Report 2

Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada

Greening Government Strategy

Independent Auditor's Report | 2022

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Introduction

Background

Greening Government Strategy

2.1 The Treasury Board of Canada Secretariat launched the Greening Government Strategy in 2017. It is responsible for leading the strategy to help the federal government reduce its environmental impact and transition to low-carbon, climate-resilient operations.

2.2 A key commitment in the 2017 strategy was to reduce the greenhouse gases emitted by government operations to 80% below the baseline for fiscal year 2005–06 by 2050. In 2020, the secretariat revised the strategy to increase the target to 90% without the use of carbon removals. The ultimate goal is to achieve **net-zero emissions**[1] by 2050.

2.3 This means reducing emissions to as close to zero as possible and balancing out any remaining emissions with an equivalent amount of carbon removal. To reach this goal, the federal government has set out specific targets for its operations and assets in line with the 2016 Paris Agreement, and it will need to make deep reductions in its greenhouse gas emissions.

2.4 The more quickly these occur, the greater the overall beneficial environmental impact will be. The timing of these emission reductions will depend, in part, on how quickly government operations adopt available and future technologies and approaches.

2.5 The Government of Canada has indicated that it is committed to leading by example in both the domestic and global transition to a low-carbon economy. Several other countries—including the United States, United Kingdom, and France—also

[1] **Net-zero emissions**—According to the Government of Canada, a state in which the economy either emits no greenhouse gas emissions or fully offsets its emissions, such as by planting trees or using carbon capture technologies.

have strategies or plans to reduce the emissions generated by their national governments' operations.

2.6 In 2019, Canada as a country generated a total of 730 **megatonnes**[2] of greenhouse gas emissions. The federal government reported that its own operations (excluding those of Crown corporations) were responsible for 2.1 megatonnes of this total. This quantity is in line with the greenhouse gas emissions produced by some of Canada's largest companies.

2.7 The federal government groups its greenhouse gas emissions into 2 broad categories:

- Departmental emissions include all emissions from departments that own real property and/or fleets of 50 or more vehicles, excluding those used in national safety and security activities.
- National safety and security fleet emissions include those from the vessels and vehicles used in national safety and security activities, such as warships, Coast Guard vessels, aircraft, and tanks. The departments that operate such vehicles are National Defence, the Canadian Coast Guard, and the Royal Canadian Mounted Police.

2.8 The federal government also refers to its sources of greenhouse gas emissions in terms of scopes, in keeping with the terminology used in international standards (Exhibit 2.1). This report also uses this terminology.

[2] A megatonne is equivalent to 1,000 kilotonnes. The remainder of this report discusses emissions in kilotonnes.

Exhibit 2.1—Greenhouse gas emission categories and targets for federal operations and assets

Scope	Federal operations or assets	Emission reduction targets
Scope 1	Direct emissions from assets owned or controlled by the government, such as buildings and vehicles	For emissions from 27 departments (unrelated to national safety and security): • 40% reduction below 2005 levels by 2025 • aspire to achieve subsequent 10% reductions every 5 years to reach at least 90% by 2050 without the use of carbon removals • reduction to net zero by 2050 • departments will use carbon removal as needed to address any remaining emissions to reach net zero by 2050 For emissions connected to national safety and security: • reduction to net zero by 2050 • departments will use carbon removal as needed to address any remaining emissions to reach net zero by 2050
Scope 2	Indirect emissions from the generation of purchased electricity, steam, heating, and cooling required by government operations	
Scope 3	All other indirect emissions that result from government operations, such as flights taken by employees for work, waste generated in operations, and construction of new buildings	Net-zero emissions by 2050

Roles and responsibilities

2.9 Treasury Board of Canada Secretariat. The secretariat is responsible for leading and reporting on the Government of Canada's efforts toward low-carbon, green, and climate-resilient government operations. It is mandated to lead and coordinate, integrate knowledge, and track and disclose performance information.

