



Royal Bank of Canada

Net-Zero Report

This document contains archived information. Information identified as archived is provided for reference purposes only and should not be relied on. Archived information has not been altered or updated since it was archived. Archived information may not reflect Royal Bank of Canada's current information, activities, commitments, goals, strategies, policies, practices or standards and may not reflect the latest reporting, testing or substantiation standards or methodologies. Royal Bank of Canada fully disclaims any liability for the use of such information and does not intend to update such information except as required by applicable law.

October 2022



Caution Regarding Forward-Looking Statements

From time to time, Royal Bank of Canada and its subsidiaries (RBC, we, us or our) make written or oral forward-looking statements within the meaning of certain securities laws, including the “safe harbour” provisions of the United States Private Securities Litigation Reform Act of 1995 and any applicable Canadian securities legislation. We may make forward-looking statements in this Net-Zero Report dated October 26, 2022 (the Report) and in other filings with Canadian regulators or the U.S. Securities and Exchange Commission (SEC), in other reports to shareholders and in other communications. Forward-looking statements in this Report include, but are not limited to, statements relating to our climate-related objectives, vision, goals, metrics and targets, including our interim emissions reduction targets (interim targets), our interim targets covering additional sectors in the future, our plan to review and revise our initial interim targets as appropriate and at minimum every five years, our intention to publish a transition plan, our support for the transition to a net-zero economy, our commitment to align our lending activities with net-zero by 2050, our commitments to help our clients transition to net-zero and our beliefs about their emission reduction commitments, and that the transition to a net-zero economy will require unprecedented cooperation, action, and collaboration from many parties. The forward-looking information contained in this Report is presented for the purpose of assisting our stakeholders in understanding the ways we intend to address climate-related governance, strategy, risks, opportunities, and metrics and targets, and may not be appropriate for other purposes. Forward-looking statements are typically identified by words such as “believe”, “expect”, “expectation”, “aim”, “foresee”, “forecast”, “anticipate”, “predict”, “intend”, “estimate”, “commit”, “goal”, “plan”, “strive”, “objective”, “target” and “project” and similar expressions of future or conditional verbs such as “will”, “may”, “might”, “should”, “could” or “would”.

By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that our predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that our assumptions may not be correct and that our objectives, vision, commitments, goals, targets and strategies to mitigate and adapt to climate-related risks and opportunities will not be achieved. Moreover, many of the assumptions, standards, metrics and measurements used in preparing this Report continue to evolve and are based on assumptions believed to be reasonable at the time of preparation, but should not be considered guarantees.

We caution readers not to place undue reliance on these statements as a number of risk factors could cause our actual results to differ materially from the expectations expressed in such forward-looking statements. These factors – many of which are beyond our control and the effects of which can be difficult to predict – include the need for more and better climate data and standardization of climate-related measurement methodologies, our ability to gather and verify data, our ability to successfully implement various initiatives throughout our enterprise under expected time frames, the risk that initiatives will not be completed within a specified period or at all or with the results or outcomes as originally expected or anticipated by RBC, the compliance of various third parties with our policies and procedures and their commitment to us, the need for active and continuing participation and action of various stakeholders (including governmental and non-governmental organizations, other financial institutions, businesses and individuals), technological advancements, the evolution of consumer behaviour, varying decarbonization efforts across economies, the need for thoughtful climate policies around the world, the challenges of balancing emission reduction targets with an orderly, just and inclusive transition and geopolitical factors that impact global energy needs, the legal and regulatory environment, and regulatory compliance considerations (which could lead to us being subject to various legal and regulatory proceedings, the potential outcome of which could include regulatory restrictions, penalties and/or fines). Additional factors that could cause actual results to differ materially from the expectations in such forward-looking statements can be found in the Risk sections and Impact of COVID-19 pandemic section of our Annual Report for the year ended October 31, 2021 and the Risk management section of our Quarterly Report to Shareholders for the three- and nine-month periods ended July 31, 2022.

We caution that the foregoing list of risk factors is not exhaustive and other factors could also adversely affect our results. Except as required by law, none of RBC or its affiliates undertake to update any forward-looking statement, whether written or oral, that may be made from time to time by us or on our behalf.

Important Notice Regarding This Report

This Report discusses our interim targets for clients in our Oil & Gas, Power Generation and Automotive sectors (as defined below in this Report). This Report is provided solely for informational purposes, and does not constitute an offer or a solicitation to buy or sell any security, product or service in any jurisdiction; nor is it intended to provide investment, financial, legal, accounting, tax or other advice, and such information should not be relied or acted upon for providing such advice. Nothing in this document shall form the basis of or be relied upon in connection with any contract, commitment or investment decision whatsoever. The recipient is solely liable for any use of the information contained in this document, and neither RBC nor any of its affiliates nor any of their respective directors, officers, employees or agents shall be held responsible for any direct or indirect damages arising from the use of this Report by the recipient.

Climate metrics, data and other information contained in this Report, including but not limited to information relating to financed emissions and interim targets, are or may be based on assumptions, estimates and judgements. In addition, as discussed herein, some of the information provided, including the baseline for setting interim targets and the interim targets, is based on estimated data with very limited supporting documentation. For example, we have not independently verified or assessed the assumptions underlying the data we have obtained from our clients and other third parties that we use to set, track and report on our progress towards meeting our interim targets. Moreover, the data needed to define our pathway towards reaching our interim targets may be limited in quality, unavailable or inconsistent across the sectors we choose to focus on. Given their inherent uncertainty and complexity, and the significant issues with some of the underlying data, assumptions, estimates and judgements believed to be reasonable at the time of the preparation of this Report may subsequently turn out to be inaccurate, and the interim targets set forth in this Report may need to be changed.

