (National Bank) of GHGs per year, with an average of 0.33 tonnes for our eight DTIs. It is therefore possible to estimate that, in the case of a more substantial balance of \$25,000, for example, each client "finances" between six and ten tonnes of GHGs over a year.

This last measure, although for illustrative purposes, reveals another hidden reality. The average annual carbon footprint per capita is 9.9 tonnes in Quebec and 19.4 tonnes in Canada (CO₂ eq.). It is therefore possible to estimate that for a balance of \$1,000, the average Quebec saver "finances" the equivalent of 2.6% (Desjardins) to 4% (National Bank) of this footprint, compared to 1.3% to 2% for the average Canadian saver. For a balance of "only" \$25,000 held at Desjardins, a Quebecer "finances" the equivalent of nearly 65% of its annual carbon footprint at the individual level (Table 1).

This means that, depending on the choice of their financial institution, the average Quebec and/or Canadian saver can statistically have a major impact on the GHG emissions they "finance." Based on this choice, the emissions financed by their savings account for a greater or lesser share of their own carbon footprint. Choosing a financial institution, in the context of a historic environmental crisis, is therefore no small task, as this choice reflects the ethical dilemmas inherent in institutional dynamics for the conduct of individuals. Although the emissions "financed" by depositors' savings are shown here for illustrative purposes only, the differences in carbon intensity between the portfolios of Canada's eight largest DTIs are very real.

Table 1. Emissions financed by savers' deposits, by institution (2020) and as a % of the average annual carbon footprint of a Canadian or Quebecker (2019)⁵¹

Saver's balance	Institution	Emissions (tonnes CO2 eq.)	% of average annual footprint of a Canadian/Quebecker
C\$1,000	 Desjardins	0.256	1,3% / 2,6%
	 BANQUE LAURENTIENNE	0.28	1,4% / 2,9%
	 BANQUE NATIONALE	0.391	2% / 4%
	 RBC	0.293	1,5% / 3%
	 TD	0.322	1,7% / 3,3%
	 CIBC	0.37	1,9% / 3,7%
	 Banque Scotia	0.372	1,9% / 3,8%
	 BMO	0.376	1,9% / 3,8%
C\$25,000	 Desjardins	6.4	33% / 64,6%
	 BANQUE LAURENTIENNE	7	36,1% / 70,7%
	 BANQUE NATIONALE	9.775	50,4% / 98,7%
	 RBC	7.325	37,8% / 74%
	 TD	8.05	41,5% / 81,3%
	 CIBC	9.25	47,7% / 93,4%
	 Banque Scotia	9.3	47,9% / 93,9%
	 BMO	9.4	48,5% / 94,9%

HIGHLIGHTS: FINANCED EMISSION INTENSITY

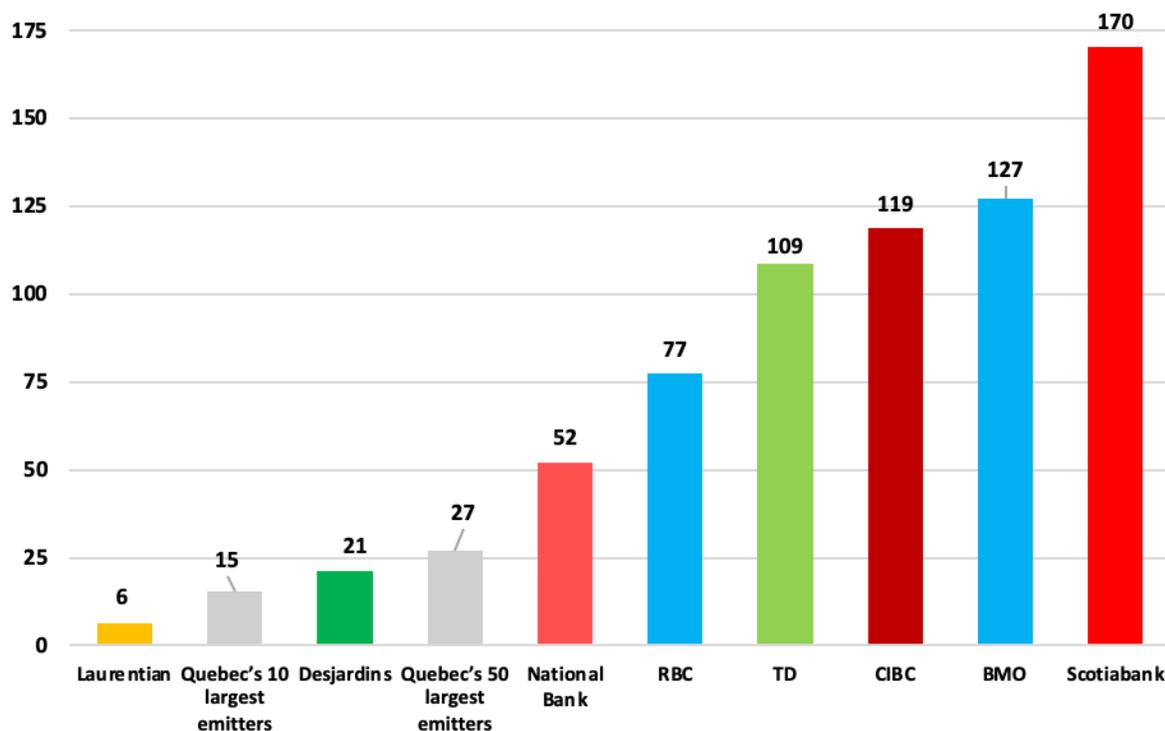
- The size of the assets making up the portfolios of Canadian DTIs varies considerably. The only way to compare carbon weight is to put these assets on an equal footing by determining the *intensity* of financed emissions for each DTI, expressed in tonnes (CO₂ eq.) per C\$1 million in credits and investments.
- The carbon intensity of the National Bank and BMO portfolios is the largest of the eight major Canadian DTIs, at 391 and 376 tonnes of GHGs/\$ million respectively.
- Just because the carbon intensity of RBC and TD portfolios is lower than that of National Bank, BMO, Scotiabank or CIBC, it does not mean that their carbon *weight* is lower as well.
- Canadian DTIs finance fewer emissions than French banks, but their portfolios are more carbon-intensive in many cases.
- The portfolios of the eight largest Canadian DTIs are, without exception, more carbon-intensive than Quebec itself (tonnes/\$ million).
- For a balance of \$1,000, each Canadian saver “finances” between 0.25 and 0.39 tonnes of GHGs over a year, depending on the DTI with which they do business.

2.3. Business loan portfolios: Staggering carbon intensity

Canada’s major DTIs (just like their foreign competitors) are not very transparent about their financial data. This is especially true, however, of their investment portfolios, for which a breakdown by asset type is usually available (government, sovereign or corporate bonds, corporate shares, money market securities, derivatives, fixed assets, etc.), but no *sector* breakdown is provided, which would shed light on the industries in which they are involved, at various levels.

Conversely, this sectoral distribution is available, by industry, for their *business loan* portfolios. This is interesting for a number of reasons. First, business loans represent a substantial portion of the overall credit portfolio of each DTI studied (which also includes loans to individuals and governments, mortgages, credit cards, etc.). On average, this share is above 31%, fluctuating between 23% [Desjardins] and 36% [BMO].

Chart 7. Emissions financed by the corporate loan portfolios of deposit-taking institutions versus total emissions from Quebec’s largest industrial emitters, 2020 (million tonnes CO₂ eq.)⁵²

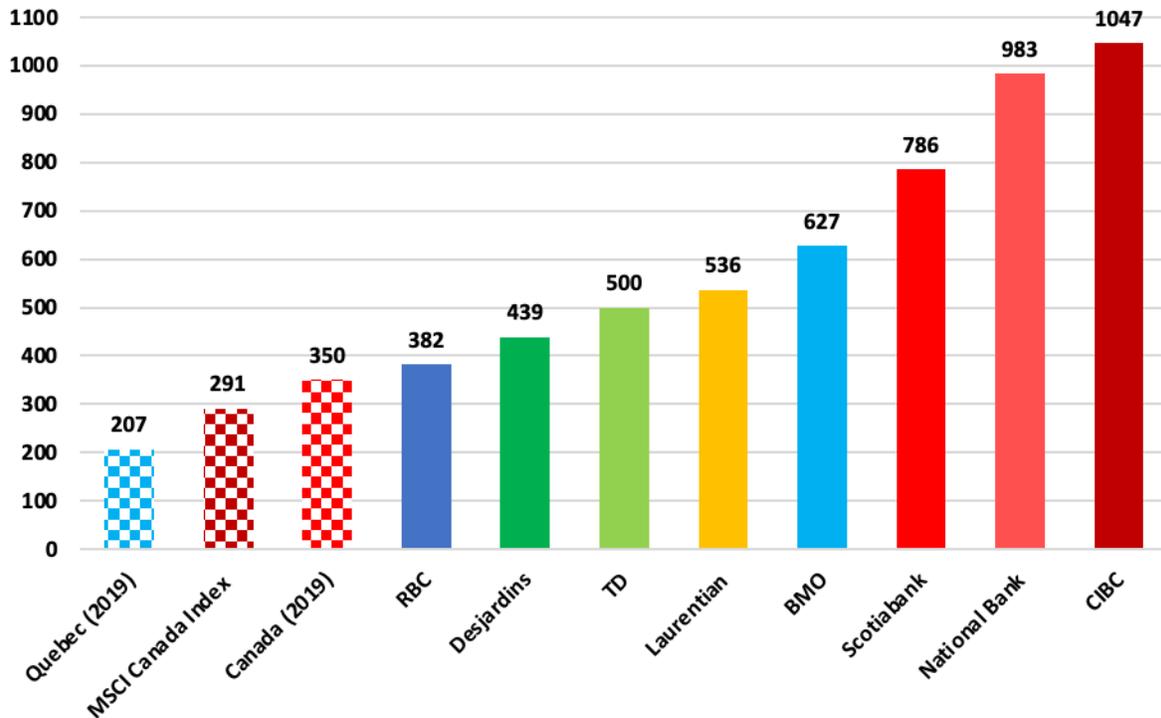


More importantly, however, although these business loan portfolios make up on average only 20% of the total analyzed assets of our eight DTIs, they represent more than 680 million tonnes of financed emissions (Chart 7), which is more than 35% of the total carbon weight of these assets (1.9 billion tonnes). This means that their carbon intensity is much higher than that of overall DTI assets, notably because these are loans to *businesses*, but also because of the specific sectoral distribution of these portfolios (see Chart 8 to this end).

However, those 680 million tonnes (CO₂ eq.) in financed emissions are distributed very unevenly; Laurentian finances just over 6 million, whereas Scotiabank finances over 170 million (Chart 7). The list also includes total emissions generated by Quebec’s largest industrial GHG emitters. The Desjardins business loan portfolio therefore finances emissions that are 40% higher than the emissions of the 10 largest industrial emitters in Quebec,⁵³ whereas that of the National Bank represents nearly twice the total carbon weight of Quebec’s 50 largest emitters.

The intensity of emissions financed by the business loan portfolios of Canadian DTIs is indeed huge. None of these portfolios has a lower carbon intensity than that of Quebec or Canada as a whole (GHG tonnes/\$ million of GDP). Even Desjardins’s business loan portfolio, for example, is more than twice as carbon-intensive as the Quebec economy, whereas CIBC’s is three times as carbon-intensive as the Canadian economy.

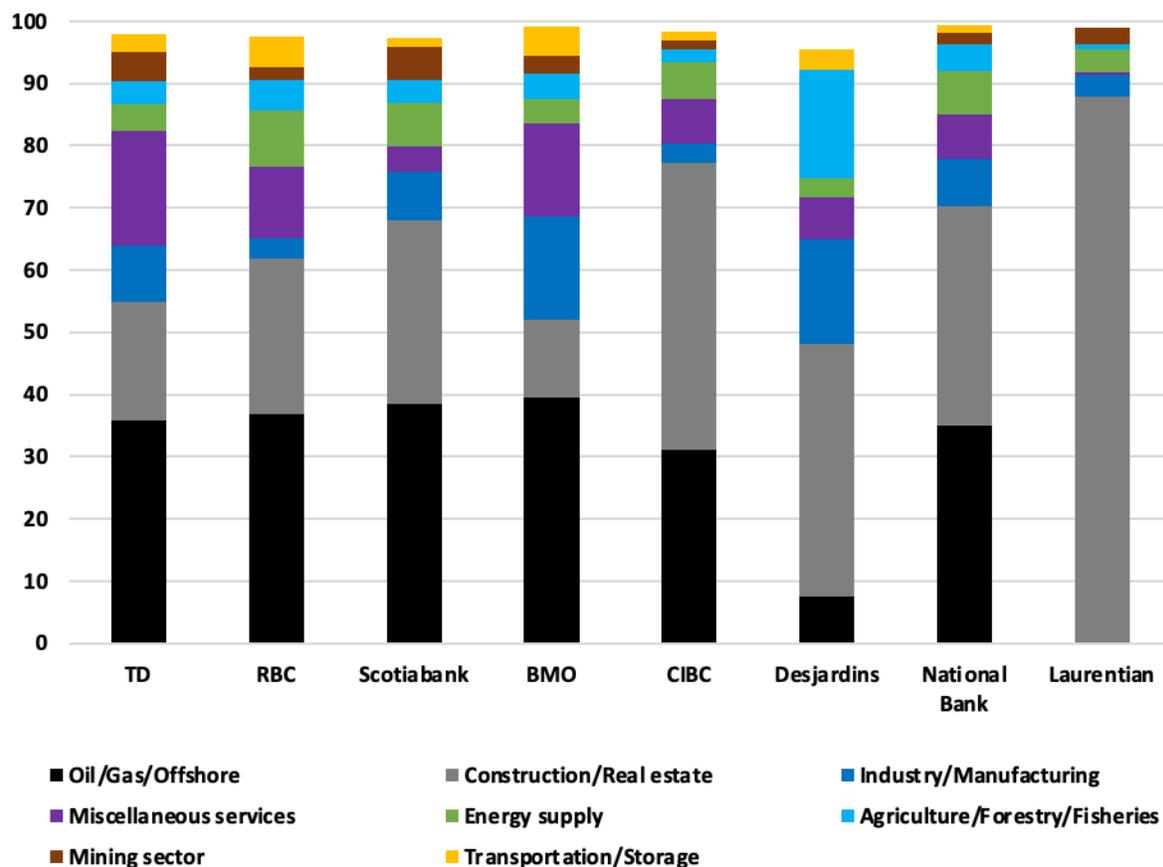
Chart 8. Intensity of emissions financed by business loan portfolios, by deposit-taking institution (tonnes CO₂ eq./\$ million)⁵⁴



The intensities of emissions financed by business loan portfolios are well above the overall carbon intensities of the DTIs (charts 8 and 6). This difference is +677 tonnes per million dollars for CIBC, +414 tonnes for Scotiabank, +251 tonnes for BMO, and “only” +178 tonnes and +88 tonnes for TD and RBC, respectively. The enigma in this picture, once again, is National Bank; although the emissions financed by its business loan portfolio are much lower than those of Scotiabank, CIBC or BMO (Chart 7), the carbon intensity of this portfolio is 983 tonnes/\$ million, ranking it second among Canada’s DTIs (Chart 8).

How can all these phenomena and this rather peculiar ranking be explained? A number of factors come into play, but at least two seem particularly meaningful. First, as shown in Chart 9, the high carbon intensity of the business loan portfolios of Canadian DTIs is explained by the fact that a very large proportion of their financed emissions are concentrated in a few very carbon-intensive sectors. The top two sources of emissions financed by these portfolios are fossil fuels and construction/real estate, two of the three largest GHG-emitting industries in Canada, along with transportation.