2.10 National Defence and Transport Canada. These 2 departments, like all departments, must develop plans to reach net-zero emissions by 2050 and implement their commitments in their real property, vehicle fleets, procurement, and overall operations. They must also report annually on their results.

Focus of the audit

2.11 This audit focused on whether the Treasury Board of Canada Secretariat led the Greening Government Strategy in a manner that supported the federal government's progress toward reducing its greenhouse gas emissions. It also focused on whether National Defence and Transport Canada reported results that were supported by the implementation of internal controls and took appropriate measures to reduce greenhouse gas emissions in their areas of responsibility.

2.12 We selected these 2 departments because National Defence represents almost half of all federal government departmental scope 1 and 2 emissions and Transport Canada provides an example of a department with significant fleet emissions.

2.13 This audit is important because climate change is accelerating and the greenhouse gas emissions generated by federal government operations are contributing to it. In response, the government has stated a desire to be a world leader in this work and has set out a strategy aimed at reducing these emissions. There is a need to ensure that the strategy is effective and that the departments are making progress.

2.14 More details about the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this report.

Findings, Recommendations, and Responses

Overall message

2.15 Overall, we found that by developing and leading the Greening Government Strategy, the Treasury Board of Canada Secretariat took initial steps to support the federal government's efforts to reduce its greenhouse gas emissions. However, 5 years into the strategy, the secretariat's efforts to reduce emissions were not as complete as they could have been—especially considering Canada's publicly stated commitment to reach net-zero emissions by 2050 and be a national and global leader in transitioning to carbon-neutral government operations.

2.16 This is important because the federal government is a sizable enterprise in Canada, and the greenhouse gases that its operations generate are contributing to Canada's emissions.

There is a need to ensure that the Greening Government Strategy will deliver the desired results and that the government departments that rely on it have clear instructions and sound plans and methods, and are making progress.

2.17 We found that the Treasury Board of Canada Secretariat provided departments with useful guidance and tools to help them develop emission reduction plans and report on their results. It also developed a system for monitoring and reporting departmental scope 1 and 2 emissions. The 2 departments we audited, National Defence and Transport Canada, reported their emissions to the secretariat, developed emission reduction plans, took steps to implement them, and succeeded in reducing their emissions. However, in our view, the actions described in National Defence's plan were not detailed enough to make it clear how the department would meet the 2050 target. And Transport Canada did not provide sufficient context on its reported emissions or results when it reported this information in formats other than reports intended for the secretariat. The departments should continue to develop initiatives that will reduce their emissions and develop a risk management approach to increase their chances of succeeding.

2.18 We also found that the Treasury Board of Canada Secretariat had a limited approach to identify, monitor, or mitigate potential threats to the government's ability to achieve its targets and make the most of opportunities that arise. In addition, some of the information the secretariat provided about the government's progress was hard to find, unclear, or incomplete. As a result, government decision makers, parliamentarians, and Canadians do not fully know, at this time, whether the government will meet its 2050 target. In our view, the secretariat needs to develop a better approach to identify and mitigate risks in its plans, report more clearly on all sources of greenhouse gas emissions, and track and report on the estimated costs and savings involved in achieving the net-zero 2050 target.

Leading Canada's Greening Government Strategy

The Treasury Board of Canada Secretariat did not report on all sources of federal greenhouse gas emissions

What we found

2.19 We found that the Treasury Board of Canada Secretariat did not report some sources of federal greenhouse gas emissions. We also found that it did not include context that would help

government decision makers, parliamentarians, and Canadians understand the progress that has been made to date and the challenges that lie ahead.

2.20 In 2021, the secretariat reported a total reduction of 731 kilotonnes (40.6%) in scope 1 and 2 emissions across all 27 departments compared to the fiscal year 2005–06 baseline. It also reported the results of emissions related to national safety and security activities for 3 departments. However, it did not report the majority of scope 3 (indirect) emissions for any departments or any emission results for Crown corporations.