In addition, many of the assumptions, estimates, standards, methodologies, scenarios, metrics and measurements used in preparing this Report continue to evolve and may differ significantly from those used by other companies and those that may be used by us in the future. Legislative and regulatory changes, market developments and/or changes in data availability and reliability could also materially affect these assumptions, estimates, standards, methodologies, scenarios, metrics and measurements used by us and/or other companies, and could therefore materially affect the comparability of information and data across industries or companies and from one reporting period to a subsequent reporting period, as well as our ability to achieve our commitments, goals and targets. Any commitments, goals and targets discussed in this Report, including but not limited to the net-zero related commitments and the interim targets for clients in our Oil & Gas, Power Generation and Automotive sectors, are aspirational and may need to be changed or recalibrated as data improve and as climate science, transition pathways and market practices regarding standards, methodologies, metrics and measurements evolve. In setting our interim targets, we recognize that there are significant gaps between our baselines and our targets. The achievement of our interim targets set forth in this Report, any of our future emission reduction targets and our ultimate goal of net-zero in our lending by 2050¹ will depend on the collective efforts and actions across a wide range of stakeholders outside of our control, and there can be no assurance that they will be achieved. See “Caution Regarding Forward-Looking Statements” on page 2.

This Report and the information contained in it is unaudited. This Report is intended to provide information from a different perspective and in more detail than is required to be included in mandatory securities filings and other regulatory reports, including filings with Canadian securities regulators and the U.S. Securities and Exchange Commission (SEC). While certain matters discussed in this Report may be of interest and importance to our stakeholders, the use of the terms “material”, “significant”, “important” or similar words or phrases should not be read as necessarily rising to the level of materiality used for the purposes of securities or other laws and regulations. We have no obligation to update the information or data in this Report.

All amounts in this document are in Canadian dollars unless otherwise noted. Measurements used in this Report are metric.

¹ This goal refers to RBC's lending activities only and is not inclusive of assets under management by RBC Wealth Management (RBC WM) and RBC Global Asset Management (RBC GAM).

Table of contents

- Our Approach** 5
 - Our Journey to Net-Zero 5
 - Guiding Principles for Setting Targets..... 6
 - 2030 Interim Targets 7
 - Path to Interim Targets..... 8
- Key Decisions** 9
 - Cross-Sector Scoping Decisions 9
 - Sub-Sector Selection 10
 - Emissions Scope Selection 10
 - Scenario Selection 10
 - Metric Selection 11
- Sector-Specific Targets** 12
 - Oil & Gas 12
 - Power Generation..... 13
 - Automotive 14
- Data Sources and Considerations** 14
- Achieving Our Net-Zero Ambition** 15

Our Approach

Our Journey to Net-Zero

Climate change presents a significant global challenge that is already impacting people and communities around the world – from extreme weather to reduced food production and melting in the Arctic. International agreements, such as the Paris Agreement, have made plain the urgency to take action this decade in an effort to avoid the worst impacts of climate change.

At RBC, we believe taking action now is imperative. We also believe that we should be clear on the complexity of the challenge. Tackling climate change and achieving net-zero greenhouse gas (GHG) emissions by 2050 require one of the largest economic transformations in generations. Significant policy action, innovation and capital are needed and all of society – government, businesses and individuals – has a vital role.

The **RBC Climate Blueprint** – our strategy for accelerating the pace of climate action – is founded on four key areas where we believe RBC can make an impact: helping our clients' transition to net-zero; holding ourselves accountable by setting targets and measuring progress; informing and inspiring action by sharing ideas and insights and supporting innovation; and advancing net-zero in our operations.

We intend to achieve net-zero in our lending by 2050 – one of the most impactful steps that we can take to address climate change as we support our clients on their climate transition.¹ By joining the Net-Zero Banking Alliance (NZBA), we've joined global peers in collaborating towards achieving this common goal, including a commitment to set interim emissions reduction targets (interim targets). This Net-Zero Report dated October 26, 2022 (the Report) is a critical step on that journey, outlining our interim targets for three key sectors: Oil & Gas, Power Generation, and Automotive.²

We have taken a measured, thoughtful and deliberate approach to target-setting that is aligned with science and industry best practices. When developing our interim targets, we considered, among other factors, the immediate needs of our clients and communities as well as government commitments and stated policies to reach net-zero emissions by 2050.

Our interim targets were developed with input from business partners across the bank to account for the complexities and challenges specific to each sector. Tracking our GHG emissions against these interim targets will serve as a barometer of our progress towards achieving net-zero in our lending by 2050.

We intend to build on the assumptions informing our approach and refine our methodology further as more and higher-quality data become available, new technologies emerge and policies are enacted by governments globally.

We believe all stakeholders have a role to play in the transition and all must take action. As a leading financial institution, we are doing our part, including by supporting our clients through the transition and setting interim targets that can help keep us on track. However, our ability to achieve our interim targets and our ultimate goal of net-zero emissions in our lending activities by 2050 will depend on the collective efforts and actions across a wide range of stakeholders outside of RBC's control. A key foundation of success for our society will be the actions that policymakers take globally to provide clear direction with a long-term view that enables decarbonization efforts – from investments in critical infrastructure such as energy grids, support for scaling key technologies such as carbon capture, utilization and storage (CCUS), to policy actions that encourage businesses and consumers around the world to change their behaviour in ways that reduce GHG emissions and minimize their footprint. These and other factors may cause our actual results to differ materially from our interim targets and may require us to adapt our interim targets to reflect a changing climate, economic and regulatory environment. While recognizing the complexity and challenges of our journey to net-zero, through our work with clients, policymakers and other stakeholders, we are committed to taking proactive, deliberate actions that we believe will help enable decarbonization efforts in support of a just, orderly and inclusive transition.

¹ This goal refers to RBC's lending activities only and is not inclusive of assets under management by RBC Wealth Management (RBC WM) and RBC Global Asset Management (RBC GAM).

² The foregoing methodology excludes the practices of: (a) RBC Global Asset Management (RBC GAM), the asset management division of Royal Bank of Canada (the "Bank"), and RBC Wealth Management (RBC WM). RBC GAM includes the following wholly owned indirect subsidiaries of the Bank: RBC Global Asset Management Inc. (including Phillips, Hager & North Investment Management), RBC Global Asset Management (U.S.) Inc., RBC Global Asset Management (UK) Limited, RBC Global Asset Management (Asia) Limited and BlueBay Asset Management LLP. RBC WM includes the following affiliates: RBC Dominion Securities Inc. (Member–Canadian Investor Protection Fund), RBC Direct Investing Inc. (Member–Canadian Investor Protection Fund), Royal Mutual Funds Inc., RBC Wealth Management Financial Services Inc., Royal Trust Corporation of Canada and The Royal Trust Company, which are separate but affiliated subsidiaries of the Bank; and (b) Brewin Dolphin Holdings PLC and its subsidiaries.