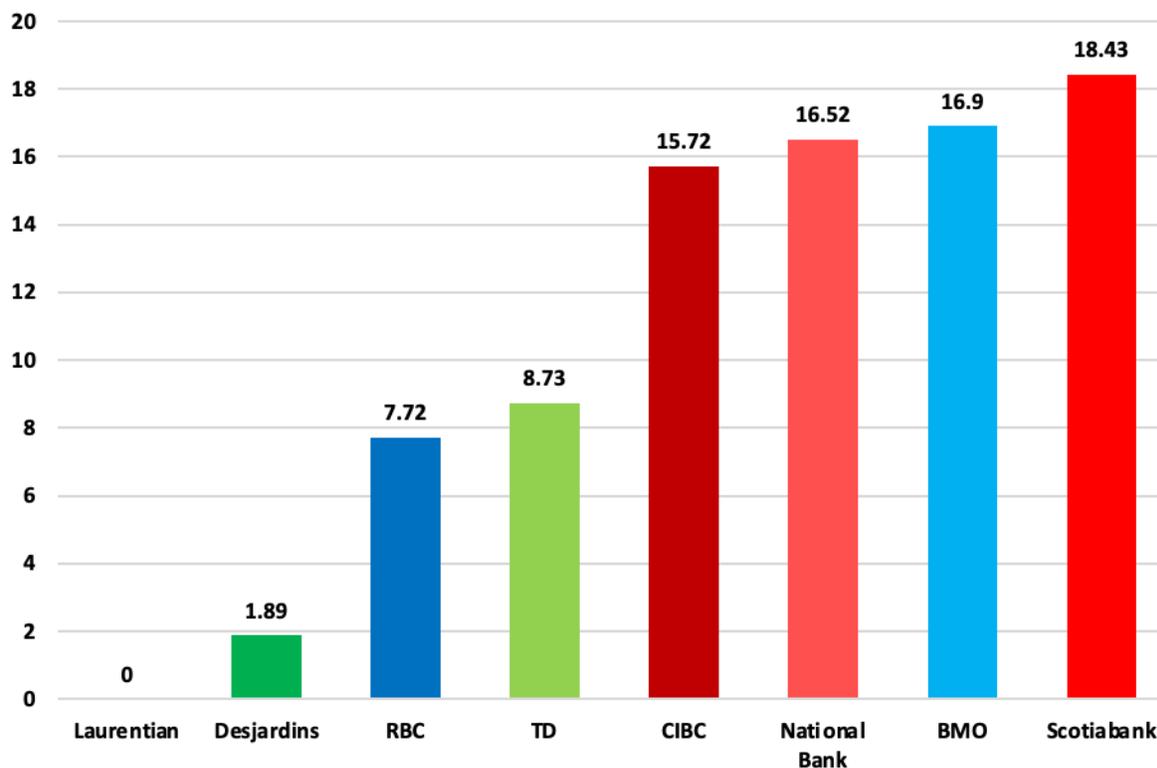
Chart 9. Main sources of financed emissions as a % of total emissions financed by business loan portfolios, by deposit-taking institution, 2020⁵⁵



Second, we can see that the Canada-wide ranking of the most carbon-intensive business loan portfolios is also better understood in terms of this sectoral distribution. Emissions financed by the CIBC, National Bank and Scotiabank business loan portfolios are therefore particularly concentrated in the fossil fuel and construction/real estate sectors, at 77%, 70% and 68%, respectively (Chart 9). Conversely, this proportion is only 55% for TD, 52% for BMO and 48% for Desjardins. RBC is in the middle of the pack at 62%, but with a very large business loan portfolio amounting to over \$202 billion (2020) and a reduced relative weight of loans to carbon-intensive sectors.

The same phenomenon can be demonstrated even more simply by determining the proportion of total emissions financed by DTIs directly related to each DTI’s loans to the fossil fuel sector businesses. It has already been established (Chart 2) that the credit portfolios of National Bank, Scotiabank, CIBC and BMO are, in relative terms, the most exposed to the fossil fuel sector. As a result—and this also explains the particularly high carbon intensity of their business loan portfolio—the same four DTIs are by far the ones whose total financed emissions are most concentrated in loans to oil and gas companies, with proportions of 15% to 18% (Chart 10).

Chart 10. Emissions financed by portfolios involving business loans to oil and gas companies as a % of total emissions financed, by institution, 2020⁵⁶



Conversely, the overall carbon footprint of TD, RBC and, especially, Desjardins and Laurentian is relatively unrelated to their oil and gas loan portfolio (Chart 10). In the case of TD and RBC, however, this is primarily a statistical phenomenon linked to the size of their assets under management, as these two behemoths are by far the largest sponsors of the fossil fuel industry among Canadian DTIs. Desjardins and Laurentian are therefore the DTIs least exposed to the fossil fuel sector. The carbon footprint of their business loan portfolio is mainly tied to construction/real estate; in the case of Desjardins more specifically, it is tied to manufacturing and agriculture.

In sum, the carbon weight of the business loan portfolios of Canada's top DTIs is staggering. In most cases, this is due to a significant exposure to the fossil fuel sector, a radical withdrawal from which seems indispensable. However, the still very high carbon intensity of these portfolios even at Laurentian and Desjardins reminds us that huge progress will also have to be made in other sectors. As a result, the hope is that each of the major DTIs will now heavily finance the decarbonization of polluting industrial sectors as well as sectors that are already low-carbon.

HIGHLIGHTS: BUSINESS LOAN PORTFOLIOS

- Business loans represent 20% of total DTI assets, but 35% of their total financed emissions (680 Mt/1.9 Gt).
- The carbon intensities of business loan portfolios are enormous; none of the business loan portfolios of Canadian DTIs have a lower carbon intensity than Quebec or Canada as a whole (tonnes/\$ million).
- The top two sources of emissions financed by these portfolios are fossil fuels and construction/real estate.
- Scotiabank, BMO, National Bank and CIBC are by far the DTIs with the largest concentration of total financed emissions in terms of loans to oil and gas companies, at 15% to 18%.
- Only Desjardins and Laurentian can really boast very little exposure to the fossil fuel sector.

2.4. Emissions savings: Reasons for hope?

To assess whether it is plausible to hope that emissions financed by Canadian bank portfolios will drop drastically, on the one hand, and that more funds will be made available for the ecological transition, on the other, emissions *saved* by the eight DTIs must now be considered. This essentially refers to the extent by which their portfolios *reduce* (“reduced emissions” = decarbonization) and *prevent* (“avoided emissions” = energy efficiency) GHG emissions by individuals, businesses, organizations and governments.

Also compiled using Carbon4 Finance’s CIA methodology (see Appendix 1), these (reduced and/or avoided) emissions savings include emission levels 1 to 3 and thus measure the *positive* impact of DTI credit and investment when it serves to finance—especially but not only through the famous “green bonds,” for example—energy efficiency projects, the development and deployment of green technologies, carbon capture, renewable fuel production, electrification of transportation or industry, and so on.

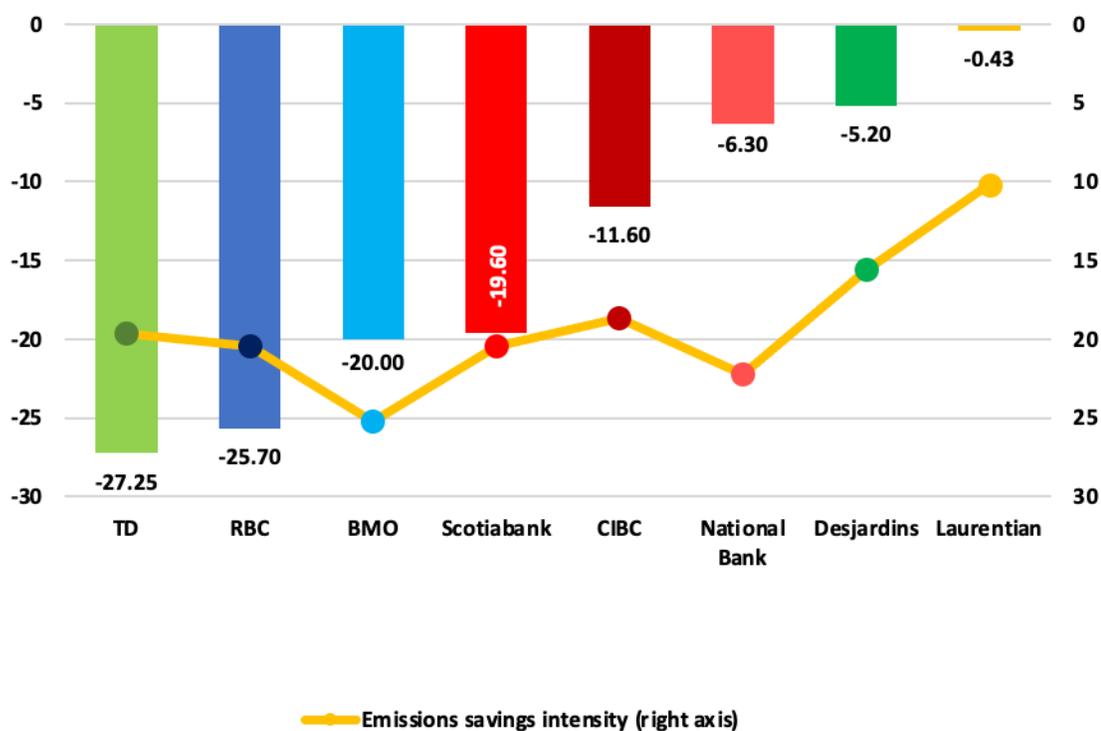
Note, however, that the financed emissions presented in the previous sections already include this positive impact, as they are *net* emissions. As a result, emissions savings cannot be subtracted from financed emissions. It is important to quantify and isolate them because, even if they are already accounted for in total financed emissions, this provides a glimpse of the scale of efforts undertaken by the DTIs to decarbonize their financing activities. It also provides a measure of how far they still have to go in order to gradually reduce these financed emissions to eventually achieve carbon neutrality.

As shown below, the total emissions saved by the credit and investment activities of the eight DTIs vary widely (Chart 11), with Laurentian only able to save just under 430,000 tonnes (CO₂ eq.) and TD saving over 27 million tonnes. As with financed emissions, the magnitude of emissions savings is therefore strongly correlated, quite simply, with the size of the assets under management held by each DTI; the “small players” have a moderate impact and the “big players” have a more significant impact.

Here again, it is more telling to analyze the relative contribution of each DTI in terms of the *intensity* of the emissions it has saved, in tonnes (CO₂ eq.) per million dollars of financing and investment. From this perspective, emission savings by Laurentian (10 t/\$M) and Desjardins (15.5 t/\$M) are relatively low (Chart 11). This is normal because their portfolio-*financed* emissions are already the lowest among the eight Canadian DTIs. As a result, they are already financing less carbon-intensive sectors, which have less decarbonization flexibility.

By contrast, emission savings by BMO (25.2 t/\$M) and National Bank (22.3 t/\$M) are particularly strong. That means that in addition to or as part of their financing of carbon-intensive sectors, such as fossil fuels, BMO and National Bank are also backing a number of projects, technologies and products that contribute to decarbonization. National Bank’s loan portfolio, for example, has recently posted significant growth in its exposure to renewable energy, while its exposure to non-renewable energies has decreased, in relative terms. For example, from a total of 1.9% and 6.6% respectively in 2015, this exposure changed to 3.1% and 4.7% respectively of total loans at the end of 2020.⁵⁷

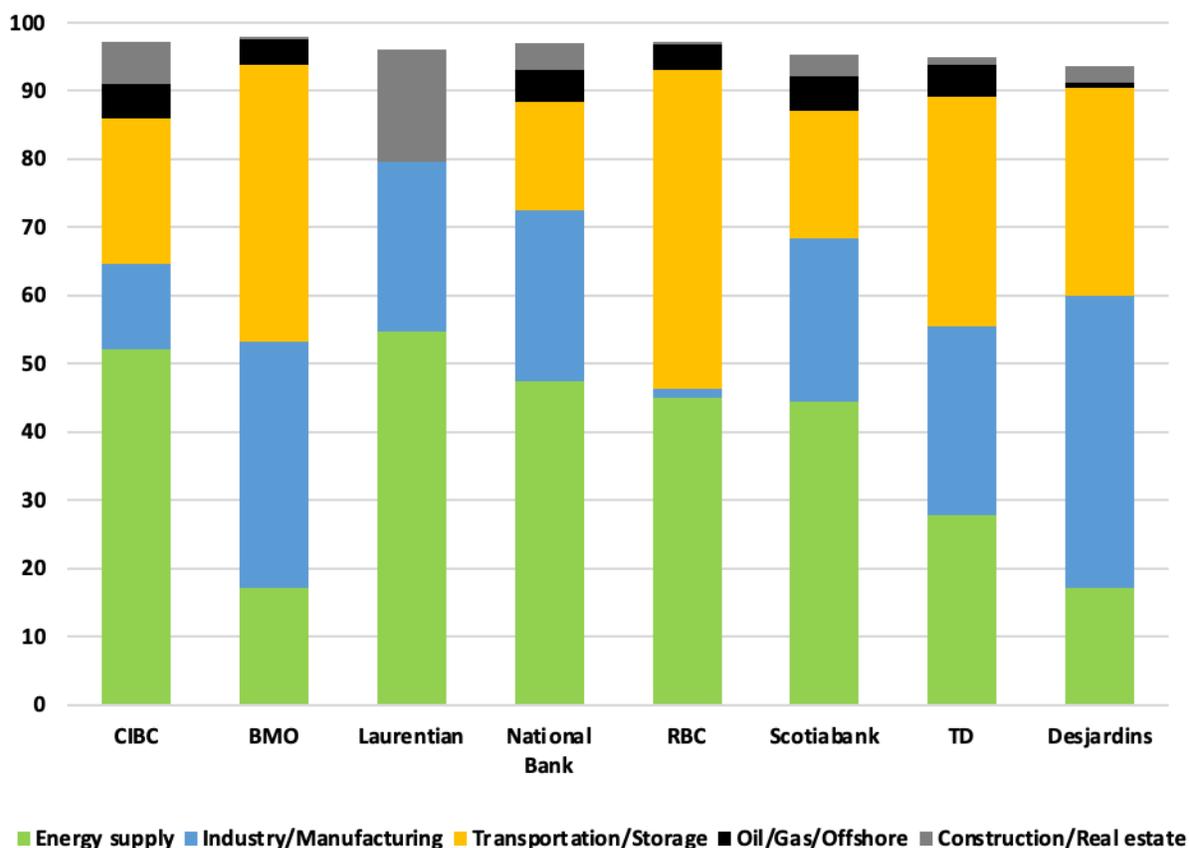
Chart 11. Total emissions savings (million tonnes (CO₂ eq.) and emissions savings intensity (tonnes CO₂ eq./\$ million), by deposit-taking institution, 2020⁵⁸



For example, BMO has allocated more than \$45 billion in “green finance” since 2019⁵⁹ and underwritten \$42.7 billion in “sustainable bonds,” including green bonds whose proceeds are used to support renewable energy and energy efficiency projects. These efforts, but probably most importantly TD’s, RBC’s or CIBC’s lower *relative* exposure to the carbon-intensive fossil fuel sector—despite their greater *absolute* exposure—set National Bank and BMO apart slightly from these three DTIs, whose emissions savings intensity is around 20 tonnes/\$ million.

A closer look at business loan portfolios provides an interesting picture of the sectoral distribution of emissions savings. This makes it possible, on the one hand, to better define the strategic priorities of each DTI and, on the other, to identify the sectors that have been the most promising in terms of decarbonization so far. The first aspect to note is the high concentration of emissions savings in three key sectors: the electrification of transportation, industrial decarbonation and energy supply, that is, the supply of industrial, government, commercial and residential buildings with electricity, natural gas or another resource (Chart 12).

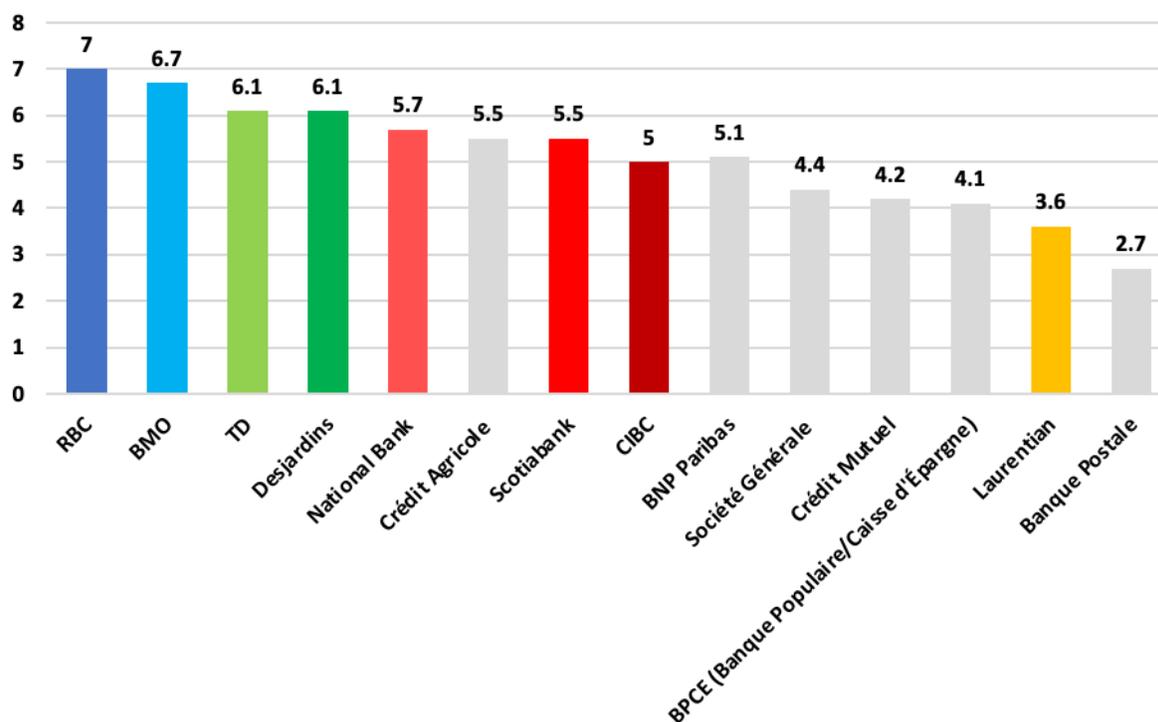
Chart 12. Main sources of emissions savings as a % of total emissions savings linked to business loan portfolios, 2020⁶⁰



This distribution varies from one DTI to another depending not only on the relative exposure of their portfolio of business loans to these various sectors, but also on the prioritized “green” projects, activities and products. For example, BMO’s and Desjardins’s emissions savings are heavily concentrated in the industrial and transportation sectors, whereas Laurentian is virtually absent from the latter sector, but derives much of its emission savings in the areas of energy supply and construction/real estate. National Bank is also very active in the area of energy supply, but close to 5% of the emissions savings from its business loan portfolio also come from the fossil fuel sector.