2.21 The analysis supporting this finding discusses the following topic:

- Some emission sources and useful context not included in reporting

Why this finding matters

2.22 This finding matters because without comprehensive and clear reporting, the government cannot know if it needs to modify its plans to achieve net-zero emissions by 2050. It also cannot be certain that it is achieving its goal of national and international leadership on emission reductions.

Recommendation

2.23 Our recommendation in this area of examination appears at paragraph 2.35.

Analysis to support this finding

Some emission sources and useful context not included in reporting

2.24 We found that the Treasury Board of Canada Secretariat developed a system for monitoring and reporting departmental scope 1 and 2 emissions. We also found that the secretariat reported on some sources of federal emissions, but did not include context that would have helped readers understand the progress that has been made to date and the challenges that lie ahead.

Take urgent action to combat climate change and its impacts.

Source: United Nations

2.25 We found that the secretariat measured greenhouse gas emissions from some of the key sources of the Government of Canada's operations, supporting the ability to measure the progress of the Government of Canada in reducing its emissions. This work aligns with United Nations' Sustainable Development Goal 13 (climate action), in particular indicator 13.2.2. That indicator focuses on integrating climate change measures into national policies, strategies, and planning—in this case, the Greening Government Strategy—and measuring total annual greenhouse gas emissions.

2.26 Based on information from the departments, the secretariat reported a reduction of 731 kilotonnes (40.6%) in scope 1 and 2 emissions for 27 departments in fiscal year 2020–21 compared to the fiscal year 2005–06 baseline, meeting the 2025 reduction target of 40%. Although the secretariat also reported on emissions from national safety and security activities, it did not include them in this total.

2.27 As shown in exhibits 2.2 and 2.3, we found that the secretariat did not report

- Crown corporation emissions
- the majority of scope 3 emissions for 27 departments that own real property or maintain large vehicle fleets
- the majority of scope 3 emissions related to departments that conduct national safety and security activities

2.28 We found that the overall reported results from Crown corporations were neither included on the secretariat's website nor aggregated for the total federal government's operations emissions. The Greening Government Strategy does not require the Treasury Board Secretariat of Canada to report emissions from Crown corporations. It encourages Crown corporations to report their own emissions, but it does not tell them how to do so.

Exhibit 2.2—The Treasury Board of Canada Secretariat reported scope 1 and 2 emissions from government departments, but not from Crown corporations

Scope 1 and 2 emission sources	Emissions (kilotonnes of carbon dioxide equivalent*)	Change from fiscal year 2005–06 baseline (%)	Reported by the secretariat	Notes
27 departments that own real property and/or maintain fleets of 50 vehicles or more (not including national safety and security emissions)	1,071	–40.6	Yes	Since fiscal year 2019–20, all 27 federal departments have reported annually on scope 1 and 2 emissions from buildings and fleets. Some departments estimated their annual emissions for previous years.
Federal organizations focused on national safety and security: National Defence, Royal Canadian Mounted Police, and Canadian Coast Guard	844	–0.6	Yes	These federal organizations began reporting in fiscal year 2017–18.
3 Crown corporations: VIA Rail Canada, Canada Post, and Trans Mountain Corporation (a subsidiary of Canada Development Investment Corporation)	397	Unknown	No	By 2019, some Crown corporations had begun to estimate their emissions in their annual reports. These 3 reported high levels of scope 1 and 2 emissions in 2019. Some Crown corporations reported reductions in their emissions between 2019 and 2020.
Total	2,312			Includes emissions from only the 3 Crown corporations mentioned in this table, all of which have significant emissions.

* Greenhouse gases also include methane and nitrous oxide. A kilotonne of carbon dioxide equivalent is the amount of any greenhouse gas that has the same climate-altering potential as a kilotonne of carbon dioxide over a specified period.