Guiding Principles for Setting Targets

Our guiding principles provide the framework and basis from which we have made the key decisions in our target-setting process.

Client Focus – Supporting Clients' Transition

The biggest impact RBC can make on climate change is helping our clients transition to net-zero. This means engaging with clients and delivering products and solutions that enable their transition – especially for clients in high-emitting sectors.¹ We believe client engagement is critical to achieving emissions reductions in the real economy.

Collaborative Approach

Extensive engagement and collaboration with our frontline business teams throughout the target-setting process supports the credibility of targets and is representative of our desire to integrate targets into our business. Our businesses know our clients best and we leverage and incorporate their industry knowledge to inform our approach to setting emissions reduction targets.

Just, Orderly and Inclusive Transition

The multi-decade transition to net-zero must be just, orderly and inclusive, balancing the needs of multiple stakeholders in order to be successful.

Science-Aligned and Transparent Process

When setting targets, we use credible and well-recognized decarbonization scenarios and incorporate additional data to reflect specific characteristics of our client base in the applicable sectors. We will be transparent about our key choices in the target-setting process and we will clearly communicate our approach in our public disclosures.




¹ This goal refers to RBC's lending activities only and is not inclusive of assets under management by RBC Wealth Management (RBC WM) and RBC Global Asset Management (RBC GAM).

2030 Interim Targets

Our climate strategy, the [RBC Climate Blueprint](#), articulates our commitment to align our lending activities¹ with net-zero by 2050. We published an initial measurement of our financed emissions in our [2021 TCFD Report](#)² along with a commitment to set interim targets for three high-emitting sectors: Oil & Gas, Power Generation and Automotive.³ We chose these sectors after considering a number of factors (which are articulated on page 9).

The target-setting process was overseen by senior executives at RBC, including our Group Executive, with oversight from our Board of Directors. We plan on reviewing and revising our interim targets as appropriate, at minimum every five years, to support their alignment with evolving economic realities, market practice and current climate science. Table 1 below summarizes our interim targets.

Table 1: 2030 Interim Targets

| | Emission Scope ⁴ Inclusion | 2030 Target (as % reduction from 2019 baseline) | 2030 Target (as the portfolio measurement) | RBC 2019 Baseline | Sub-Sector Inclusions & Exclusions | Metric Used | Unit | Scenario Used |
|--|--|---|--|---------------------------------------|---|------------------------------|-------------------------|-------------------------------------|
|  Oil & Gas | Scopes 1, 2 | 35% reduction | 4.9 g CO ₂ e/MJ | 7.6 g CO ₂ e/MJ | Include: Upstream, downstream, integrated | Physical Emissions Intensity | g CO ₂ e/MJ | Canada ERP ⁵ |
| | Scope 3 | 11 - 27% reduction | 61.1 - 50.2 g CO ₂ e/MJ | 68.6 g CO ₂ e/MJ | Exclude: Midstream, services | | g CO ₂ e/MJ | IEA ⁶ NZE ^{7,8} |
|  Power Generation | Scope 1 | 54% reduction | 156 g CO ₂ e/kWh | 340 g CO ₂ e/kWh | Include: Electricity generation Exclude: Clients involved in transmission, distribution, non-generation | Physical Emissions Intensity | g CO ₂ e/kWh | IEA NZE |
|  Automotive | Combined target for Scope 1, Scope 2 & Scope 3 tank-to-wheel | 47% reduction | 102 g CO ₂ e/km | 192 g CO ₂ e/km | Include: Manufacturing, ⁹ financing Exclude: Retail motor vehicle loan, new vehicle dealer, trucking rental and leasing, railway, and other ¹⁰ | Physical Emissions Intensity | g CO ₂ e/km | IEA NZE |

¹ This goal refers to RBC's lending activities only and is not inclusive of assets under management by RBC Wealth Management (RBC WM) and RBC Global Asset Management (RBC GAM).

² Initial measurement was developed using the Partnership for Carbon Accounting Financials (PCAF) methodology for financed emissions. PCAF is an industry-led partnership to facilitate transparency and enable financial institutions to assess and disclose greenhouse gas emissions of loans and investments.

³ In our 2021 TCFD Report, we committed to setting interim targets for three high-emitting sectors: Oil & Gas, Power Generation, and Automotive and Transportation. At RBC, we classify sectors based on our internal standard industry classification (SIC) codes. As these SIC codes do not directly align with NZBA-defined sectors (e.g., midstream oil and gas is classified under power and utilities), we have re-grouped our internal SIC codes for the purposes of setting and reporting our interim targets in this Report. This facilitates comparison to the NZBA-defined sectors.

⁴ The Greenhouse Gas Protocol (GHG Protocol) is the leading global corporate standard for measuring and managing GHG emissions. To guide companies in the task of identifying and calculating the emissions they create and contribute to across the value chain, the GHG Protocol breaks emissions down into three "Scopes". Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions not included in Scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions.

⁵ Emissions Reduction Plan. The target is informed by the Canada ERP. We deviate from the scenario-implied reduction rate of 40% as the RBC portfolio includes exposure from other geographies, including the United States, for which we do not have sufficiently granular and credible regional scenarios.

⁶ International Energy Agency

⁷ Net-Zero Emissions

⁸ Only the upper-bound of the range is based on the IEA NZE. The lower-bound is based on RBC's assessment of the policy landscape in key jurisdictions and an analysis of our portfolio at the time of this Report.

⁹ Manufacturing includes passenger cars and light trucks.