All that being said, emissions savings represent a very small share of the total emissions financed among all DTIs, without exception. Regardless of whether ratios are calculated on the basis of total emissions or emission intensities, the conclusion is the same (Chart 13): none of the top eight Canadian DTIs has a “carbon impact ratio” (emissions savings/emissions financed) greater than 10%, with the range fluctuating from 3.6% (Laurentian) to 7% (RBC). This means that per 100 tonnes of GHGs (CO₂ eq.) financed, DTIs “save” only 5 on average. We can at least take comfort (or not) in the fact that French banks are generally worse, with an average carbon impact ratio of barely 4.3%.

Chart 13. Carbon impact ratio: Total emissions savings to total financed emissions, Canadian and French deposit-taking institutions, 2020 (%)⁶¹



This carbon impact ratio for Canada’s major DTIs is even lower if their business loan portfolio is considered alone, averaging just 4%. However, such differences mean very little on this infinitesimal scale. In all cases, these ratios are far below what the environmental crisis would require. Moreover, these minuscule carbon impact ratios are also very clearly insufficient given the emissions targets that Canadian DTIs have set for themselves.

In order to achieve carbon neutrality for their loan portfolios—which, with the exception of Laurentian, CIBC and Scotiabank (which does not specify the scope of its target), they have all explicitly promised to do by 2050—this ratio should be 100%, with all emissions financed offset by emissions savings. Banks must now demonstrate how they will go from 4% or 5% to 100% in less than 30 years. The commitments made will have no real weight until they are backed by clear action plans.

HIGHLIGHTS: EMISSIONS SAVINGS

- In order to assess the contribution that Canadian bank portfolios make to funding the ecological transition, emissions *savings* can be quantified by DTIs. This refers to the extent by which their portfolios *reduce* (decarbonation) and *prevent* (energy efficiency) emissions financed by individuals, businesses, organizations and governments.
- The emissions savings include emission levels 1 to 3, but measure the *positive* impact of DTI credit and investment when it serves to finance energy efficiency projects, green technologies, carbon capture, renewable fuel, electrification of transportation or industry, and so on.
- The intensity of emissions savings by Laurentian (10 tonnes CO₂ eq./\$ million) and Desjardins (15.5 t/\$ million) is relatively low, whereas the intensity of emissions savings by BMO (25.2 t/\$ million) and National Bank (22.3 t/\$ million) is particularly high.
- There is a high concentration of emissions savings in the electrification of transportation, industrial decarbonation and energy supply (the supply of industrial, government, commercial and residential buildings with electricity, natural gas or another resource).
- For all DTIs, emissions savings represent a tiny fraction (5%) of total financed emissions: for every 100 tonnes of GHG financed, our DTIs “save” on average only 5 tonnes.
- In order to achieve carbon neutrality by 2050, this 5% ratio should be 100%, with all financed emissions being offset by emissions savings.

3. AFFILIATIONS AND COMMITMENTS

The big Canadian DTIs and/or their asset management subsidiaries, with the notable exception of Laurentian, which is the least proactive in this regard, are all Canadian and international members of many initiatives and coalitions in favour of the decarbonization of the financial sector, responsible investing or the disclosure of financed emissions (Table 2). Two of them in particular were supported outright by all of our eight DTIs: Task Force on Climate-related Financial Disclosure (TCFD) and Carbon Disclosure Project (CDP).

The TCFD, established by the G20 Financial Stability Board, is certainly one of the most well-known and influential, with more than 2,600 signatories as of the end of 2021, including over 1,000 financial institutions with total assets of close to US\$195 trillion.⁶² TCFD member organizations are invited to publicly disclose, on a *voluntary* basis, the indicators used to identify, quantify and manage the climate risks associated with their activities. These indicators comprise Level 1, Level 2 and Level 3 emissions from these activities (which includes financed emissions).

However, as of the beginning of 2022, none of Canada's major DTIs had yet disclosed all of their financed emissions. In this regard, they are no different than other TCFD member asset managers and holders, of which only 10% had made such disclosures as of the end of 2021 (compared to 27% of banks and 30% of insurers that are TCFD members more specifically).⁶³ Yet, both before and after the creation of the TCFD, other international bodies were set up to speed up—but also standardize from a methodological standpoint—this disclosure movement by providing financial institutions with tools and data to facilitate the exercise.

One of the largest is the CDP, itself directly aligned with the TCFD recommendations, to which members (including the top eight Canadian DTIs) report annually not only on their progress in environmental governance and risk assessment, but also on the compilation of their operational and financed emissions.⁶⁴ Based on this progress (made and/or planned) and the extent and accuracy of the data disclosed, the CDP assigns an overall score to these reports intended to ultimately encourage greater transparency throughout the financial sector.

With regard to the information disclosed for 2020, the eight Canadian DTIs reporting to the CDP were scored as follows: BMO, Scotiabank, CIBC, RBC and TD (A-), Desjardins (B), National Bank (C) and Laurentian (D-). On the issue of compiling/disclosing financed emissions, just *one* of the practices assessed by the CDP, all Canadian DTIs are on an equal footing because all have committed to doing so in some way (see Table 3), but none have done so yet, at least for all of their assets, as of spring 2022.⁶⁵

Table 2. Comparison of major national and international affiliations of Canadian deposit-taking institutions and their subsidiaries on environmental matters, 2022⁶⁶



	Desjardins	BANQUE NATIONALE	BMO	BANQUE LAURENTIENNE	RBC	Banque Scotia	CIBC	TD
Task Force on Climate-related Financial Disclosures (TCFD)	✓	✓	✓	✓	✓	✓	✓	✓
Carbon Disclosure Project (CDP)	✓	✓	✓	✓	✓	✓	✓	✓
Partnership for Carbon Accounting Financials (PCAF)	✓	✓	✓		✓	✓	✓	✓
Responsible Investment Association (RIA)	✓	✓	✓		✓		✓	✓
Canadian Investor Statement on Climate Change	✓	✓	✓		✓		✓	✓
Net-Zero Banking Alliance (NZBA)		✓	✓		✓	✓	✓	✓
Principles for Responsible Investment (PRI)	✓		✓		✓	✓	✓	✓
Global Reporting Initiative (GRI)	✓		✓		✓	✓	✓	✓
Equator Principles			✓		✓	✓	✓	✓

Green Bond Principles		✓	✓				✓	✓
Climate Action 100+	✓		✓		✓			✓
Sustainability Accounting Standards Board Alliance	✓				✓			✓
Principles for Responsible Banking (PRB)	✓	✓	✓					
Center for Climate-Aligned Finance					✓		✓	✓
Net Zero Asset Managers Initiative	✓		✓					
Climate Bonds Initiative					✓			✓
Statement by the Quebec Financial Centre for a Sustainable Finance	✓	✓						

Here again, Canadian DTIs are no exception, with less than a quarter of CDP member banks having compiled their financed emissions to date, compared to 73% having at least assessed their portfolios' exposure to climate change risks.⁶⁷ Our major DTIs are therefore not necessarily lagging behind their competitors, but are facing the same challenges, one of which is partly beyond their control: like financial institutions themselves, still relatively few of the businesses they finance systematically compile their own GHG emissions, particularly Level 3 emissions.

The TCFD, which has more than 1,500 large non-financial companies as members, provides an estimate of the magnitude of the problem internationally. According to its 2021 report, for example, only 36% of companies in the energy sector, 28% of companies in the transportation sector, 24% of companies in the information and communications technology sector, 39% of forestry and agri-food companies, and 52% of companies in the materials and construction sectors disclose their Level 1, Level 2 and Level 3 emissions. While this proportion is growing in all of these sectors, there is still much progress to be made,⁶⁸ particularly in Canada, among unlisted businesses, but not only those.⁶⁹

While this limits the ability of financial institutions to calculate their financed emissions, these can nevertheless have a significant influence on the pace of such progress. This is one of the main functions of coalitions such as the TCFD and CDP, but also the Principles for Responsible Banking/Investment or GFANZ and its coalitions (Net-Zero Banking and Net Zero Asset Managers). The idea is to cause a ripple effect, prompting financial institutions to harmonize their disclosure practices for financed emissions so that companies hoping to benefit from this financing have no other choice but to imitate them. Also worthy of note is the very important role played by the Partnership for Carbon Accounting Financials (PCAF), to which all the major Canadian DTIs (except Laurentian) are signatories.

PCAF is a “partnership” that, as noted in the introduction, comprises some of the largest banks and fund managers in the world. It stands out for having developed a methodology for quantifying and disclosing financed emissions, the Global GHG Accounting and Reporting Standard for the Financial Industry, which allows financial institutions to harmonize their activities in this regard for a fairly broad asset class, including corporate bonds, listed and unlisted equities, business loans, mortgages, car loans, commercial real estate and project financing. This is the methodology that the TCFD and CDP recommend to their signatories.

As members of these three international coalitions (TCFD, CDP and PCAF), the top eight Canadian DTIs (with the exception of Laurentian for PCAF) have therefore committed to measuring, in the relatively near future (Table 3), their emissions financed on the basis of the Global GHG Standard. Two problems arise. First, the asset class covered by this methodology is incomplete and excludes loans to governments or the purchase of government and sovereign bonds. However, in 2020, Canadian government bonds alone (all levels combined) accounted for a total of over C\$420 billion for our eight DTIs, which is equivalent to Quebec’s GDP. The activities and infrastructure financed in this manner obviously have a sometimes very large carbon footprint.

Second, the PCAF methodology is non-limiting in terms of sector and geographic coverage of emissions. As a result, many financial institutions—as demonstrated by the reports submitted to PCAF and, in particular, that of the Dutch ABN AMRO Bank mentioned earlier—will be satisfied, at least in the short term, with calculating the emissions financed by their activities in the most carbon-intensive sectors, sectors for which they have readily available data, and/or for only the country in which they are headquartered (i.e., excluding all emissions financed by their international asset portfolios).

Therefore, there is every reason to believe that the reports submitted to PCAF by the top Canadian DTIs over the next few years will continue to significantly underestimate their financed emissions, particularly in comparison to the findings of this report. We also know that some of these DTIs commit to counting only emissions financed through their loan portfolio alone, including National Bank, RBC and Scotiabank. (Table 3). National Bank and RBC (along with BMO and TD) say they are aiming for carbon neutrality by 2050, but only for their loan portfolio, while Scotiabank does not say what its target encompasses. Desjardins’s current commitment is to zero net emissions by 2040, but only for its assets in the energy, transportation and real estate sectors.

However, regardless of the scope and schedule, any targets to reduce financed emissions will certainly at least have to include accounting and disclosure of those emissions if the DTIs hope to be taken seriously. It should also be noted that accounting for financed emissions and achieving carbon neutrality in the medium term are not the only environmental commitments made by Canada’s major DTIs. The Canadian Bankers Association, for example, has been compiling all of the major initiatives of major banks⁷⁰—with the exception of Desjardins—in these areas over the past few years since 2021. By consulting the reports and other ESG strategies of each of our DTIs, an up-to-date overview of their key commitments could be established (Table 3).

The degree of ambition varies from one DTI to another, but the commitments made generally fall short of the changes required to align with the Paris Agreements. For example, *none* of Canada’s major DTIs are formally committing to no longer finance the various fossil fuel sectors,⁷¹ including the oil sands, with partial and limited exceptions for Arctic oil and gas or coal.⁷² This time, Canadian DTIs are very far behind some of their major European competitors, which are among the most advanced, including not only the five major French banks, but also institutions such as UniCredit (Italy), ING (Netherlands), Santander (Spain) and Standard Chartered (United Kingdom), which are much more strict about excluding these sectors.⁷³

Table 3. Key environmental and GHG reduction commitments for 2020–2050 by Canadian deposit-taking institutions (as of 2022)⁷⁴

 Desjardins	<ul style="list-style-type: none"> ➤ In effect: permanent moratorium on loans/investments for coal mines, companies whose electricity is largely supplied by coal, new projects or expansion projects in the coal sector ➤ By 2024: 20% reduction in operational GHG emissions compared to 2018 ➤ By 2030/2040: thermal coal output for Europe/OECD (2030) and the rest of the world (2040) ➤ By 2040: zero net emissions for operations and loan/investment portfolios in energy, transportation and real estate ➤ Forthcoming: measurement and disclosure of financed emission (loans and investments)
 BANQUE NATIONALE	<ul style="list-style-type: none"> ➤ In effect: maintenance of 1:1 ratio for loans to fossil fuels and renewable energies ➤ By 2023: measurement and disclosure of financed emissions (loans to oil/gas sector) ➤ By 2025: 25% reduction in operational GHG emissions compared to 2019 ➤ By 2030: 31% reduction in carbon intensity of oil/gas loans compared to 2019 ➤ By 2050: zero net emissions for operations and loan portfolio
 BANQUE LAURENTIENNE	<ul style="list-style-type: none"> ➤ By 2023: establishment of an operational emissions reduction target ➤ Forthcoming: measurement and disclosure of financed emission (loans and investments)



- By 2023: measurement and disclosure of financed emission (loans and investments)
- By 2025: mobilization of \$400 billion for sustainable finance
- By 2030: 30% reduction in operational emissions compared to 2019
- By 2050: zero net emissions for loan portfolio



- In effect: permanent partial moratorium on coal sector financing
- By 2023: measurement and disclosure of financed emission (loans)
- By 2025: mobilization of \$500 billion for sustainable finance activities
- By 2025: 70% reduction in operational GHG emissions (levels 1 to 3) compared to 2018 and zero net emissions for global operations (levels 1 to 3)
- By 2050: zero net emissions for loan portfolio



- In effect: permanent moratorium on oil/gas industry financing and consultation in the Arctic Circle and Arctic National Wildlife Refuge
- In effect: permanent moratorium on direct financing of coal mining and coal-fired electricity production
- By 2025: mobilization of \$100 billion to reduce the effects of climate change
- By 2025: 20% reduction in operational GHG emissions (levels 1 and 2) compared to 2016
- Forthcoming: measurement of the carbon intensity of loans and underwriting and development of a net-zero emission strategy for 2050



- By 2023: measurement and disclosure of financed emission (loans and investments)
- By 2024: carbon neutrality of operations (levels 1 and 2)
- By 2026: 20% reduction in operational GHG emissions (levels 1 and 2) compared to 2018
- By 2027: mobilization of \$150 billion for environmental and sustainable financing activities



-
- By 2023: measurement and disclosure of financed emission (loans and investments)
 - By 2025: 25% reduction in operational emissions (levels 1 and 2) compared to 2019
 - By 2030: mobilization of \$100 billion to support a low-carbon economy
 - By 2050: zero net emissions for operations and loan portfolio
-

Over and above—or should we say, *below*—the commitments regarding their financed emissions, most major Canadian DTIs also propose to reduce their operational emissions over a longer or shorter time horizon (Table 3). For example, Desjardins proposes a 20% reduction from 2018 by 2024, National Bank a 25% reduction from 2019 by 2025 and BMO a 30% reduction from 2019 by 2030. Yet, their relative weight compared to emissions *financed* by DTIs is so minuscule that these promises can almost be equated with greenwashing. For 2020, for example, the total operational emissions of our eight DTIs, as reported to the CDP (thus sometimes partially and sometimes totally excluding Level 3 emissions), represented only 0.2% of their total financed emissions (3,452,764 tonnes/1,906,741,640 tonnes CO₂ eq.), as compiled by this report.⁷⁵

Even in terms of their *financial* commitments to the energy and environmental transition, Canadian DTIs have relatively low ambitions: for example, the total C\$850 billion pledged by BMO, RBC, Scotiabank, CIBC and TD for 2020–2030 (Table 3), while not inconsiderable, will ultimately represent only two-thirds of their previously committed fossil fuel assets between 2016 and 2020 alone, which were in excess of C\$1.3 trillion. It is often said that, at the end of the day, intentions matter. When it comes to fighting climate change, however, that logic does not hold water. The DTIs must live up to the key role they can play in the transition by taking more ambitious concrete actions.