Exhibit 2.3—The Treasury Board of Canada Secretariat did not report the majority of scope 3 emissions

Scope 3 emissions	Emissions (kilotonnes of carbon dioxide equivalent*)	Change from fiscal year 2005–06 baseline (%)	Reported by the secretariat	Notes
27 departments that own real property and/or maintain fleets of 50 vehicles or more (excluding national safety and security)	4,671	N/A	Not for the majority of emissions (except for air travel emissions)	In fiscal years 2018–19 and 2019–20, a third party estimated scope 3 emissions for these departments. Reporting methodologies have not yet been finalized except for those related to aviation. In fiscal year 2020–21, Treasury Board of Canada Secretariat reported 23.3 kilotonnes of carbon dioxide equivalent emissions related to air travel (scope 3) across the public service. These emissions could not be combined with scope 1 and 2 emissions because doing so could lead to double counting. For example, reducing flights for government operations would reduce emissions connected to government activities, but the airlines also report these emissions.
Federal organizations focused on national safety and security: National Defence, Royal Canadian Mounted Police, and Canadian Coast Guard	Unknown	Unknown	No	These emissions were not included in the reporting on emission targets.
2 Crown corporations: Canada Post and Trans Mountain Corporation, a subsidiary of Canada Development Investment Corporation (construction-related emissions only)	1,286	Unknown	No	Canada Post estimated scope 3 emissions in its 2020 annual report. Trans Mountain Corporation estimated construction emissions (partial scope 3) in its 2020 annual report. Other Crown corporations may report scope 3 emissions in the future.

Scope 3 emissions	Emissions (kilotonnes of carbon dioxide equivalent*)	Change from fiscal year 2005–06 baseline (%)	Reported by the secretariat	Notes
Total	5,957			Includes only emissions from the 2 Crown corporations mentioned in this table, both of which have significant emissions.

* Greenhouse gases also include methane and nitrous oxide. A kilotonne of carbon dioxide equivalent is the amount of any greenhouse gas that has the same climate-altering potential as a kilotonne of carbon dioxide over a specified period.

2.29 We found that the secretariat instructed the departments on how to report their greenhouse gas emissions. Specialized software developed by the federal government, called RETScreen, also helped departments plan, implement, monitor, and report on their progress in reducing carbon emissions.

2.30 We found that there had been no independent review of the results of greening government operations, or of the baseline for departmental greenhouse gas emissions. The Greening Government Strategy, the Treasury Board of Canada Secretariat Management Accountability Framework and Policy on Results, and international standards all require reports of greenhouse gas emissions to be accurate and complete. The secretariat's guidance indicates that departments can retain an independent reviewer to enhance the verification process. International standards, such as the International Organization for Standardization's quality standards, require auditing and evaluation to assess the methodologies used and to confirm the standards used and data generated.

2.31 Starting in 2019, the secretariat required departments to have their assistant deputy ministers confirm and sign off on the integrity of their greenhouse gas emissions data. However, we found only 7 sign-offs among the 27 reporting departments.

2.32 We found that the secretariat developed a system for monitoring and reporting departmental scope 1 and 2 emissions. It also published this information on its website in different ways—for example, by department and facility. However, we found that it did not report the overall results of the Greening Government Strategy in a clear manner that would enable decision makers, parliamentarians, and Canadians to understand them easily. It published important information in different locations and in some cases, did not make it available.

2.33 In our view, the secretariat also left important context out of its reporting. For example, it did not include

- an overview of all of the government's key sources of emissions and the total results
- all of the key activities undertaken by the secretariat and other federal organizations, or circumstances that resulted in significant reductions or increases in emissions
- the opportunities, risks, and related mitigation measures likely to affect the government's ability to implement the strategy over the remaining 28 years
- information about how the strategy supported the United Nations 2030 Agenda

2.34 We found that the Treasury Board of Canada Secretariat's leadership of the Greening Government Strategy helped the Government of Canada to reduce its greenhouse emissions in line with target 13.2 of United Nations' Sustainable Development Goal 13 (climate action): integrating climate change measures into national policies, strategies, and planning.