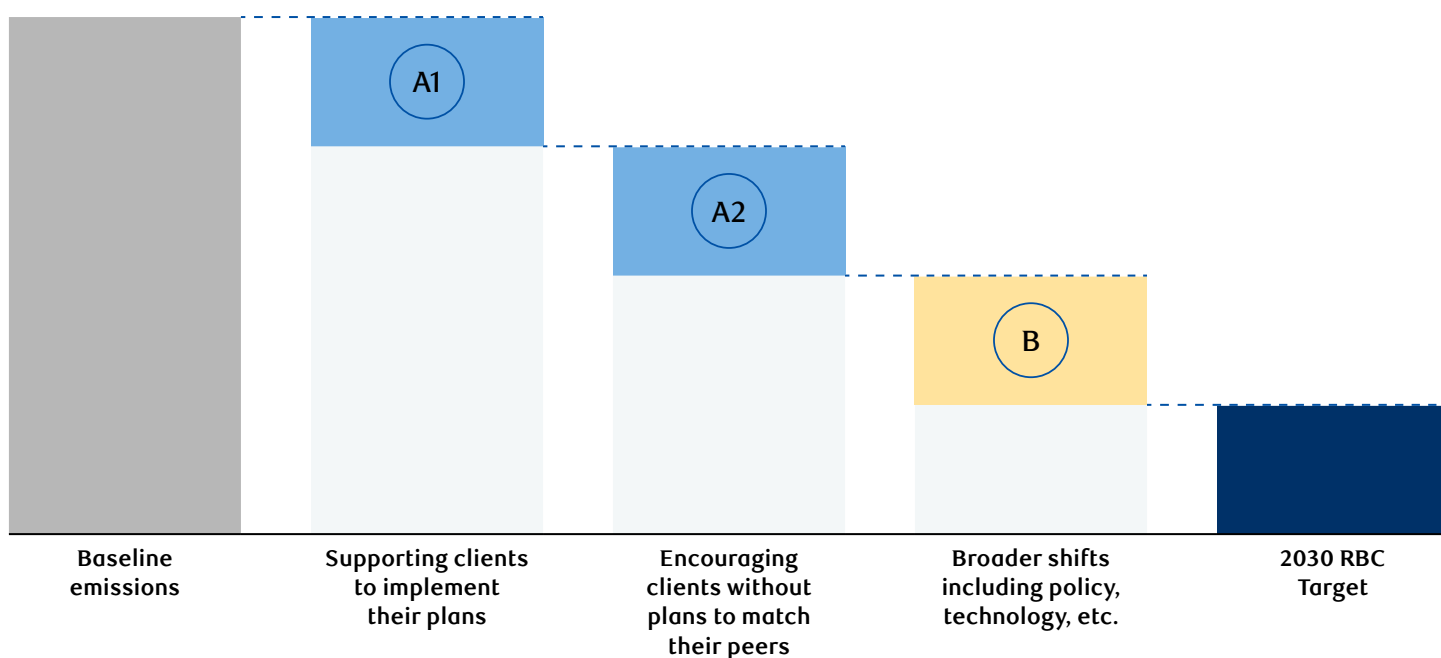
¹⁰ Other includes airlines, auto services, wholesale, couriers and freight, marine transport, other dealers, railroad equipment, tires and trucking.

Path to Interim Targets

We recognize that meeting our targets will require action by RBC, our clients and other stakeholders including policymakers. We are encouraged, for example, that some of our clients have already established decarbonization plans and set emissions reduction targets. RBC intends to support these clients in implementing and following through on their plans (lever A1 in Figure 1 below). Where clients have not yet done so, RBC intends to encourage clients to establish and implement decarbonization plans (lever A2 in Figure 1 below). We also intend to evolve our business in a manner that helps us progress towards meeting these targets.

In some instances, achieving these interim targets will require additional action beyond the control of RBC and our clients. Success will depend on broader changes in the economy driven by policy action (such as incentivizing clean energy sources in power generation) as well as technological breakthroughs such as in battery technology and green hydrogen. While RBC is committed to contributing to these broader shifts through actions such as thought leadership, support for scaling key technologies and policy advocacy, many of these factors remain outside of our direct control, such as factors discussed on page 12 (lever B in Figure 1 below). In setting our targets, we are encouraged by signs of increasing policy commitment and action in key jurisdictions¹ and recognize the need for increased momentum towards net-zero by all stakeholders.

Figure 1: Key levers for progressing towards targets (for illustrative purposes only)²



The interim targets are aspirational and have been established based on the climate scenarios and pathways, data and methodologies that are reasonably available to us as of the date of this Report, and certain other assumptions that we believe are reasonable and appropriate for the purpose of setting these targets, including ordinary rates of growth and development of our businesses, continued progress towards stated climate ambitions by both our clients and government entities, and corresponding changes in the end-use of our clients' products. We recognize that there are significant gaps between our 2019 baseline and our targets. The achievement of these targets will depend on the collective efforts and actions across a wide range of stakeholders, which are outside of our control. Future updates to the scenarios we used, including changes to inputs underlying the scenarios, such as changes in public policy, industrial and technological advancements or consumer behaviour, may result in changes to the sectors' net-zero pathways and, therefore, our targets for these sectors. Additional factors, including improvements to data and methodologies, as well as factors affecting the growth of our businesses and other factors described in "Caution Regarding Forward-Looking Statements" and "Important Notice Regarding this Report", may also necessitate changes to our 2019 baseline and/or 2030 interim targets for one or more of the sectors below.

¹ For example, both Canada and the United States have announced goals of achieving net-zero by 2050 and established interim targets by 2030. These have been followed up with concrete policy actions such as the Canadian Emissions Reduction Plan (ERP) and the U.S. Inflation Reduction Act (IRA).

² Figure 1 depicts conceptually the different levers for progressing towards our interim targets. This Figure 1 is for illustrative purposes only and is based on various assumptions, including assumptions regarding factors that are beyond our and our clients' control. The size of each lever (A1, A2 and B) in Figure 1 should not be relied upon as reflecting the expected or actual proportion of each lever compared to the other levers for any of the interim targets discussed herein. The actual size and proportion of each lever is expected to vary for each of the sector-specific interim target(s) discussed in this Report.