HIGHLIGHTS: AFFILIATIONS AND COMMITMENTS

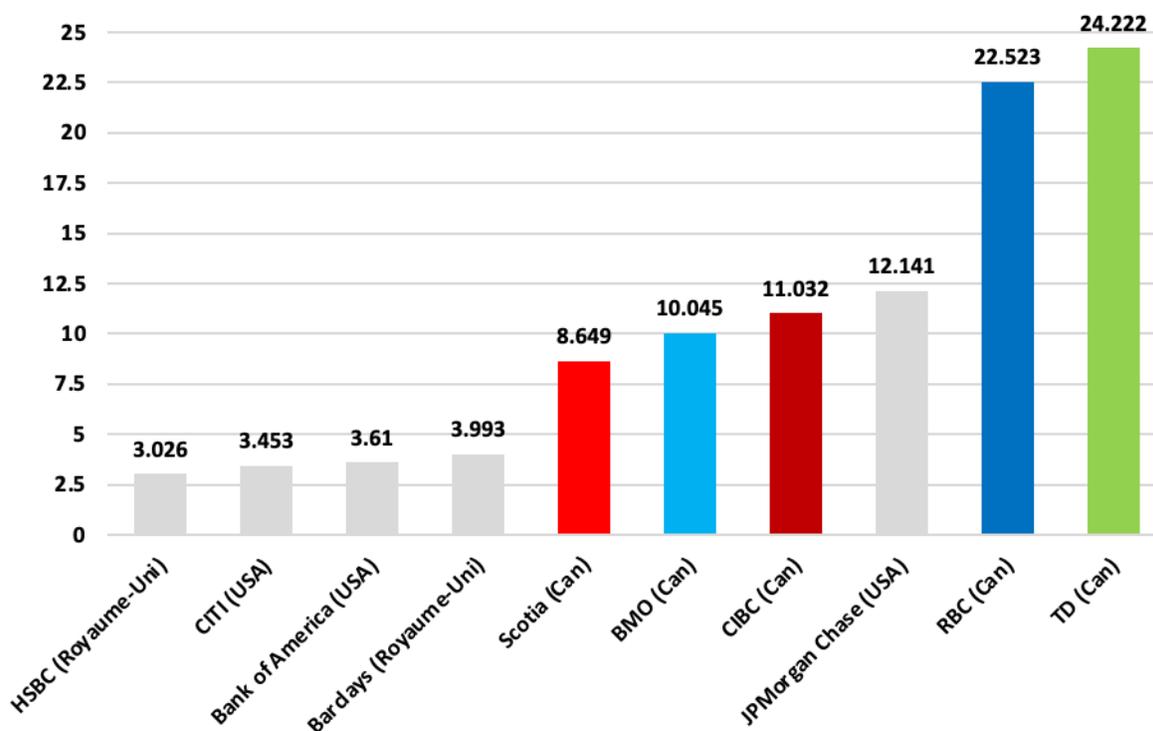
- The eight major Canadian DTIs are members of various coalitions in favour of financial sector decarbonization, responsible investing and/or disclosure of financed emissions, including the TCFD, the CDP and PCAF.
- Like financial institutions, few of the companies they finance compile their GHG emissions, particularly those at Level 3. While this limits their ability to calculate their financed emissions, DTIs can have a significant influence on these companies and their related practices.
- Any reports submitted to PCAF by Canadian DTIs will likely continue to underestimate their financed emissions, compared to the findings of this report. Some commit to counting only emissions financed through their loan portfolio alone, including National Bank, RBC and Scotiabank.
- None of Canada's DTIs (apart from a few partial and limited exceptions) have formally committed to no longer funding fossil fuels, including the oil sands.
- The *financial* commitments of Canadian DTIs to the energy transition are not very ambitious: the total C\$850 billion by 2030 that BMO, RBC, Scotiabank, CIBC and TD have pledged will represent only two-thirds of the assets they had previously committed to fossil fuels between 2016 and 2020.

4. FINANCIAL PRACTICES: TURNING WORDS INTO ACTION

A clear imbalance persists between the commitments (including financial ones) by major Canadian DTIs and governments to decarbonize or achieve net zero emissions and the changes in the financing activities of these same DTIs. Not only has financing of fossil fuels by Canadian DTIs in recent years far outstripped the amounts promised for the energy and environmental transition over the coming years, but this financing also completely marginalizes governments' own modest efforts to make this transition.

In the five years following the Paris Agreement (2016–2020), for example, the five largest Canadian banks committed more than C\$1.3 trillion in loans, underwriting or investments to fossil fuels. The Canadian federal government invested just over C\$60 billion in “green growth” from 2015 to 2019.⁷⁶ Even if we focus only on loans and underwriting, in Canada alone and just in the oil sands sector, financing by Canada's top five banks—which are among the world's six largest oil sands sponsors, ahead of US and UK banks—exceeded C\$75 billion (Chart 14), or 25% more than the federal investments dedicated to Canada's green shift from 2015 to 2019.

Chart 14. Total credits and underwriting to the oil sands industry, top 10 most involved banks in the world, 2016–2020 (US\$ billion)⁷⁷



Of course, it would be wrong to say that Canada’s big DTIs are not making any concrete financial efforts to support and accelerate the green transition. Each has taken a few relatively significant steps in that direction in recent years.⁷⁸ This is reflected, in particular, in their ESG responsibility reports and other climate strategy documents. In 2020, for example, in addition to the National Bank and BMO efforts mentioned earlier (see section 2.4.), it should be noted that:

- Laurentian participated in the issuance of C\$4 billion in green bonds, including C\$500 million by the Government of Quebec;⁷⁹
- Desjardins has invested over C\$1.2 billion in renewable energy infrastructure;⁸⁰
- RBC has allocated the equivalent of C\$73 billion in “sustainable financing;”⁸¹
- Scotiabank has mobilized C\$28 billion of the C\$100 billion pledged by 2025 to “reduce the impacts of climate change;”⁸²
- TD has purchased, underwritten and/or issued close to C\$15 billion in green/sustainable bonds;⁸³
- CIBC has allocated close to C\$16 billion “to support environmental and sustainable finance initiatives.”⁸⁴

This is not an exhaustive list, and all this is certainly not insignificant. To the untrained eye, this may even seem quite impressive.⁸⁵

As reported to *Les Affaires* in the summer of 2021 by the Desjardins Securities Senior Analyst, [translation] “it is better to engage with oil companies as shareholders to accelerate their green transition than to abandon the sector.”⁸⁶ There is some duplicity here on the part of Canada’s major DTIs, which continue to heavily finance fossil fuel companies “to accelerate their green transition” when we know full well that they are not, in return, giving up their extraction and processing activities.

The best example is probably RBC, whose involvement in the fossil fuel sector was noted earlier. In 2019, RBC launched a green bond program as part of its C\$500 billion commitment to sustainable finance by 2025 that explicitly opens the door to “transition bonds,” specifically for the financing of fossil fuel sector companies implementing decarbonation projects.⁸⁷ Of the C\$73 billion that RBC claims to have offered in 2020 for sustainable financing, for example, C\$4.3 billion is committed to two companies, Enbridge and Total.⁸⁸

Of course, the fact that these companies are gradually decarbonizing is not to be discounted, but at the end of the day, presenting the financing of these activities as part of the ecological transition is problematic, simply because this funding allows for the continuation and even the *growth* of fossil fuel production. This is why organizations such as the International Energy Agency and the Canada Energy Regulator are projecting an increase in oil sands production for at least another decade, if not longer. With this increase in mind, the Canadian federal government approved the expansion of the Trans Mountain Pipeline in 2019, raising its transport capacity from 300,000 barrels to close to 900,000 barrels per day in 2023.⁸⁹

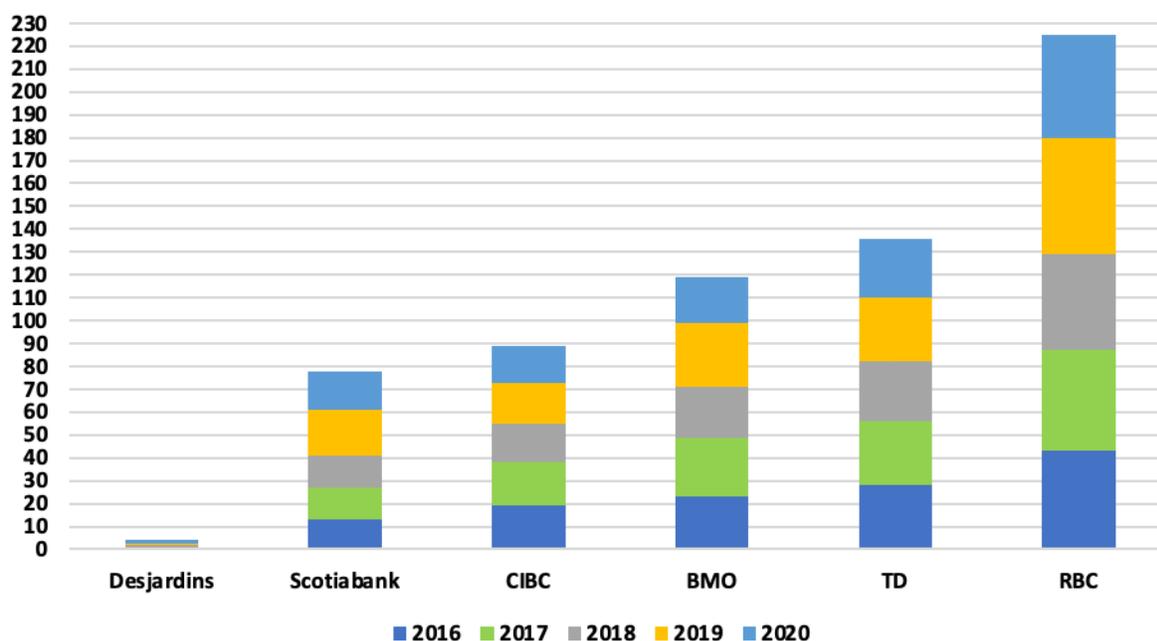
The second major nuance in the “green” finance narrative put forward by Canada’s top DTIs is logically linked to the first. Because these DTIs continue to support the fossil fuel industry directly, but also because, indirectly, their

contributions to “sustainable finance” partly involve sponsoring the decarbonization of activities and companies in this industry, the various renewable energy sectors do not always measure up, to put it quite simply. A 2019 study carried out using financial data from Refinitiv, for example, shows that total financing (loans, bonds, equity) allocated to Canada’s various renewable energy sectors by the five major Canadian banks was 25 times lower than the total financing provided by these same banks to Canadian oil and gas companies.⁹⁰

Without necessarily making the same comparison, it is reasonable to assume that the situation was not reversed in 2020. According to available data, total loans (outstanding and committed) and investments (bonds and stocks) of the seven major Canadian DTIs (excluding Laurentian) in the fossil fuel sector amounted to over C\$260 billion at the end of 2020.⁹¹ In order, RBC (\$67.4 billion), TD (\$58.4 billion), BMO (\$47 billion), Scotiabank (\$46.4 billion), CIBC (\$36.6 billion), National Bank (\$5.1 billion)⁹² and Desjardins (\$1.8 billion) were therefore very valuable partners in this sector, certainly still being much more deeply engaged there than with the renewable energy pioneers.

A longer-term perspective sheds light on the significance of this commitment. As shown in Chart 15, total investments (stocks and bonds) in the fossil fuel sector by Canada’s five largest banks amounted to close to C\$650 billion over the five-year period that followed the Paris Agreement. We are willing to concede that shareholder commitment allows financial institutions to influence the course of events, to encourage oil and gas companies to “accelerate their green transition.” However, is committing to it—or rather remaining committed—on such a scale necessary? Did the five major Canadian banks have to all fund the Coastal GasLink (TC Energy)⁹³ project? To ask the question is to answer it.

Chart 15. Total investments (stocks and bonds) of Canadian deposit-taking institutions in the fossil fuel sector, 2016–2020 (C\$ billions)⁹⁴



For an even clearer picture of the situation, we can also look at Canadian DTIs’ involvement with various companies in the fossil fuel sector. From their credit (loan and underwriting) and investment (stock and bond) portfolios, the top ten Canadian companies financed received close to C\$240 billion between 2016 and 2020, including Enbridge (\$45 billion), Canadian Natural Resources (\$31 billion), TransCanada (\$27 billion), TC Energy (\$21 billion) and Suncor Energy (\$16 billion). However, not all DTIs are committed to the same companies on the same scale; while, for example, the first recipient of financing from each of the five largest Canadian banks was, for the same period, either Enbridge, TransCanada or Canadian Natural Resources, the first company financed by Desjardins in this sector was Énergir (Gaz Métro).⁹⁵

Lastly, it is also worth mentioning the work of the British institute InfluenceMap, which conducted an analysis of the mutual funds and exchange-traded funds (ETFs) of major global asset managers in 2021.⁹⁶ The findings of this study are fascinating: out of a total of 723 ESG- or climate-themed funds analyzed worldwide, for example, only the climate-themed funds (130 funds) actually comply with the Paris Agreement, having no more exposure to the most carbon-intensive sectors than a global warming trajectory limited to less than 2 degrees requires. Funds with a single ESG theme (593 funds), which are more general in nature, have an exposure that is 6% higher than would be necessary to remain on the same trajectory (Table 4).

This “alignment ratio” is calculated using the internationally recognized methodology of the Paris Agreement Capital Transition Assessment (PACTA) based on the exposure (values of shares held) of each institution’s funds to the most carbon-intensive sectors. By predicting the future production of these sectors over a five-year horizon, PACTA permits a comparison of the share of this production held by the analyzed funds against the requirements of the International Energy Agency’s Beyond 2 Degrees (B2DS)

scenario. On this basis, InfluenceMap creates an alignment ratio of assets analyzed against the Paris Agreement (global warming limit of less than 2 degrees by 2050), ranging from -100% (significantly misaligned) to +100% (greater than B2DS). For example, a fund with a -100% alignment will own 100% more carbon production and/or 100% less green production than what is prescribed by B2DS over a five-year period, and vice versa.⁹⁷

Table 4. Paris Agreement alignment ratio for mutual funds and exchange-traded funds, by deposit-taking institution (2020)⁹⁸

Institution	Total assets of analyzed funds (US\$ billions)	Exposure ratio of analyzed assets to carbon sectors ⁹⁹	Alignment ratio for assets analyzed against the Paris Agreement
BMO	76.1	4.98%	-14%
Desjardins	17.4	1.37%	-14%
TD	101.8	1.01%	-13%
National Bank	4.2	5.47%	-12%
Scotiabank	49.5	3.36%	-10%
CIBC	14.3	1.23%	-9%
RBC	36.1	0.52%	-8%
Tangerine	3.6	5.61%	-16%
Manulife	143.9	3.88%	14%
Brookfield	2.8	9.05%	-13%
Great-West Lifeco	60.4	3.58%	-13%
Sun Life Financial	120.5	4.71%	-12%

Institution	Total assets of analyzed funds (US\$ billions)	Exposure ratio of analyzed assets to carbon sectors ⁹⁹	Alignment ratio for assets analyzed against the Paris Agreement
Crédit Mutuel	2.8	7.15%	-12%
Société Générale	60.1	10.15%	-11%
Banque Postale	11.6	8.75%	-10%
Crédit Agricole	3	5.55%	-10%
BPCE	2.3	5.62%	-9%
BNP Paribas	55.4	5.28%	-8%
BNY Mellon	151.6	5.39%	-15%
Blackrock	2334.1	5.89%	-13%
Wells Fargo	31.5	2.81%	-12%
J.P.Morgan Chase	223.5	4.55%	-8%
Average of ESG funds (global)			-6%
Averages of climate-themed funds (global)			0%

The same exercise was conducted for the main mutual funds and ETFs—US\$10 million or more in assets—of each financial institution for which data were available, regardless of the theme of these funds (ESG/ climate or not).¹⁰⁰ As a result, the performance of the major mutual funds and ETFs of our eight Canadian DTIs was compared. The picture is worrying: overall, none of the mutual funds and ETFs of the eight Canadian DTIs analyzed are aligned with the Paris Agreement, surpassing by 8% (RBC) to 14% (BMO) the maximum exposure to carbon-intensive sectors that would limit global warming to less than two degrees.

Although we can take comfort in the fact that other major Canadian fund managers and French or US banks are not doing much better, that is only a small consolation. However, this is not surprising given that the MSCI Canada and TSX 60 indexes, covering the main Toronto Stock Exchange securities, have been analyzed to have a carbon intensity that is well above the global average and also well above that of other comparable indexes, such as MSCI Australia, MSCI Euro or even MSCI China.¹⁰¹

HIGHLIGHTS: FINANCIAL PRACTICES

- Loans and underwriting by Canada's top five banks to Canada's oil sands sector alone exceeded C\$75 billion from 2016 to 2020, 25% more than federal investment in Canada's green shift.
- All Canadian DTIs continue to present activities to decarbonize the fossil fuel sector as part of "sustainable" finance or to support the diversification of "green" asset portfolios of companies in this sector.
- Total loans (outstanding and committed) and investments (stocks and bonds) of Canada's major DTIs in the fossil fuel sector as of the end of 2020 amounted to over C\$260 billion.
- None of the main mutual funds and ETFs of our eight Canadian DTIs are aligned with the Paris Agreement, surpassing by 8% (RBC) to 14% (BMO) the maximum exposure to carbon-intensive sectors that would limit global warming to less than two degrees.

5. RECOMMENDATIONS: SOME SOLUTIONS WITHIN GOVERNMENT REACH

This report began by stating that its primary objective would be to raise awareness among the public, financial institutions themselves and government decision-makers of the extent and potential consequences of the carbon footprint of bank portfolios. Without a rigorous measurement of the true dimensions of this footprint, awareness will be in vain and the radical shift needed to avoid disaster may come too late. The main findings to date provide a *forward-looking* perspective on the issues raised by proposing a number of recommendations—to governments in particular, as they ultimately hold the necessary levers to impose such a shift—based partly on what we see or at least on what is already emerging elsewhere in the world.

Without exaggeration, the current situation is simply untenable given the enormous decarbonation challenges that await Quebec and Canada as a whole. The financing activities of Canada's major DTIs, as well as their practices in compiling, disclosing and, most importantly, reducing the emissions financed by their asset portfolios, are simply not adequate to offset the risks incurred, collectively, in the face of future climate change.