2.35 **Recommendation.** The Treasury Board of Canada Secretariat should collect and report on all Government of Canada sources of greenhouse gas emissions clearly and comprehensively in an annual summary report.

The secretariat's response. *Agreed*.

See the **List of Recommendations** at the end of this report for detailed responses.

The secretariat developed the Greening Government Strategy and provided guidance and tools to departments

What we found

2.36 We found that the Treasury Board of Canada Secretariat developed the Greening Government Strategy and included valuable elements in it—such as a long-term vision and targets for emission reductions—but that the strategy lacked some details about the government's plans. The secretariat also provided departments with guidance and tools on how to meet their targets.

2.37 The analysis supporting this finding discusses the following topics:

- Sound strategy developed, but more detail needed
- Guidance and tools provided

Why this finding matters

2.38 This finding matters because guidance and tools help departments to develop and implement their individual greenhouse gas emission reduction plans and report on emissions.

Recommendation

2.39 Our recommendation in this area of examination appears at paragraph 43.

Analysis to support this finding

Sound strategy developed, but more detail needed

2.40 We found that the secretariat's approach to reducing greenhouse gas emissions through the Greening Government Strategy included

- a long-term vision
- sustainable development and adaptation considerations
- long-term targets for emission reductions
- milestones to achieve over time
- implementation and monitoring considerations

2.41 However, we found that the Greening Government Strategy did not contain sufficient detail about some important commitments. Additional information would give parliamentarians and Canadians a clearer picture of what is to be accomplished, including the government's plans to

- transition to a low-carbon economy through green procurement

- adopt clean technologies and green products and services
- create and leverage partnerships with internal and external stakeholders
- ensure that current government policies align with the strategy's objectives and that senior management is accountable for the agreed priorities
- oversee and measure performance to ensure accountability for the government's environmental performance

Global Target 13.2

Integrate climate change measures into national policies, strategies and planning.

Source: United Nations

2.42 With respect to target 13.2 of United Nations' Sustainable Development Goal 13 (climate action), the Greening Government Strategy shows that the Government of Canada has integrated climate change measures into its national policies, strategies, and planning.

2.43 **Recommendation**. The Treasury Board of Canada Secretariat should include additional details about strategic commitments in its next revision of the Greening Government Strategy.

The secretariat's response. *Agreed.*

See the **List of Recommendations** at the end of this report for detailed responses.

Guidance and tools provided

2.44 We found that the secretariat provided guidance and tools to the departments on how to meet their targets. The secretariat's annual communication to departments included a link to the Centre for Greening Government, which contains all of the guidance and tools that departments need to compile and report on their greenhouse gas emissions. The secretariat also advised departments that additional guidance on greening was available, such as on low-carbon real property, climate adaptation, and green procurement.

2.45 The 2 departments we audited, National Defence and Transport Canada, told us that this guidance on reporting greenhouse gas emissions was helpful, and that they used the provided tools to report on their scope 1 and 2 emissions.

Important elements needed to manage the implementation of the Greening Government Strategy were incomplete

What we found

2.46 We found that the Treasury Board of Canada Secretariat did not implement some important management elements that, in our view, are needed to manage the Greening Government Strategy effectively and achieve the 2050 net-zero target. The secretariat had a limited risk management approach. Its emission reduction plans for real property were incomplete, and most were not independently reviewed. Costs and savings were neither monitored nor reported.

2.47 The analysis supporting this finding discusses the following topics:

- Limited risk management approach
- Emission reduction plans for real property incomplete, with most not independently reviewed
- Costs and savings not monitored or reported
- Gender-based analysis plus conducted

Why this finding matters

2.48 This finding matters because a systematic risk management process can indicate to management if commitments are unlikely to be achieved. It helps management to monitor results, act quickly to reduce or eliminate obstacles, and take advantage of opportunities as they arise. A sound risk management process can also help with resource allocation and priority setting.