Key Decisions

Setting targets requires a number of decisions to be made that can be categorized as follows:

- **Cross-Sector scoping decisions:** apply to all of our targets (**Table 2**)
- **Sector-specific target decisions:** apply to specific sectors and are made in an iterative manner (**Figure 2**)

Cross-sector Scoping Decisions

Table 2: Cross-sector scoping decisions for sector targets

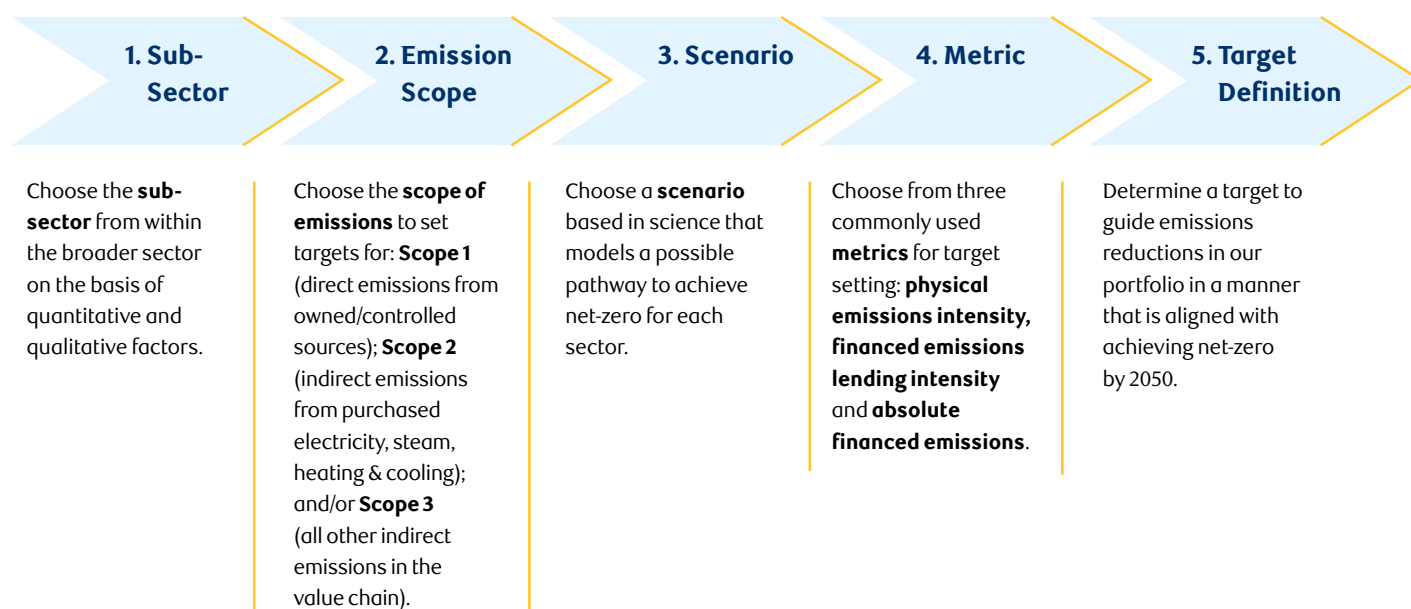
| Decision | Decision Impact | Our Rationale |
|--|--|--|
| Baseline year 2019 | Establishes a starting point for measuring our progress towards net-zero. | 2019 reflects our ordinary course of business and resulting emissions. Data for 2020 were atypical due to the COVID-19 pandemic, and limited 2021 data are available due to a time lag in GHG emissions reporting from our clients. ¹ |
| Business coverage Capital Markets, Personal & Commercial Banking ² and City National Bank | Specifies which businesses are in scope for our initial interim targets. | These business lines have the greatest lending exposure to the sectors and sub-sectors for which we are setting interim targets. |
| Activities Total lending and off-balance sheet commitments, including project finance ³ | Specifies which financing activities are in scope for our initial interim targets. | These activities represent our total lending commitment as a financial services provider to our clients. |
| Authorized versus outstanding credit balances Authorized | Determines loan exposure we use to calculate our interim targets. | Authorized balances reflect our total lending commitment and are a more stable data point than outstanding balances, which fluctuate with amounts drawn. |

¹ NZBA Guidelines for Climate Target-Setting for Banks permit the baseline year to go beyond two full reporting years in situations of exceptional current economic circumstances and/or where there are data quality lags beyond the banks' own control such as the COVID-19 pandemic. Because of the impact of COVID-19 on 2020 baselines, NZBA has found it acceptable for banks setting targets in 2022 to use 2019 as their baselines.

² In particular, the Business Financial Services group in RBC Personal & Commercial Banking.

³ Includes letters of credit and guarantees; excludes underwriting.

Figure 2: Sector-specific target decisions



1. Sub-Sector Selection

We considered the following quantitative and qualitative factors for sub-sector selection:

- The significance and relative contribution of Scope 1, 2 and 3 GHG emissions by sub-sector
- The authorized loan exposure for the sub-sector relative to our total lending commitments
- The reliability of available data
- The availability of decarbonization pathways and scenarios to reach net-zero by 2050

Additional considerations on sub-sector selection for each sector can be found in the “Sector-Specific Targets” section on pages 12-14.

2. Emissions Scope Selection

In determining the scopes of emissions included in each target, we considered the significance and impact of the activities of the sub-sector on the production of Scope 1 and 2 emissions (direct and indirect operational) and Scope 3 end-use emissions, and the availability and quality of the data. The degree of direct influence that our clients have on the particular scope of emissions was also an important factor. Additional detail on emissions scope selection for each sub-sector can be found in the “Sector-Specific Targets” section on pages 12-14.

3. Scenario Selection

Climate scenarios based in science describe how society can decarbonize to net-zero such that total emissions remain within a carbon budget.¹ Climate scenarios are produced by modeling how all parts of the economy and society work together to decarbonize, including the need for unprecedented investments in new technology, infrastructure and supply chains. Scenarios incorporate a broad range of assumptions related to policies, regulations, government support, international cooperation, technology, and consumer preferences and behaviour, which are evolving in real time and are out of our control.

A given scenario uses a set of assumptions and provides one possible view of how the transition could occur over the next three decades. We chose scenarios for our initial interim targets based on an assessment of their granularity, the relevance of their assumptions to our lending portfolio² and the credibility of the scenario designers. Our ability to derive reliable pathways from scenarios may be limited by the granularity of sectoral, regional, and emissions data and assumptions. Additionally, each pathway will be influenced by the scenario’s assumptions about technology, policies and regulations (many of which have yet to be developed, implemented or applied at scale) and consumer preferences and behaviour, which are difficult to predict. Since this is a rapidly evolving space, we have also considered the depth of experience and credibility of the scenario designers and the extent to which the scenario has been used by other organizations and stakeholders.