At the time of completing this report, disturbing new data were released regarding fossil fuel financing by Canada's five major banks (RBC, TD, Scotiabank, BMO and CIBC) in 2021. These banks have increased their lending to the fossil fuel sector by 70% compared to 2020, for a total of more than US\$131 billion: RBC (\$38.8 billion), Scotiabank (\$30.4 billion), CIBC (\$22.2 billion), TD (\$21.2 billion) and BMO (\$18.8 billion).¹⁰² As the report points out, the slight decline in Canadian bank financing for this sector in 2020 therefore appears to have been a one-off, due in part to the particular economic conditions related notably to the public health crisis.

As a result, and in particular because these issues are collective by their very nature, but also because the DTIs have thus far shown that they have not made progress at the pace needed to deal with the climate crisis, it is clear that *governments* must do more and provide the regulatory framework necessary for sustainable financing. In general, this report agrees with the findings established in Bill S-243 on sustainable finance, tabled before the Senate of Canada for first reading on March 24, 2022. In particular, it is fair to consider the following:

- Whereas climate-related financial risks cannot be treated as conventional financial risks because they are characterized by radical uncertainty and irreversible catastrophic consequences and therefore require a distinct approach to urgently align financial flows with climate commitments;
- ...
Whereas climate-related financial risk is endogenous to financial systems and continued financial support for emissions-intensive activities increases future climate-related risks to the stability of financial systems and the long-term interests of financial institutions;
- And whereas investment in energy efficiency, clean energy and clean technologies and the incentivization of innovation and behavioural change must replace investments in greenhouse-gas-emission-intensive activities for effective action against climate change...¹⁰³

Consequently, in the fall of 2021 when the *Statement by the Quebec Financial Centre for a Sustainable Finance* was launched, the President and CEO of the *Autorité des marchés financiers*, Louis Morisset, stated that [translation] “you cannot have finance on the one hand and sustainable finance on the other. Finance must be sustainable, period.”¹⁰⁴ While its adoption would undoubtedly be a step in the right direction, there is no doubt that more needs to be done than what is proposed in Bill S-243 alone, which essentially proposes that major Canadian banks must have plans, targets and reporting practices that are consistent with Canada’s climate commitments and the Paris Agreement objectives, but without imposing any real binding measures for measuring or reducing financed emissions.¹⁰⁵



It is up to all of us, collectively, to demand action. On this basis, the report makes various general recommendations to the Canadian federal and provincial governments, as well as to the financial regulators and supervisors of both levels of government:

- **RECOMMENDATION #1.** That full implementation of the *final recommendations of Canada's Expert Panel on Sustainable Finance* be accelerated,¹⁰⁶ and that federal Bill S-243 (*An Act to enact the Climate-Aligned Finance Act and to make related amendments to other Acts*) be adopted and implemented as quickly as possible.

 - **RECOMMENDATION #2.** That a legal obligation to compile and disclose all of their operational and financed emissions (levels 1, 2 and 3 for all sectors, all asset classes and in full geographic coverage) be imposed on Canadian deposit-taking institutions.
 - 2a.** To ensure the applicability of this legal constraint, the obligation to compile and disclose emissions should also be applied to any Canadian or foreign company doing business in Canada, with turnover over and above a revenue threshold to be determined. Canadian authorities could impose this obligation first on companies listed on the Toronto Stock Exchange, following the example of the US Securities and Exchange Commission, which just announced that publicly traded companies will soon be required to disclose their Level 1 and Level 2 emissions and, eventually, Level 3 emissions.¹⁰⁷
 - 2b.** In order to harmonize compilation and disclosure methods, like the Canadian Securities Administrators¹⁰⁸ in their "Proposed National Instrument 51-107" (2021), DTIs should be required to fully implement the TCFD action framework* since a number of other major financial jurisdictions will soon require and/or consider requiring it, including the *European Union, New Zealand, Australia, Hong Kong, Singapore, Switzerland, Brazil* and *Ontario*.
- * It should be noted that the approach preferred by the Canadian Securities Administrators, which is fairly widely shared by the jurisdictions mentioned above, would allow financial institutions to choose whether or not to disclose their Level 2 and Level 3 emissions and to explain their reasons (based on the "comply or explain" model). This approach does not seem to match the urgency of the situation. The obligation to disclose should be real and complete.

It is important to note that merely compiling and disclosing GHG emissions, including financed emissions, is not *sufficient*, albeit *necessary*, to begin the necessary major shift. The forthcoming recommendations stress that these transparency obligations must entail real and much more ambitious constraints relating to portfolio decarbonization.

It is worth mentioning, however, that some studies have already shown that transparency itself creates downward pressure on the financing of highly carbon-intensive industries. Researchers from the Banque de France, in particular, identified a strong negative and statistically significant correlation between mandatory disclosure of the climate risk exposure of French institutional investors and their involvement in the fossil fuel industry.¹⁰⁹

However, as the Expert Panel on Sustainable Finance noted in its final report in 2019, “[m]arkets work best when assets are properly valued; however, in today’s market economy, climate factors are often mispriced and climate risks are generally underappreciated. Prices and incentives that reflect climate risk are critical...”¹¹⁰

Canadian (and Quebec) DTIs are currently only partially required to identify, quantify and disclose the financial risks specifically associated with their contribution to climate change, as these are generally considered *extra-financial* risks. At the regulatory level right now, “[m]ateriality is the determining factor in any assessment of whether information is required to be disclosed... information is likely material if a reasonable investor’s decision whether to buy, sell or hold securities in an issuer would likely be influenced or changed if the information in question was omitted or misstated.”¹¹¹ It is therefore proposed that the regulatory framework in these areas be significantly tightened:

➤ **RECOMMENDATION #3.** That the definition and scope of the fiduciary duty of Canadian DTIs be clarified (as also proposed by Canada’s Expert Panel on Sustainable Finance¹¹² and Bill S-243¹¹³) and modified as needed to establish and/or increase the relative importance of climate risks.

3a. That mandatory climate “stress tests” be developed and imposed on banks, as also proposed by the *Bank of England*, a number of other European and Asian central banks,¹¹⁴ and the *Network for Greening the Financial System*, of which the Bank of Canada is a member.

3b. That new capital requirements for Canadian DTIs be established and periodically reassessed on the basis of these stress tests, as proposed by the *Office of the Superintendent of Financial Institutions*¹¹⁵ and *Bill S-243*.

In addition, to ensure that climate-related fiduciary and transparency obligations are swiftly and decisively accompanied by true decarbonization of the credit and investment portfolios of Canadian DTIs, this report also proposes, like Oxfam France¹¹⁶ and the *United Nations Environment Programme Finance Initiative*¹¹⁷:

➤ **RECOMMENDATION #4.** That each Canadian DTI be required to develop, adopt and publish by 2025 an action plan to realign all of its portfolios with the Paris Agreement (carbon neutrality by 2050) and explain precisely how this will be achieved, including five-year intermediate targets to be met.

4a. That the exposure of these credit and investment portfolios to the fossil fuel sector on a global scale be above relative thresholds to be determined—for example, 1% of the value of credit assets and/or 1% of the value of securities portfolios—and, from 2025 onward, formally prohibited.

4b. That this prohibition entail, from now until and beyond 2025, progressive divestment obligations and, failing that, financial penalties. That it also entail a formal ban, starting in 2025, on any *new* financing of extraction/exploitation, processing/refining and transportation projects involving fossil fuels (coal, oil, gas).

4c. That, as part of this action plan and these new obligations, each DTI undertake, on a voluntary basis by 2030 and on a mandatory basis starting in 2030, to exclude any *new* financing to companies not disclosing their Level 1, Level 2 and Level 3 emissions, and/or whose emissions are incompatible with achieving the Paris Agreement objectives.

In order to ensure a true ecological transition of Canadian DTI financing activities, the authorities must not only intervene ahead of time, by forcing them to identify, disclose and reduce the climate risks and emissions associated with these activities, but also act after the fact, that is, define and provide guidance as to what specifically falls under “sustainable finance.” Unfortunately, this report highlighted the fact that some of the practices and products that financial institutions still present as sustainable finance—“transition” bonds, carbon capture, ESG funds, etc.—are sustaining, if not increasing, carbon-intensive activities or are only very imperfectly aligned with the objectives of the Paris Agreement. That is why this report recommends:

➤ **RECOMMENDATION #5.** That by 2025 Canada and/or Quebec adopt a “green taxonomy,” *as the European Union has done*, based on harmonized technical criteria at the Canada/Quebec level, so as to establish a classification of industrial sectors, economic activities and products (including financial) considered “sustainable” and/or “environmentally and climate responsible.”

5a. That this Canadian/Quebec green taxonomy, like the European one and unlike the first version of the *Canadian “transition taxonomy” developed in 2021 by the CSA Group*,¹¹⁸ state that “transitional activities are those activities for which there is no economically or technologically viable low-carbon alternative, and can be considered to make a substantial contribution to climate change mitigation when these activities:

- (i) have GHG emission levels that are consistent with the best performance of the sector or industry;
- (ii) do not impede the development and deployment of low-carbon alternatives;
- (iii) do not result in a lock-in of carbon-intensive assets, considering the economic lifetime of those assets.¹¹⁹

5b. That, based on the definitions developed under this taxonomy, including and in particular with respect to “transitional activities,” Canadian DTIs be legally required to demonstrate the sustainability of their “transition” and/or “green” financing.

5c. That the “ESG,” “sustainable,” “responsible,” “green,” “transitional” and other equivalent labels be legally and retroactively associated only with financial activities and products (loans, bonds, investments, mutual funds, ETFs, etc.) that:

- (iv) meet the criteria established by the Canadian/Quebec taxonomy;
- (v) exclude the fossil fuel sector entirely as of 2023;
- (vi) are aligned, as per our recommendation #4, with the objectives of the Paris Agreement.

5d. That, in order to accelerate the shift to sustainable finance, Canadian/Quebec authorities prepare, by 2025, a complete list of DTI financial products and funds that comply with these taxonomies and labelling conditions, and that tax incentives be offered to savers who choose to invest some of their assets in them.

It is also critical to highlight the fact that the federal and provincial governments themselves continue to heavily finance the Canadian fossil fuel sector through grants, loans and investments, tax credits and/or royalty reductions. Looking only at the recent past, a report released in February 2022 shows, for example, that for fiscal years 2020–21 and 2021–22 (as at December 31, 2021), the provincial governments of British Columbia, Alberta, Saskatchewan, and Newfoundland and Labrador have provided the fossil fuel industry with the equivalent of more than C\$4 billion in various financing.¹²⁰

Quebec is no exception: the Caisse de dépôt et placement has committed to complete divestment of the oil and gas sectors by the end of 2022, but still held over C\$4 billion in equity assets in those sectors in early 2021 (in addition to its private assets in natural gas via Énergir).¹²¹ In 2020, the Canadian federal government and its Crown corporations (including Export Development Canada) provided no less than C\$18 billion to the oil and gas sectors,¹²² cementing Canada’s place at the top among G20 countries with the largest share of fossil fuel financing.¹²³

In short, Canadian governments must be more ambitious. To be exemplary, they cannot continue to support the fossil fuel industry so heavily. For the sake of consistency and out of a duty to set an example, this report therefore recommends:

➤ **RECOMMENDATION #6.** That Canadian federal and provincial governments, as well as their Crown corporations and other financial entities, fully disengage from the fossil fuel sector by 2025.

6a. That, as of 2023, Canadian federal and provincial governments, as well as their Crown corporations and other financial entities, exclude any *new* financing of any kind for the fossil fuel sector.

APPENDIX 1.

METHODOLOGICAL CONSIDERATIONS

This report used three main methodological approaches, drawing on both secondary and primary sources. First, a comprehensive review was conducted of the recent body of literature on the environmental responsibilities of the financial sector, on the global scale and in relation to Canadian DTIs in particular. Key international and Canadian coalitions and initiatives on the compilation, disclosure and reduction of financed GHG emissions were identified as a result.

Benchmarks were established by consulting a number of studies on the financing of the fossil fuel sector and on the commitments, activities, portfolios and carbon footprints of banks and other fund managers in Canada and around the world. All of these secondary sources are duly listed in appendices 4 and 5.

Second, the report used primary sources for each Canadian DTI consisting of annual reports, financial statements, environmental responsibility or strategy documents, and other reports to the Carbon Disclosure Project, the Principles for Responsible Banking/Investment, or the Task Force for Climate-related Financial Disclosures. This made it possible to compile total assets, total deposits, the composition of credit and investment portfolios, the exposure to the fossil fuel sectors and related credit risks for 2020, as well as the operational emissions of each DTI.

Government sources were consulted to identify certain relevant indicators, such as the carbon footprint and carbon intensity of the main Quebec or Canadian industrial sectors, as well as those of Quebec and Canada as a whole. All of these sources are also duly listed in appendices 4 and 5.

Finally and most importantly, the analysis was based on the raw data provided by Carbon4 Finance, compiling for each DTI the (Level 1, 2 and 3) emissions of companies, governments, fixed assets and individuals financed by the asset portfolios. The Carbon4 Finance compilations were made using the Carbon Impact Analytics (CIA) methodology, developed in partnership with finance management company Mirova (a subsidiary of Natixis).¹²⁴ As mentioned earlier, the CIA methodology was able to analyze the equivalent of 82% of the total assets reported on the balance sheet of our eight DTIs, excluding only a few asset classes.

For each DTI, Carbon4 Finance compiled the emissions saved and financed by loans to individuals, businesses and the public sector, residential and commercial mortgages, land and real estate portfolios, equity investments in public and private enterprises, and corporate, government and sovereign bonds. Below is the note summarizing the calculation methodologies used in the CIA. This note was provided in conjunction with the compilation of financed emissions. The following table is the proprietary intellectual property of Carbon4 Finance:

Description of Calculation Methodology [for Financed Emissions]¹²⁵

Source	Methodology
1. Loans to businesses	The sector breakdown of loans granted (based on the Global Industry Classification Standard (GICS) ¹²⁶ classification and adapted to Pillar III reporting by banks ¹²⁷) makes it possible to apply sector ratios from the CIA database.
2. Loans to government	The geographical distribution of customers is used to calculate induced emissions via GHG emission ratios per million [Canadian dollars] of public debt.
3. Loans to individuals	<p>(a) Short-term car loan: based on the average carbon intensity of vehicles in the geographical area where the financial institution is positioned (turnover)</p> <p>(b) Short-term consumer loan: emissions are calculated using the carbon intensity of GDP by geographical area</p> <p>(c) Long-term loan [residential mortgage]: Estimate based on average purchase price by country and residential real estate intensity by country</p>
4. Corporate investments [stocks/bonds]	The sector breakdown (based on the GICS classification and adapted to Pillar III reporting by banks) makes it possible to apply sector ratios from the CIA database.
5. Sovereign investments [government/sovereign bonds]	The geographical distribution of customers is used to calculate induced emissions via GHG emission ratios per million [Canadian dollars] of public debt.
6. Real estate assets	The calculation depends on the geographical distribution of assets: if the banking institution does not specify the surface area managed by country, an average of the purchase price of the buildings by geographical area can be used to approximate this surface area. The carbon ratio used is that of tertiary real estate.

Most of the other methodologies for accounting for financed issues currently available apply aggregated and preset sectoral emission ratios to the analyzed portfolios, using a *top-down* approach.¹²⁸ Conversely, the CIA methodology uses a finer, *bottom-up* approach measuring the direct (Level 1 and Level 2) and indirect (Level 3) emissions of over 3,000 *companies* operating in more than 50 subsectors—based on the Global Industry Classification Standard¹²⁹ developed by MSCI—and determining the sector ratios used for the compilation of financed emissions only from those measurements.

The CIA methodology therefore allows for a more accurate estimation of financed emissions, as the sector ratios arising from this *bottom-up* approach are used for all the main niches to which the portfolios of each of our DTIs are exposed, including the most carbon-intensive (coal, oil and gas, automotive and transport, construction and buildings, infrastructure, chemicals, metallurgy, energy supply, etc.). The only sectors for which a “simplified” (*top-down*) approach is applied are recreation and accommodation, consumer goods, textiles, retail trade, services (including financial), pharmaceuticals and tobacco.¹³⁰

Three points also need clarification. First, the CIA methodology largely corrects the “double-counting” phenomenon. Since this methodology counts Level 3 emissions for companies that include, among other things, emissions generated by the *downstream* use of products, there may be instances where these are counted again as Level 1, 2 or 3 emissions for other companies in the same value chain.

For example, *Suncor’s* Level 3 emissions may be double-counted as Level 1 or Level 2 emissions generated by other companies *consuming* fuel produced by the Alberta oil company. To eliminate the accounting overestimations caused by these duplications, the total emissions making up the sector ratios established in a bottom-up manner using the CIA methodology are first divided by a factor of 3. Similar compensatory formulas are also used to correct other types of duplication.¹³¹

Secondly, since the compilations made by Carbon4 Finance exclude *underwriting* services, which are not part of the financial data disclosed by DTIs, this report *underestimates* the emissions actually financed by DTIs. This report found that Canada’s major DTIs regularly act as underwriters for oil and gas companies, both in Canada and abroad. It is therefore reasonable to think that the total emissions financed by each of these DTIs is even *largely* underestimated, as presented here.