2.49 Further, to meet the 2050 net-zero target, the federal government needs plans that identify key steps and supporting technologies. In addition, if costs and savings are not compiled and explained, then it is impossible to correct course, evaluate progress, or track cost variations over the strategy's lengthy time frame.

Recommendations

2.50 Our recommendations in this area of examination appear at paragraphs 2.53, 2.56, and 2.63.

Analysis to support this finding

Limited risk management approach

2.51 When we started this audit, we found that the secretariat had a limited approach to identifying, monitoring, and mitigating potential threats to the government's ability to achieve its 2050 net-zero target. In other words, we did not find evidence that its decisions were supported by risk analyses.

2.52 During our audit, the secretariat began to document its approach to assessing risk. It created a risk register in which it documented risks and proposed mitigation measures. However, we found that the register left out risks that some departments—including National Defence, the department with the most greenhouse gas emissions—had already identified (see paragraph 2.85). We also found that the secretariat did not identify how it would consult departments on their risks in order to come up with a more comprehensive, accurate list of these.

2.53 **Recommendation**. The Treasury Board of Canada Secretariat should develop a comprehensive risk-management approach that outlines how it will regularly identify, monitor, and mitigate significant risks.

The secretariat's response. *Agreed.*

See the **List of Recommendations** at the end of this report for detailed responses.

Emission reduction plans for real property incomplete, with most not independently reviewed

2.54 We found that only 8 of 27 departments had created emission reduction plans for government-owned real property. However, these plans accounted for 81% of total emissions from departments. The 2020 Greening Government Strategy did not specify a date by which all departments had to complete such plans. The statuses of the greenhouse gas emissions plans for

the other 5 sources of emissions previously identified are noted in Exhibit 2.4.

2.55 The secretariat recommended that greenhouse gas emission reduction plans be independently reviewed. In our view, this is a good practice because it makes use of independent expertise on whether the plans are sufficient to meet their targets. Among the 8 developed plans, we found that 2 had been independently reviewed: 1 by the secretariat and 1 by a government department with expertise in managing real property.

Exhibit 2.4—Operational greenhouse gas emission reduction plans for key sources of government emissions were not complete

Sources of greenhouse gas emissions		Statuses of reduction plans
Scopes 1 and 2	27 departments (excluding national safety and security activities)	8 out of 27 departments prepared plans related to real property. There was no deadline for the remaining 19 departments to complete their plans.
	National safety and security activities	Expected by 2023.
	Crown corporations	Status unknown to the secretariat.*
Scope 3	27 departments (excluding national safety and security activities)	No departments prepared greenhouse gas emission reduction plans for scope 3 emissions. The secretariat did not assign the departments a deadline to complete the plans.
	National safety and security activities	
	Crown corporations	Status unknown to the secretariat.*

* The strategy encourages Crown corporations to publicly disclose the status of their greenhouse gas emissions and reduction plans.

2.56 **Recommendation**. The Treasury Board of Canada Secretariat should

- set a date by which all departments must complete their greenhouse gas emission reduction and net-zero plans
- require departments to include the milestones identified in the Greening Government Strategy in their plans
- facilitate independent reviews of departments' plans to determine whether they are sufficient to meet the 2050 net-zero target

The secretariat's response. *Agreed.*

See the **List of Recommendations** at the end of this report for detailed responses.

Costs and savings not monitored or reported

2.57 We found that the Greening Government Strategy did not contain a requirement for the Treasury Board of Canada Secretariat to monitor and report on costs and savings. Officials at the secretariat also told us that the secretariat was not responsible. We did not find a monitoring and reporting system for expenditures, savings, and cost effectiveness.