¹ A carbon budget is the amount of carbon dioxide emissions allowed over a period of time to limit the earth’s temperature from exceeding a certain threshold.

² This goal refers to RBC’s lending activities only and is not inclusive of assets under management by RBC Wealth Management (RBC WM) and RBC Global Asset Management (RBC GAM).

The achievement of our interim targets under the scenarios selected will depend on, among other factors, the implementation of government policies, the development and scaling of technologies as well as the continued evolution of data and climate science. We plan to continue to review and consider updates to our pathways as further information and guidance become available.

4. Metric Selection

RBC considered three commonly used financed emissions metrics in target setting:

- 1. Absolute financed emissions.** Absolute financed emissions measures a financial institution’s share of a borrower’s emissions. With respect to a borrower, this metric is calculated by multiplying the borrower’s emissions by an attribution factor, which is equal to the amount of financing provided to the borrower divided by the borrower’s enterprise value including cash (EVIC). At a portfolio level, this metric is calculated by summing up the absolute financed emissions of the borrowers in the portfolio.
- 2. Financed emissions lending intensity (FELI).** FELI translates a borrower’s absolute financed emissions to an emission intensity metric based on the amount of financing a financial institution commits to the borrower’s sector. At a portfolio level, this metric is calculated by dividing the sector portfolio’s absolute financed emissions by the financial institution’s total sector financing.
- 3. Physical emissions intensity.** Physical emissions intensity measures a borrower’s emissions per unit of production (e.g., the number of megawatt-hours or megajoules of energy produced). At a portfolio level, physical emissions intensity measures the exposure-weighted average of the physical emissions intensities of the borrowers in the portfolio, as shown in Figure 3.

While our ultimate goal of net-zero emissions in our lending activities by 2050 will require reductions in absolute emissions, we chose to set our interim targets using a physical emissions intensity metric for the following reasons:

- 1. Greater stability than other metrics, as these other metrics may be volatile because they attribute a proportion of a borrower’s emissions based on a bank’s lending commitment relative to the borrower’s Enterprise Value Including Cash (EVIC) (i.e., driven by fluctuating commodity prices);
- 2. Comparability between clients on the basis of relative improvements in emissions reductions based on output, regardless of client size; and
- 3. Appropriate recognition of the continued global need for essential goods and services produced by high-emitting, hard-to-abate sectors and the need for us to continue to engage with our clients as they transition their operations to lower carbon models rather than simply reducing our emissions by withdrawing capital from carbon-intensive sectors.

We will continue to iterate our target-setting approach, including metric selection, as data availability and methodologies evolve.

Figure 3: Sector portfolio physical emissions intensity measurement

$$\frac{\sum_{\text{Clients}} \frac{\text{Company emissions}}{\text{Company production}} \times \text{Financing to client}}{\text{Total RBC sector financing}}$$

Sector-Specific Targets

We worked closely with sector-specific business teams across RBC in an effort to consider whether the targets and methodology decisions we have chosen are both ambitious and aligned with the characteristics of our clients' business operations.

Oil & Gas

Business context

As a strategic advisor and capital provider for many of the world's largest oil & gas producers, RBC can play an essential role in facilitating the transition to a lower carbon future. Our commitment to our oil & gas clients goes beyond providing capital, and includes collaborating on solutions for reducing carbon emissions now and into the future.

We are encouraged by the announcement of emission reduction goals by many of our energy clients and, through collaborative discussions with these clients, believe that many of our energy clients' interests are aligned with RBC's commitment to reduce operational emissions for the sector. We will continue to partner with our clients as they improve the quality of their disclosures about their end-use emissions and will work closely with them to support solutions that address climate risks as they transition toward net-zero by 2050.

Sub-Sector Selection

Our initial interim target for the Oil & Gas sector covers the upstream, downstream and integrated sub-sectors¹ – accounting for the largest proportion of the emissions footprint for the sector. Due to limited data and methodology options available for setting a physical emissions intensity target, we did not include midstream² as part of our initial interim target. We considered that midstream has a lower emissions footprint than upstream and downstream. We also excluded the services³ sub-sector given its lower emissions footprint.

Emission Scope Selection

Oil & Gas targets include both an operational target (Scopes 1 & 2) and an end-use target range (Scope 3). Our operational interim target provides a clear view of our priorities to our clients and will require activities such as improving the efficiency of energy production operations. We will continue to support our clients' transition processes and are committed to engaging closely with them to support their progress.

We believe setting a Scope 3 interim target is important because it signifies RBC's commitment to the global effort to decarbonize and provides a goal that our clients and RBC can work towards. We also recognize that Scope 3 physical intensity reduction depends on a variety of external factors that are not under the control of RBC or our clients and will require policy actions (e.g., incentivizing shifts towards less carbon-intensive fuels and lower-emission uses) as well as the scaling of key technologies (e.g., CCUS), among other stakeholders' actions.

We have chosen to set a range for our Scope 3 target. The lower-bound 11% reduction is based on RBC's assessment of the policy landscape in key jurisdictions⁴ and an analysis of our portfolio at the time of this Report. Our ability to achieve this target would depend on the adoption of consistent policies by governments in those jurisdictions supporting their commitments. The upper-bound 27% reduction is based on the IEA NZE scenario, and our ability to achieve this target would depend on the accuracy of the assumptions on which the scenario is based, such as those relating to shifts in economic activity (e.g., growth of the petrochemical industry), supportive policy action (e.g., carbon taxes) and the scaling of key technologies (e.g., CCUS and blue hydrogen).

¹ Upstream oil companies are involved primarily in exploration and production; downstream oil companies deal with refining and delivery; and integrated Oil & Gas companies operate in multiple streams.

² Midstream activities are made up of storage and processing.

³ "Services" refers to products and processes that support the Oil & Gas industry.