Lastly, since Canadian DTIs are not legally required to disclose the sectoral distribution of their securities (investment) portfolio, none do so. As a result, Carbon4 Finance uses a default distribution to estimate financed emissions. For this reason, unlike business loan portfolios, which have specific sector breakdowns for each DTI, this report does not describe in detail the emissions financed by their investment portfolio (stocks, bonds, fixed assets).

*** To learn more about the Carbon Impact Analytics (Carbon4 Finance) methodology:**

THE COMPLETE UP-TO-DATE CIA METHODOLOGY IS AVAILABLE AT:

<https://www.carbon4finance.com/our-latest-carbon-impact-analytics-methodological-guide2>

SHORT/ABRIDGED VERSIONS OF THE CIA METHODOLOGY ARE AVAILABLE AT:

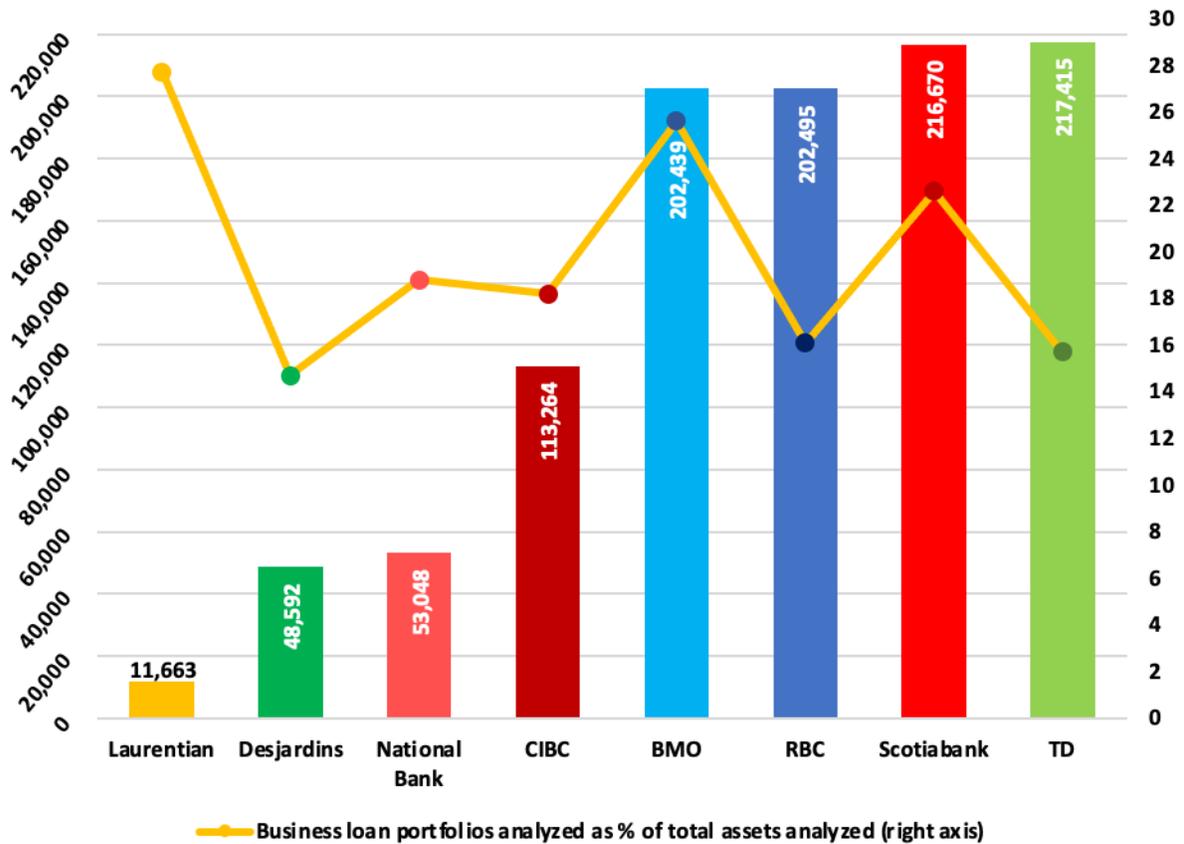
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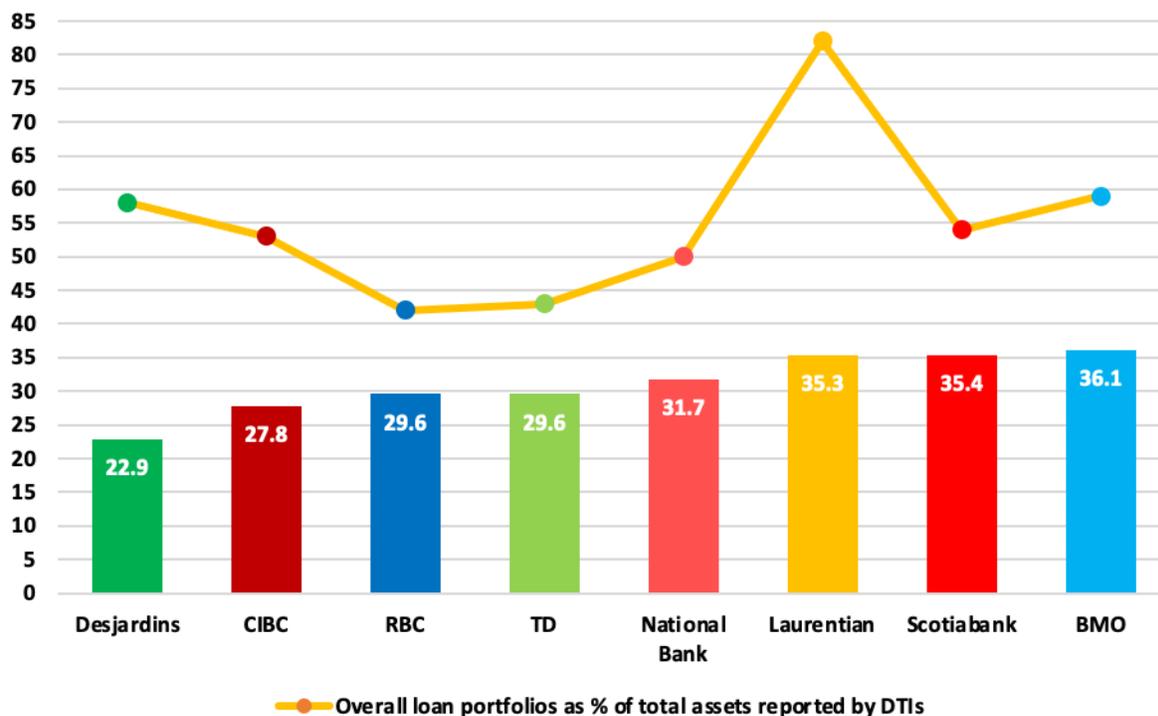
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APPENDIX 2. ADDITIONAL STATISTICAL COMPILATIONS

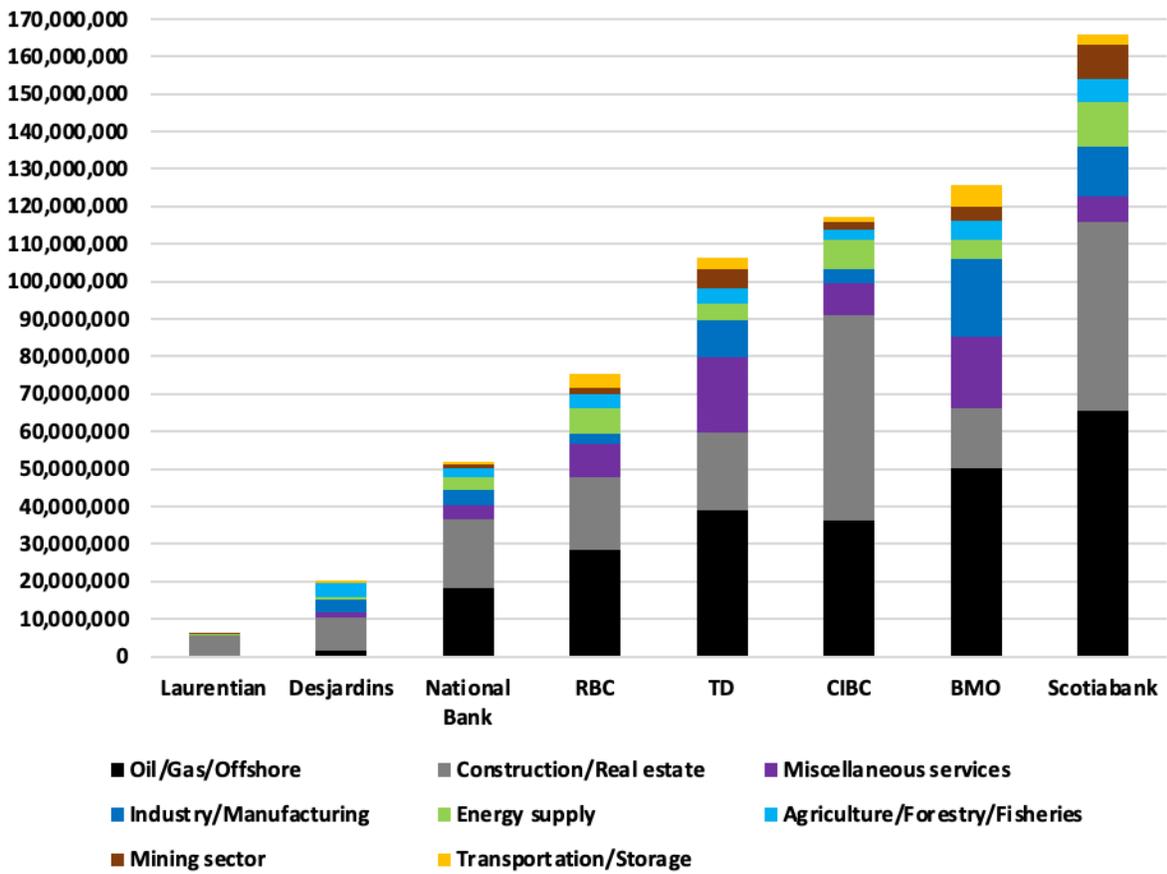
Business loan portfolios analyzed, by deposit-taking institution, 2020 (C\$ millions)¹³²



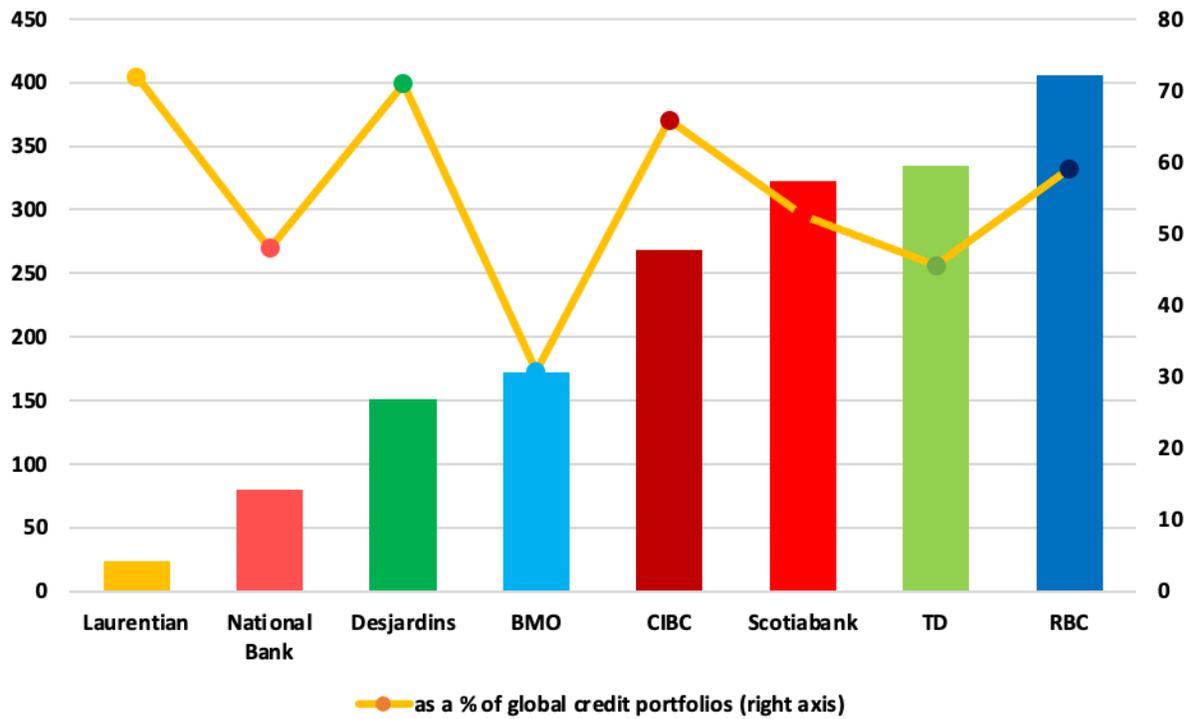
Business loan portfolios analyzed as % of overall loan portfolios of deposit-taking institutions (2020)¹³³



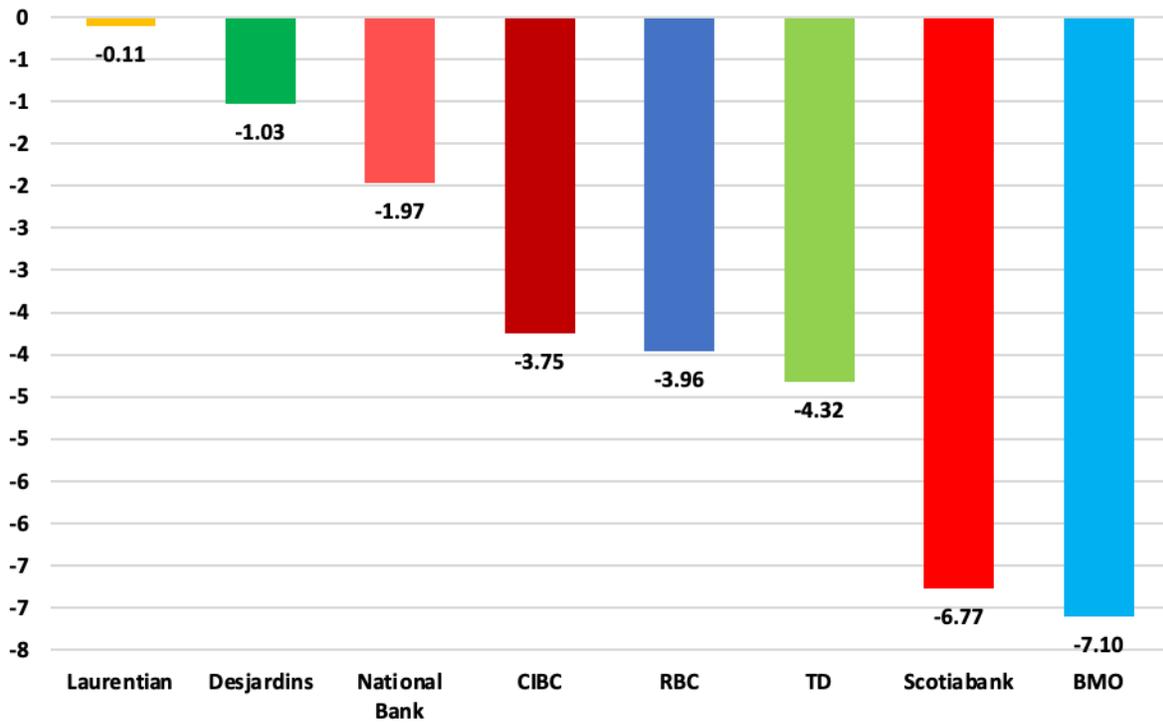
Main sources of emissions financed by business loan portfolios, by deposit-taking institution, 2020 (tonnes CO₂ eq.)¹³⁴



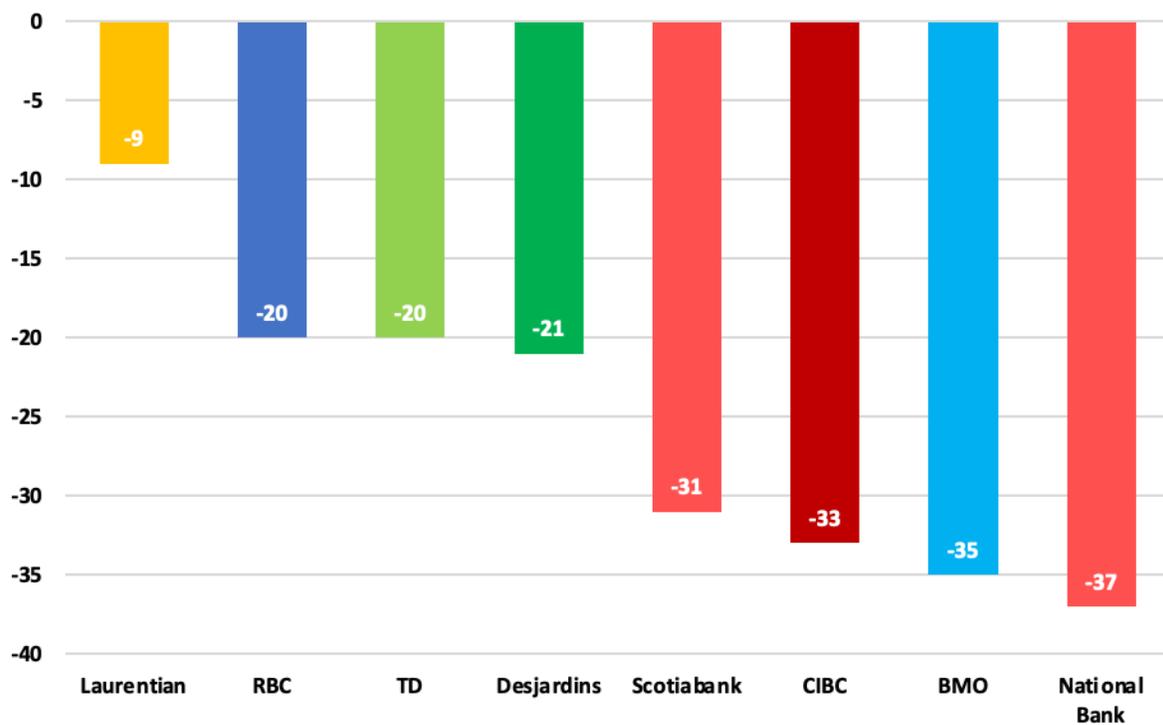
Outstanding mortgage loans and loans to the real estate and the real estate/non-real estate construction sectors, by deposit-taking institution, 2020 (C\$ billions)¹³⁵