2.58 In 2020, the Treasury Board of Canada Secretariat commissioned a carbon-neutral feasibility assessment study of Crown-owned facilities. A third party prepared the study, basing it on a forecast model. The assessment integrated the results from the departments' completed greenhouse gas emission reduction plans (and included estimates for departments that did not have completed plans), which provide a long-term view of carbon reductions and the investments that would be needed to achieve them.

2.59 The key estimated financial outcomes from the study show that reaching the 91% reduction by 2050 for facilities will cost approximately $9.0 billion and save $6.2 billion, for a net cost of $2.8 billion. Given the long lead time to 2050—and the unknowns related to the costs of carbon removal and new technologies—it is difficult to estimate the strategy's future costs with precision. These will need to be monitored continually to achieve transparency and accountability and to report on value for money.

2.60 During the course of the audit, National Defence and Transport Canada raised potential problems in this regard:

- Both departments indicated that, based on their current plans, they will have to pay for carbon removal beginning in 2050 to offset 10% or more of their scope 1 and 2 emissions, but that they did not know what the costs will be.
- National Defence did not know how much carbon removal it would have to pay for to offset its safety and security emissions starting in 2050.

2.61 During our audit, the secretariat prepared an overview of how it monitors and reports on the Greening Government Strategy's cost effectiveness. It indicated that tracking all expenditures and savings was not possible. Officials indicated that they would take the following steps to estimate the strategy's costs:

- Estimate the lifecycle costs and savings of major projects and initiatives, such as greenhouse gas reduction emission plans.
- Provide guidance to ensure cost effectiveness, such as analyzing the costs of real property projects over their entire lifecycles, carbon price estimates, and tools for analyzing fleet lifecycle costs.
- Track significant initiatives specific to greening government operations, such as renewable electricity purchases, low-carbon fuel purchases, the Greening Government Fund, and government spending, as needed.

2.62 In our view, long-term strategies—especially those that are highly valued by the government and may involve significant costs—warrant financial projections. We acknowledge that preparing accurate projections may be challenging, given the strategies' complexity and duration and the significant factor of delayed savings. However, without a compilation of expenditures and savings, the secretariat and departments cannot correct course (if required) or track progress or cost variances over the strategy's long time frame. Without this information, it is difficult for decision makers, parliamentarians and Canadians to understand the strategy's costs and savings.

2.63 **Recommendation**. The Treasury Board of Canada Secretariat should develop an approach to track costs and savings to provide decision makers, parliamentarians, and Canadians with sufficient information about the estimated costs and savings involved in achieving the 2050 net-zero target.

The secretariat's response. *Partially agreed.*

See the **List of Recommendations** at the end of this report for detailed responses.

Gender-based analysis plus conducted

2.64 We found that the secretariat conducted a **gender-based analysis plus**[3] of the Greening Government Strategy and concluded that efforts to reduce greenhouse gas emissions benefit women and vulnerable populations—groups that, worldwide, are disproportionately affected by climate change. The secretariat noted that the results of its detailed analysis were not significant enough to be reported.

2.65 The secretariat's guidance indicates that all departments must include gender-based analysis plus considerations when they request program funding. The secretariat's gender-based analysis plus for the Greening Government Strategy covered all federal departments.

Implementing Canada's Greening Government Strategy

National Defence and Transport Canada reduced and reported on their emissions, but may have challenges in meeting the 2050 net-zero target

What we found

2.66 We found that National Defence and Transport Canada aligned their greenhouse gas emission reduction plans with the 2017 Greening Government Strategy, reduced their emissions, and reported their results annually. However, National Defence's analyses did not show how the department's short-term actions were contributing to the 2050 net-zero target. Transport Canada did not provide sufficient context on its reported emissions or results when it reported this information in formats other than reports intended for the secretariat.