⁴ For example, both Canada and the United States have announced goals of achieving net-zero by 2050 and established interim targets by 2030. These have been followed-up with concrete policy actions such as the Canadian Emissions Reduction Plan (ERP) and the U.S. Inflation Reduction Act (IRA) which intend to fund investments in key technologies such as CCUS.

In the development of our Scope 3 interim target range, we relied on variables including assumptions, estimates, methodologies and scenarios that we believe to be reasonable at this time. However, these will continue to evolve and are dependent on multiple factors such as data quality and scenario updates, many of which are beyond our control and the effects of which can be difficult to predict. Inaccuracies in the aforementioned variables underpinning our interim target range may result in future changes to the target range and could have a significant impact on our ability to meet it.

Ultimately, the achievement of our Scope 3 target range will require a concerted effort from consumers, industries and governments globally. We anticipate that our interim target range will need to evolve as data, methodologies and scenarios continue to change.

Scenario Selection

Our initial interim target for Scope 1 and 2 emissions for the Oil & Gas sector uses a pathway based on the Canadian government's plan to achieve the country's Nationally Determined Contribution (NDC) (Canada's 2030 ERP).¹ In our view, this pathway provides more precise data at a national level and better aligns with our loan book.² A Scope 1 and 2 target requires a Scope 1 and 2 pathway for the Oil & Gas industry. Our investigation of the IEA NZE scenario showed that the scenario did not have the appropriate level of granularity to provide us with a sufficiently defined Scope 1 and 2 pathway.

We chose the IEA NZE scenario to set the upper-bound of our Scope 3 physical emissions intensity reduction target range for the Oil & Gas sector, as the data incorporated by the scenario is well-suited for determining a pathway to reduce Scope 3 Oil & Gas emissions. Unlike Scopes 1 and 2, Scope 3 emissions occur globally rather than locally as they are internationally traded commodities, and a global scenario such as the IEA scenario was therefore suitable.

Power Generation

Business context

Significant investment in the electricity sector is required to transition the economy towards net-zero emissions. Extensive electrification and a shift away from coal and other high-emitting power generation sources to renewables and non-emitting sources will be crucial to decarbonize the economy. While fossil fuels continue to play an important role in power generation today, the sector is in a state of transition and many of our clients are releasing net-zero targets and interim emission reduction goals with a strategy to transition their businesses away from high-emitting fuel sources to low-emitting or renewable sources of electricity. In addition to investment, this transition will require strategic advice, and RBC is well placed and committed to assisting power generation companies in this journey given our extensive experience in the sector.

Sub-Sector Selection

We set targets for the Power Generation sub-sector based on a quantitative and qualitative assessment as described on page 10, taking into consideration the significance of the sub-sector's carbon emissions, total authorized exposure, current data reliability and the availability of decarbonization pathways. Clients exclusively involved in the transmission and distribution of power, and non-generation companies in the broader Power & Utilities sector were excluded from this initial interim target as they have a lower emissions footprint compared to Power Generation clients.

Emission Scope Selection

Our target relates to Scope 1 emissions of the Power Generation sub-sector, reflecting the fact that client emissions in the Power Generation sub-sector are almost entirely Scope 1 emissions,³ whereas Scope 2 and 3 emissions are not significant by comparison.

Scenario Selection

We selected the IEA NZE scenario (heat and electricity generation pathway) to set a Scope 1 target for the Power Generation sub-sector.

¹ The ERP is grounded in science and based on Canada's commitment under the Paris Agreement. It does not yet provide a pathway to net-zero beyond 2030 or a temperature alignment reflective of a global carbon budget. While the Canadian ERP shows a 40% reduction in Oil & Gas physical emissions intensity by 2030, RBC's target reflects both the inclusion of clients located outside of Canada and the fact that Canada's baseline is higher than RBC's baseline.

² While RBC's loan book is global, Canadian clients form the largest concentration of authorized exposure in the Oil & Gas sector, with the remaining clients spread between the U.S. and the rest of the world.

³ World Business Council for Sustainable Development (WBCSD), "Setting science-based targets: A guide for electric utilities," ([link](#)). June 2020, pp. 12-13. An illustrative graph on page 12 of the article shows the breakdown of activities for electric utilities companies, and how emissions linked to power generation specifically are almost entirely captured in Scope 1.

Business context

Decarbonizing the Automotive sector requires i) extensive adoption of electric vehicles and development of vehicle charging infrastructure; ii) increasing the efficiency of internal combustion engine vehicles until their phaseout is complete; iii) decarbonizing and expanding the electrical grid; and iv) expanding the battery metals and manufacturing supply chain.

Tremendous investment is required to retrofit auto manufacturing facilities, expand supply chains and develop technology to shift manufacturing towards electric vehicles. RBC is committed and well positioned to partner with automotive sector clients on this transition by providing them with strategic advice and much needed capital. Many of our automotive manufacturer clients have made substantial commitments to reduce their overall GHG emissions and set targets to significantly increase the sale of electric vehicles in the future, and we are committed to working with them as they transition towards net-zero by 2050.

Sub-Sector Selection

In the Automotive sector, our initial interim targets are focused on the automotive manufacturing and automotive captive finance¹ sub-sectors. Our selection of these sub-sectors is based on an assessment of criteria such as the existence of clear decarbonization pathways for clients in these sub-sectors and the availability of more reliable data to measure and set decarbonization targets. We also considered that automotive manufacturers are best able to exert influence and control over the development and production of emissions-free vehicles and, consequently, are able to impact the pace at which they are introduced.

Emission Scope Selection

Automotive manufacturing generates operational emissions largely through in-house manufacturing. The sum of Scope 3 emissions of automotive manufacturing is produced through upstream (“well-to-tank”) and end-use (“tank-to-wheel”) emissions. We have set a combined interim target for (i) operational (Scope 1 and 2) emissions and (ii) end-use Scope 3 tank-to-wheel (TTW) emissions. While our automotive manufacturer clients are drivers of change in the real economy, they have limited control over Scope 3 emissions outside of TTW (e.g., power grid supporting fuel supply). We also recognize that carbon-free electricity is needed to support emissions-free vehicles as part of our net-zero transition, and this is covered by our separate power generation targets.