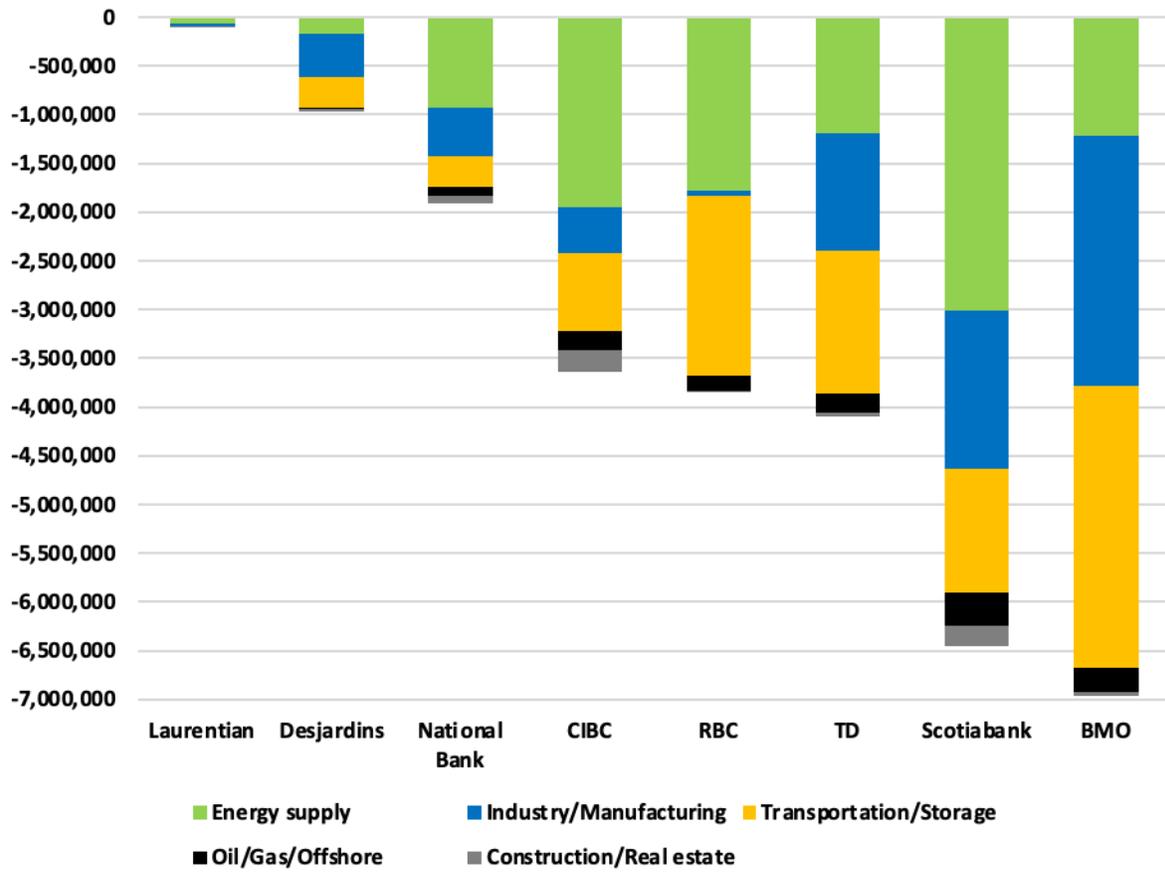
Total emissions savings from business loan portfolios, by deposit-taking institution (millions of tonnes CO₂ eq.)¹³⁶



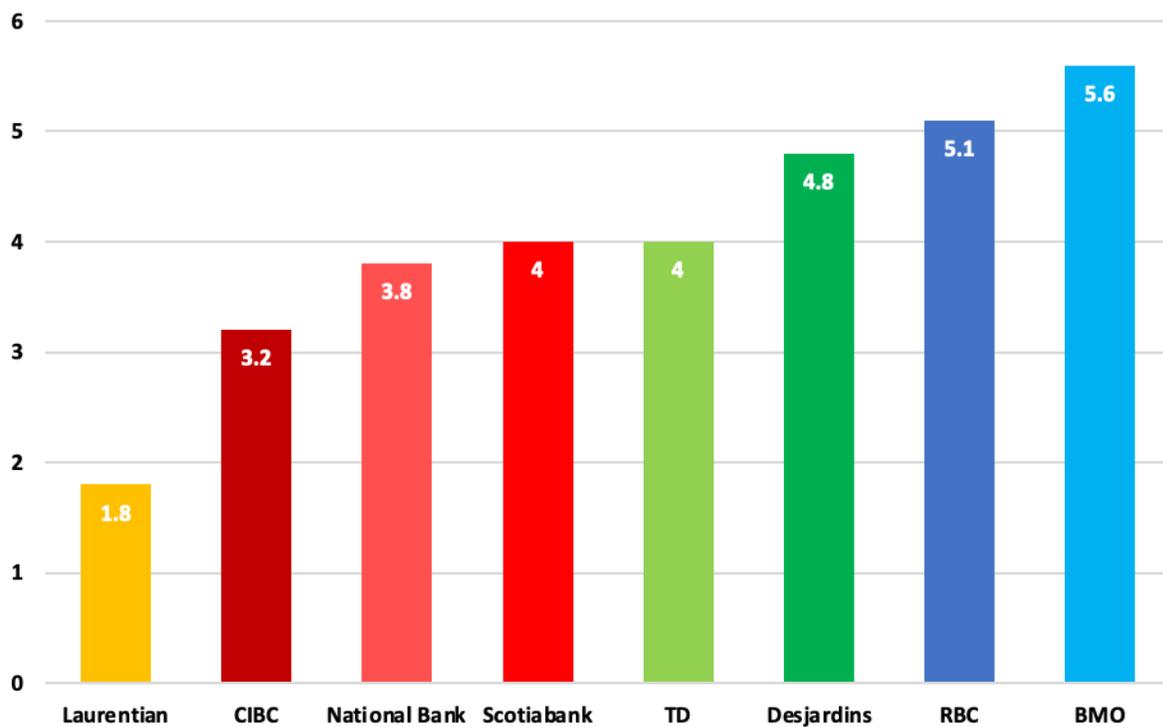
Emissions savings intensity of business loan portfolios, by deposit-taking institution (tonnes CO₂ eq. / C\$ million)¹³⁷



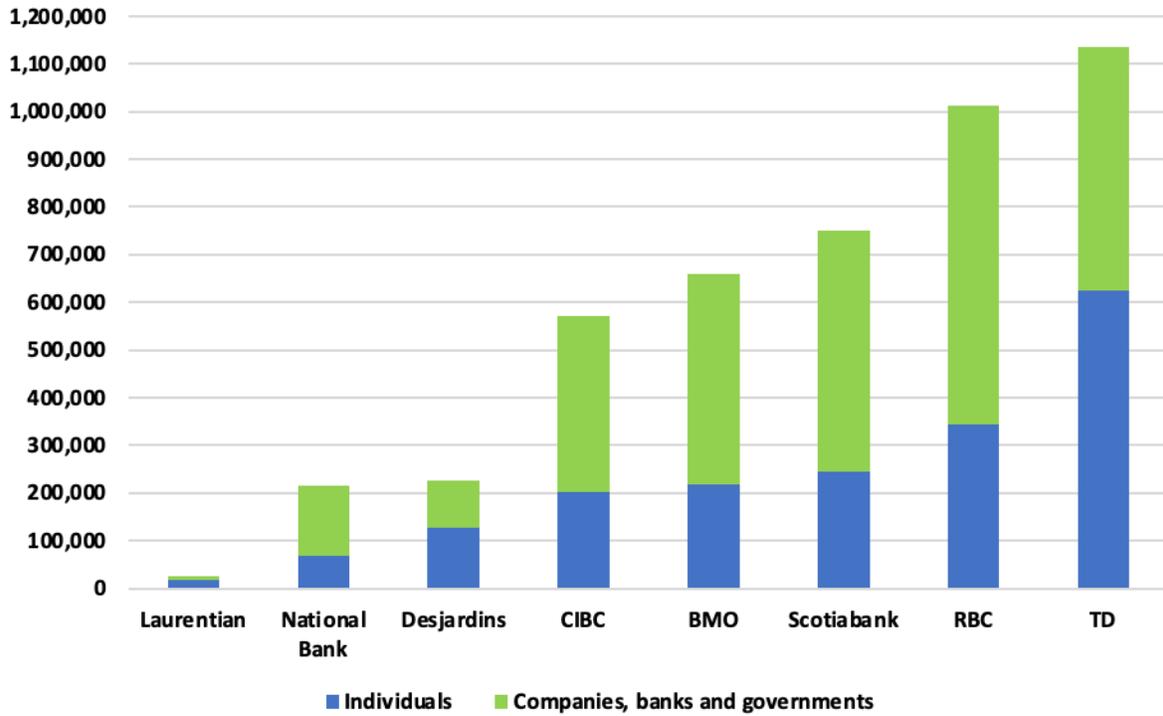
Main sources of emissions savings from business loan portfolios, by deposit-taking institution, 2020 (tonnes CO₂ eq.)¹³⁸



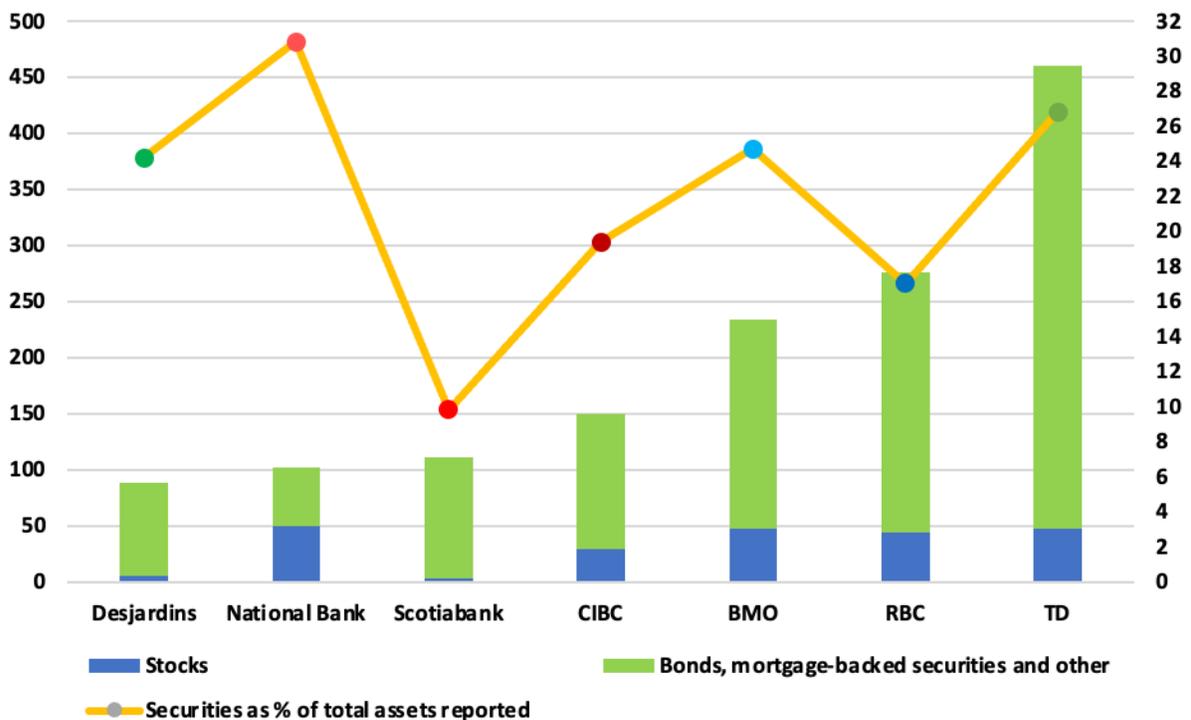
Carbon impact ratio (total emissions savings/total financed emissions) of business loan portfolios, by deposit-taking institution, 2020 (%)¹³⁹



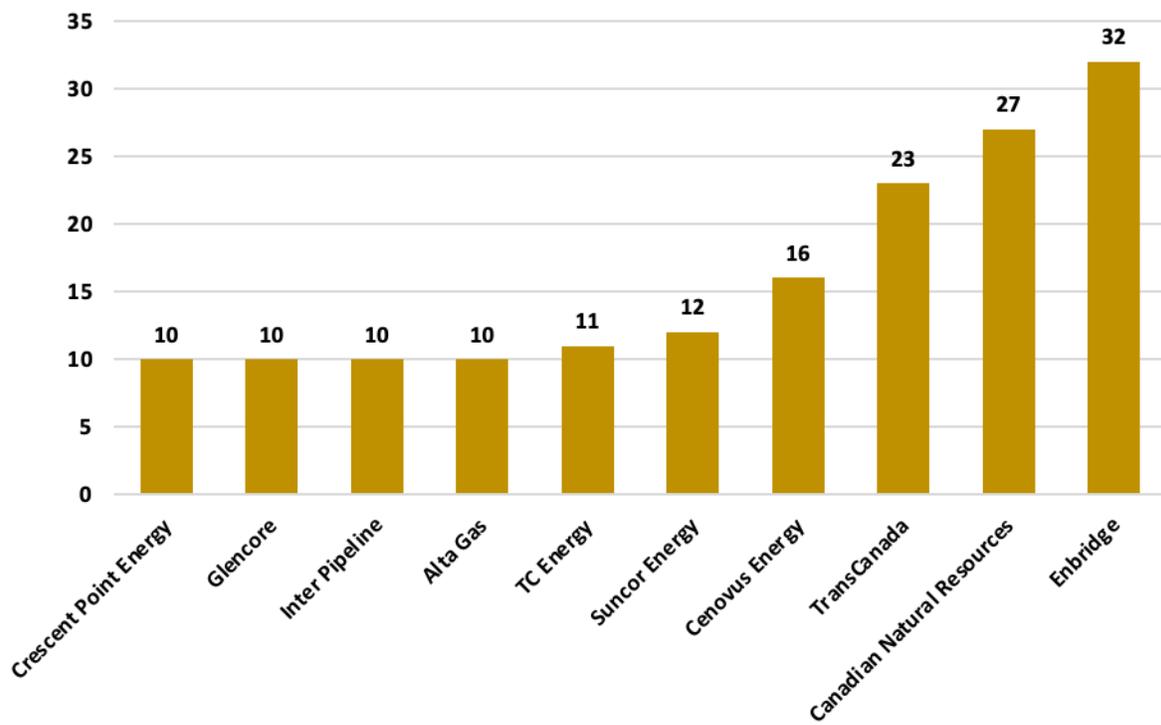
Total deposits by institution, 2020 (C\$ millions)¹⁴⁰