Scenario Selection

We used the IEA NZE scenario² as the basis to set our automotive targets as we believe the global data and assumptions of the IEA NZE scenario are well-suited for establishing pathways for the global automotive manufacturing and automotive captive finance sub-sectors. The scenarios we are using for our interim targets were developed for a range of users, including policymakers, industry and academics. As such, we are not always able to directly translate the scenarios into pathways to guide our targets. In such cases, we need to adjust the scenario pathways to make them fit for purpose. In this case, we converted the scenario from a sales-based pathway to an emissions-intensity pathway.

Data Sources and Considerations

The availability, quality and reliability of data differs considerably by sector and sub-sector. We committed in our 2021 TCFD Report to engage with our Capital Markets clients in key high-emitting sectors, and we have sourced a portion of our client emission and production data directly from our clients. While many of our clients are disclosing their Scope 1 and Scope 2 emissions, Scope 3 emissions data present unique challenges as they are less often disclosed by our clients. Where this is the case, we have relied on emission factors as proxies³ (e.g., estimated data based on emission factors from third-party sources) to estimate our clients’ Scope 3 emissions. We have also sourced emissions data from S&P Trucost, S&P Global Mobility and publicly available disclosures and reports that we believe are reasonable to use for the purposes of setting, tracking and reporting on our progress towards meeting our interim targets. However, we have not independently verified or assessed the assumptions underlying the data we have obtained from our clients, other third parties and publicly available disclosures and reports, and we are unable to control the availability, quality or reliability of those data. In common with our peers, we face significant challenges in sourcing reliable data for setting interim targets. Inaccuracies in the data underpinning our targets could have a significant impact on our ability to meet them.

We will seek to identify data sources for improved measurement and calculation of our emissions exposures both for the purpose of reporting on our financed emissions and for interim target-setting.

¹ Automotive captive finance is included in our targets because, in their role as wholly owned subsidiaries of the auto manufacturers, our view is that they are integral to the auto manufacturer business.

² Sales-based pathways adjusted to an emissions intensity pathway.

³ Proxies are used as a substitute when reported emission and/or production data are not available. Examples of proxies used include estimated data based on emission factors from third-party sources.

Achieving our Net-Zero Ambition

Achieving net-zero globally will require one of the largest economic transformations in generations and for all societal actors to accelerate the pace of change. Corporate action, robust public policy, technological advancements and improvements in critical infrastructure will all be necessary to contribute to decarbonization efforts and provide confidence to consumers as they shift their behaviour.

In many countries, economic incentives may need to be stronger in order to drive the investment and behavioural changes that are needed. Bold and comprehensive public policy, such as carbon pricing and emissions regulations, could aid these efforts, along with investment to support key technologies such as renewable energy and CCUS and efforts to enable behaviour change by corporations and consumers. Without these policies, investments and actions – much of which are outside the direct control of RBC and our clients – many of the envisioned pathways to net-zero emissions will be more challenging or impossible to reach.

Success will depend on cross-sector collaboration with industry groups and governments in jurisdictions where we operate. We intend to continue working with governments, regulators, shareholders and other stakeholders to promote the role of the banking sector as a constructive player in the transition to a net-zero future. We will also continue to share ideas and insights that increase the understanding of complex transition challenges and contribute towards solutions.

We will continue engaging meaningfully with our clients on climate-related matters and to support their transition to net-zero. We intend to align our sector-level reduction strategies with our clients' plans, and expand our products, services and solutions – including our commitment to provide **\$500 billion in sustainable financing by 2025**¹ – to help our clients achieve their climate goals and overcome barriers to adoption.

We will continue to take a bottom-up, collaborative approach with our client-facing teams in setting emissions reduction targets for our lending activities. Over time, we plan to expand our targets to cover additional carbon-intensive sectors and sub-sectors and aim to improve the scope applicability as data availability and climate science evolve. We recognize that this is a complex journey that all stakeholders must undertake together in the context of rapidly evolving data, methodologies and economic realities. As we undertake this work, we will be continuously learning from our clients as they work to decarbonize, and from governments, academia, supranational, national and industry bodies as they collaborate to improve data and methodologies for all high-emitting sectors.

In alignment with our intention to achieve net-zero in our lending by 2050 and our **NZBA commitments**,² we intend to set interim targets for additional carbon-intensive sectors in our lending portfolio in line with our quantitative and qualitative framework within 36 months of joining the alliance.³ In our future disclosures, we intend to publish a high-level transition plan detailing key milestones and the categories of actions that we plan to take in order to achieve our reduction targets. We will review and revise our targets as needed and at least every five years as new data become available and as assumptions, methodologies, requirements and standards evolve to align with market practices and climate science. Additional information on our climate strategy and actions to achieve net-zero can be found on our [website](#).

¹ Includes both social and green financing.

² UNEP-FI NZBA Frequently Asked Questions, October 2021, [unepfi.org/wordpress/wp-content/uploads/2021/10/NZBA-Frequently-Asked-Questions.pdf](https://www.unepfi.org/wordpress/wp-content/uploads/2021/10/NZBA-Frequently-Asked-Questions.pdf).

³ This goal refers to RBC's lending activities only and is not inclusive of assets under management by RBC Wealth Management (RBC WM) and RBC Global Asset Management (RBC GAM).



Providing feedback

This Report is published for all stakeholders of Royal Bank of Canada and its subsidiaries.

We welcome your questions and feedback on our approach, or suggestions for improvement, at corporatecitizenship@rbc.com.

This Report may reference third-party trademarks or brand names, or contain hyperlinks to websites that are not owned or controlled by RBC. Each such reference or hyperlink is provided solely for informational purposes, and the content of any linked third-party websites is not in any way included or incorporated by reference into this Report. Any reference of third-party trademarks or brand names does not imply an endorsement by RBC or its affiliates, and RBC takes no responsibility for any linked third-party websites or their content, or for any loss or damage that may arise from the recipient's use of any third parties referenced in this Report. If you decide to access any third-party websites for which links are provided in this Report, you do so at your own risk and subject to the terms and conditions of such websites.

® / ™ Trademark(s) of Royal Bank of Canada. RBC, RBC Wealth Management and RBC Global Asset Management are registered trademarks of Royal Bank of Canada. © Royal Bank of Canada 2022. VPS110311