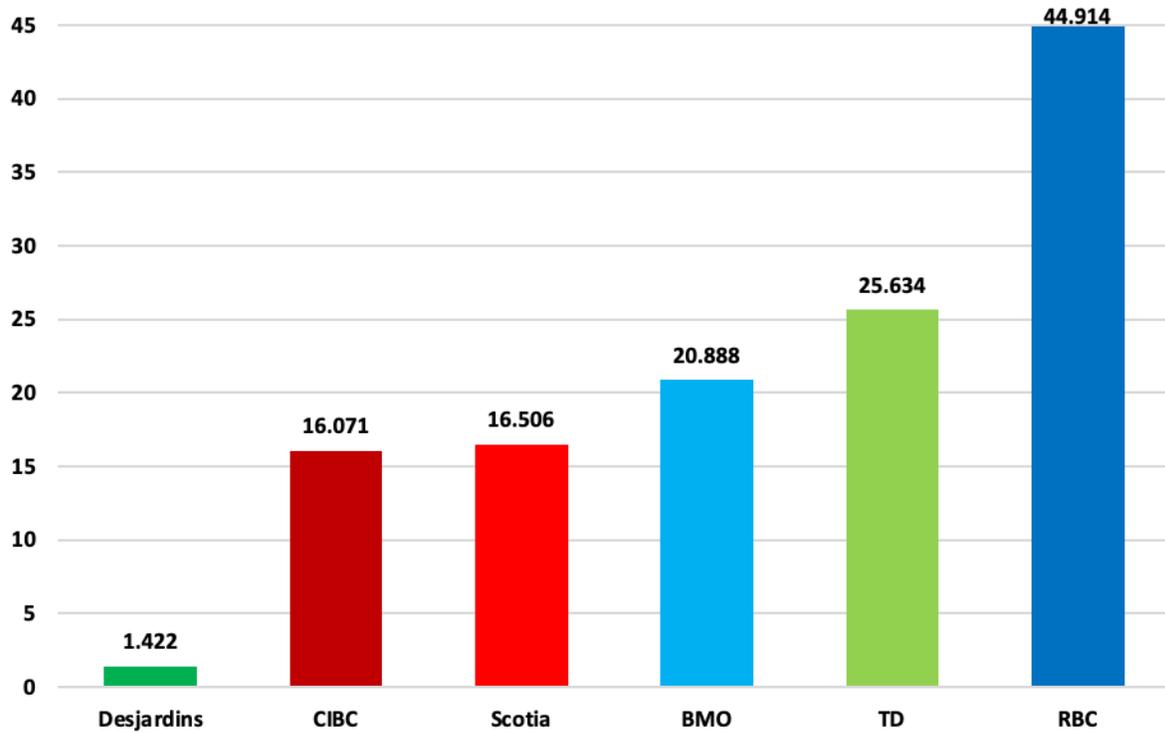
Overall securities portfolios, by deposit-taking institution, 2020 (C\$ billions)¹⁴¹



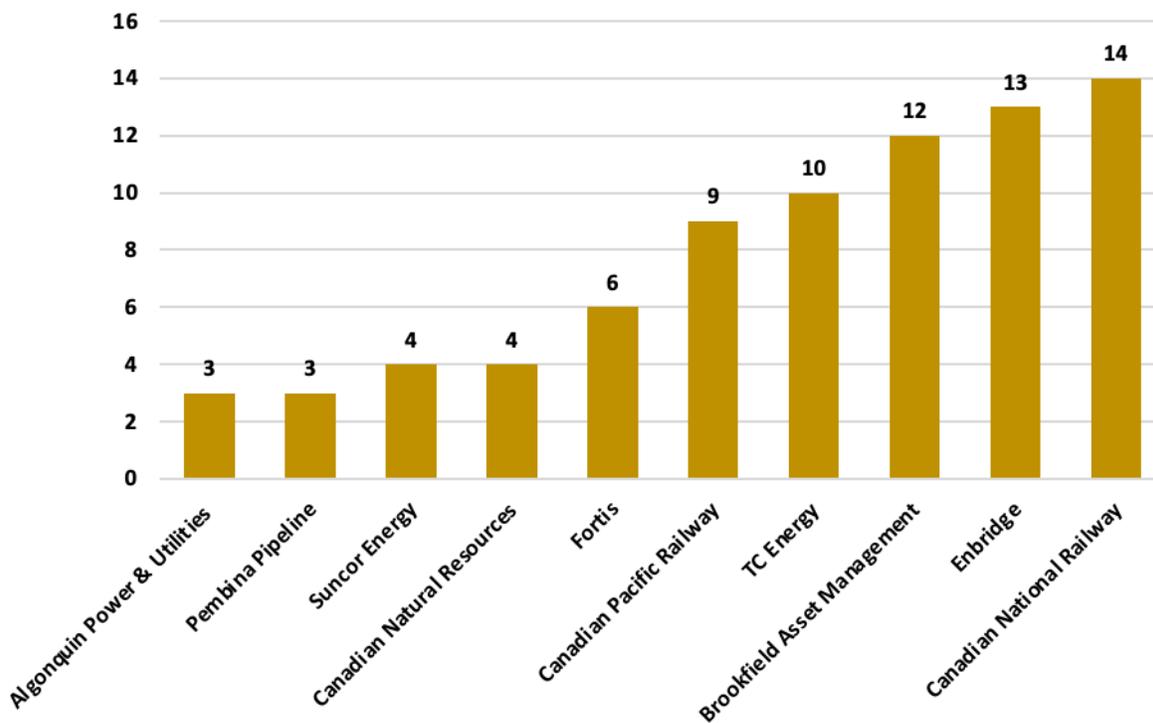
Top 10 fossil fuel sector companies by size of bank credit (loans and underwriting) received from Canadian deposit-taking institutions, 2016–2020 (C\$ billions)¹¹⁴²



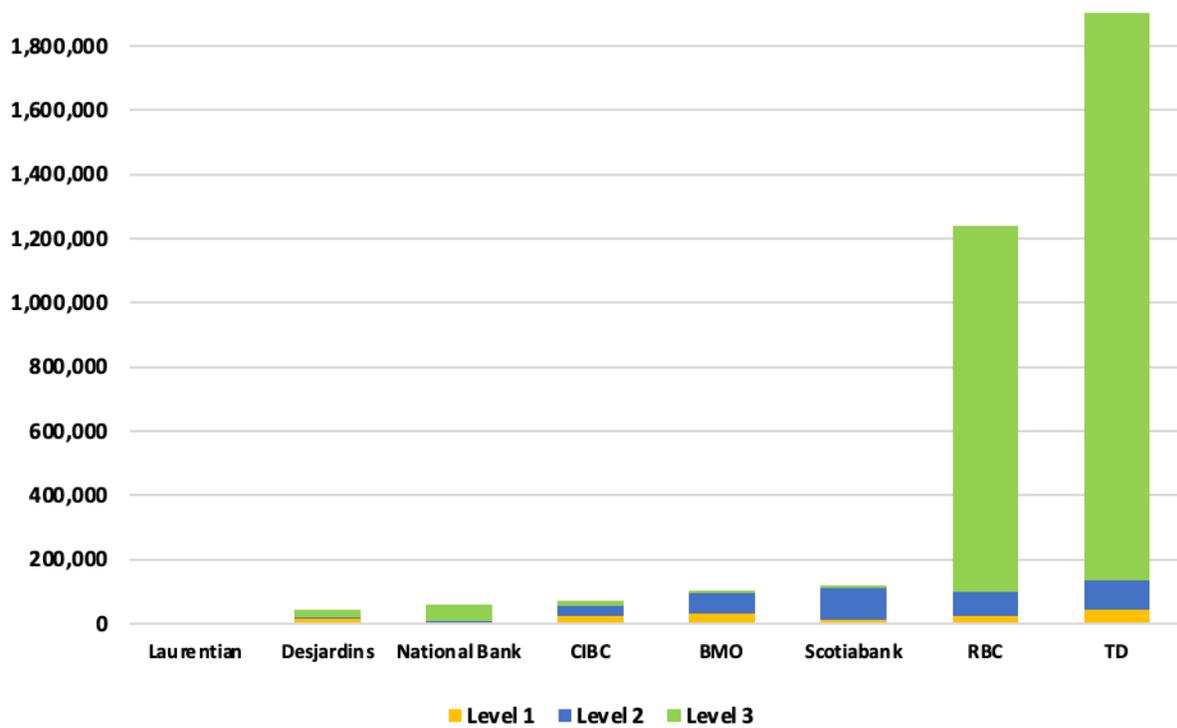
Total investments (stocks and bonds) of Canadian deposit-taking institutions in the fossil fuel sector, as at December 31, 2020 (C\$ billions)¹⁴³



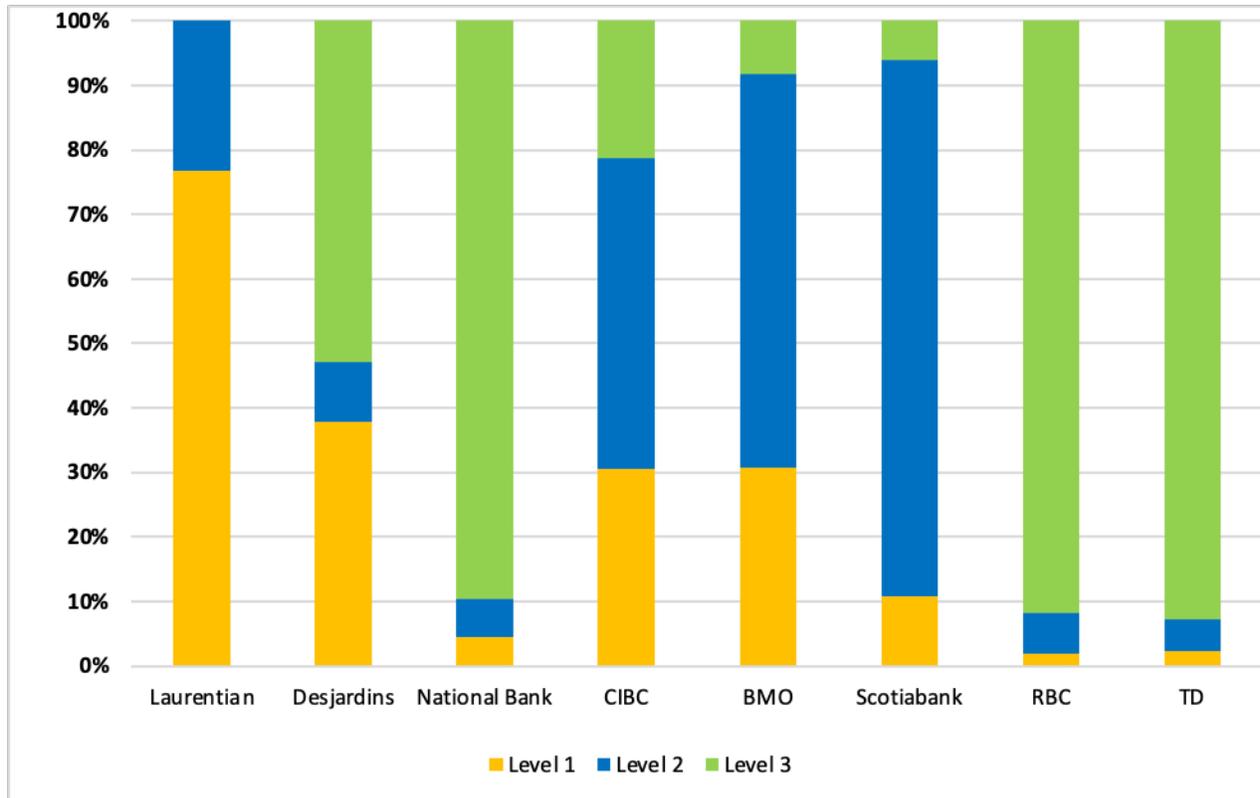
Top 10 fossil fuel sector companies by size of investment (stocks and bonds) received from Canadian deposit-taking institutions, as at December 31, 2020 (C\$ billions)¹⁴⁴



Operational emissions of Canadian deposit-taking institutions as reported in their Carbon Disclosure Project (CDP) report for 2020 (tonnes CO₂ eq.)¹⁴⁵



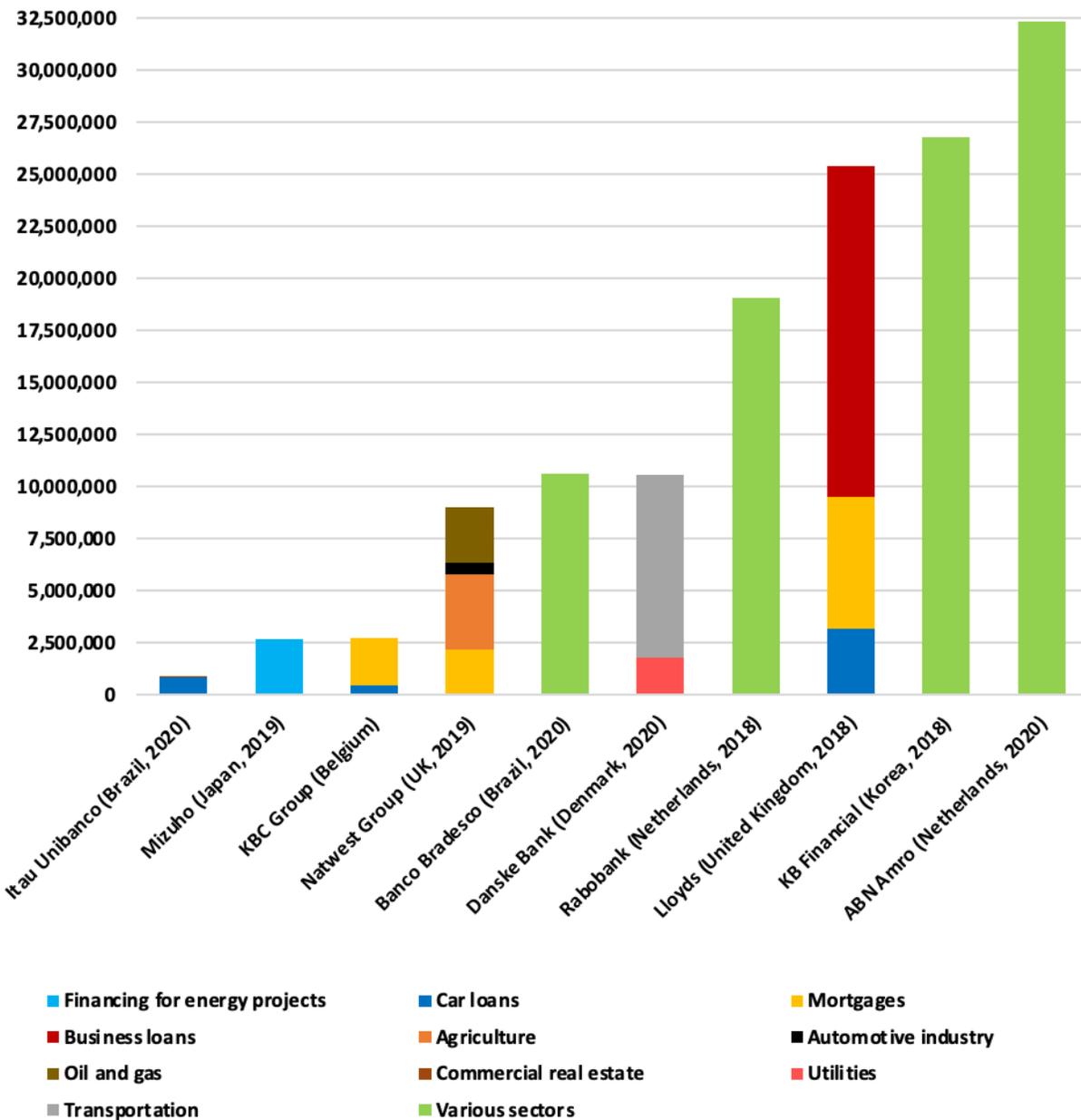
Share (%) of Level 1, 2 and 3 emissions to total operational emissions of Canadian deposit-taking institutions, as reported in their 2020 CDP report¹⁴⁶



Operational emissions vs. financed emissions (loans, securities), Canadian deposit-taking institutions, 2020 (tonnes CO₂ eq.)¹⁴⁷

Deposit-taking institution	Level 1, 2 and 3 operational emissions	Financed emissions: Loan portfolio	Total financed emissions: Loan and securities portfolio components
 BANQUE LAURENTIENNE	1,511	6,252,776	11,795,069
 Desjardins	42,631	21,328,014	84,784,308
 BANQUE NATIONALE	58,794	52,129,470	110,145,094
 CIBC	72,641	118,595,499	230,466,788
 BMO	102,736	126,989,445	297,484,021
 Banque Scotia	118,258	170,276,277	355,532,778
 RBC	1,239,044	77,307,526	369,125,352
 TD	1,907,149	108,733,985	447,408,230

Total financed emissions reported by the largest banks and financial groups under the Partnership for Carbon Accounting Financials (PCAF), (tonnes CO₂ eq.)¹⁴⁸



APPENDIX 3.

ADDITIONAL RELEVANT REFERENCES

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APPENDIX 4.

NOTES AND REFERENCES

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- 144 Source: Profundo Research & Advice (2021), *op. cit.* The data include the investments of the six Canadian DTIs analyzed (Desjardins, CIBC, Scotiabank, BMO, RBC and TD) as well as those of their subsidiaries.
- 145 Sources: 2021 CDP report from each deposit-taking institution. *Laurentian does not report its Scope 3 emissions. What institutions do or do not include for each emission category varies widely, so the data are provided for illustrative purposes only and should be used with all due caution.
- 146 Sources: 2021 CDP report from each deposit-taking institution. *Laurentian reports no Scope 3 emissions. What institutions do or do not include for each emission category varies widely, so the data are provided for illustrative purposes only and should be used with all due caution.
- 147 Sources: 2021 CDP report from each DTI; Carbon4 Finance.
- 148 The selected institutions represent a total of US\$8.11 trillion in assets. Sources: PCAF bank reports, available at: <https://carbonaccountingfinancials.com/financial-institutions-taking-action>. *Out of a total of 122 PCAF member banks as of January 2022, representing a total of US\$28.264 trillion in assets, only 27 banks, representing US\$4.87 trillion in assets, had calculated and published their financed emissions for 2018, 2019, 2020 or 2021. Four “financial groups” offering banking services can be added to this total, representing US\$4.004 trillion in assets. However, the percentage of loan and securities portfolios from which the emissions of each bank were calculated and reported varies widely, so the data presented here should be used with caution.

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