2.67 The analysis supporting this finding discusses the following topics:

- Emission reductions reported
- Mixed progress on plans to reduce emissions

[3] **Gender-based analysis plus**—An analytical process that provides a rigorous method for the assessment of systemic inequalities, as well as a means to assess how diverse groups of women, men, and gender-diverse people may experience policies, programs, and initiatives. The "plus" acknowledges that gender-based analysis goes beyond biological (sex) and socio-cultural (gender) differences and considers many other identity factors, such as race, ethnicity, religion, age, and mental or physical ability.

Source: Adapted from Women and Gender Equality Canada

Why this finding matters

2.68 This finding matters because if federal departments do not carry out their plans with enough strategy and urgency, the Government of Canada will not succeed in reducing its greenhouse gas emissions to net zero by 2050. Departments need to monitor and report their emission reduction efforts to understand whether they are making enough progress. If not, they need to take appropriate steps and report on the circumstances.

Context

2.69 As of fiscal year 2020–21, National Defence and Transport Canada were responsible for 46% and 5% of federal departments' total scope 1 and 2 greenhouse gas emissions, respectively, excluding emissions related to national safety and security activities.

Recommendations

2.70 We made no recommendations in this area of examination.

Analysis to support this finding

Emission reductions reported

2.71 We found that National Defence reduced its scope 1 and 2 emissions (excluding those related to national safety and security activities) by 38% between fiscal years 2005–06 and 2020–21: The department reported a 20% emissions reduction in fiscal year 2016–17 from the fiscal year 2005–06 baseline, and an additional 18% reduction between fiscal years 2016–17 and 2020–21. The Greening Government Strategy was introduced in 2017. Approximately 10% of the reported reductions can be attributed to the purchase of clean energy in Alberta.

2.72 National Defence has reported its national safety and security fleet emissions since fiscal year 2017–18. In fiscal year 2020–21, the department reported a 7% reduction in emissions from the 2005–06 baseline because many training exercises and non-essential services were suspended due to COVID-19.

2.73 According to National Defence:

- Emission reductions from fiscal years 2019–20 to 2020–21 were partly the result of a drop in operational activity during the COVID-19 pandemic. The department assumes that emissions may increase again when normal operations resume.
- The department is using a variety of approaches to achieve emission reductions, including renewable energy certificates and energy performance contracts (Exhibit 2.5).

Exhibit 2.5—National Defence is using multiple approaches to reduce its emissions

Renewable energy certificates
National Defence attributed approximately 10% of the total greenhouse gas reductions achieved to its decision in 2017 to purchase renewable energy certificates in Alberta that equalled almost 90% of its electricity use in the province. Renewable energy certificates give the owner the right to claim emission reductions associated with the generation of electricity from renewable sources, such as wind, sun, and water. Some biomass certificates give the owner the right to claim emission reductions. National Defence realized its largest annual impact in fiscal year 2017–18, when the certificates reduced its emissions by about 83,000 tonnes of carbon dioxide equivalent.
Energy performance contracts
Energy performance contracts offer departments one way to retrofit buildings to improve energy efficiency and reduce emissions. A third party assesses a building to identify potential retrofits, such as lighting and equipment upgrades or smart building controls. The third party carries out the approved retrofits, monitors the results, and guarantees the energy savings. These upgrades are paid for by the department over a specified time period using the savings from the reduced energy consumption. Although some of the value of the energy efficiency retrofits is lost to financing fees, energy performance contracts allow departments to benefit from private-sector innovation with minor upfront costs and guaranteed results. National Defence put into place 11 energy performance contracts that were expected to reduce its greenhouse gas emissions by about 50 kilotonnes of carbon dioxide equivalent. For example, an energy performance contract at 2nd Canadian Division Support Base Valcartier was expected to reduce annual emissions by 5.8 kilotonnes and annual costs by more than $1.6 million. By the end of fiscal year 2020–21, 90% of the expected emission reductions and 97% of the expected cost reductions had been achieved.

2.74 We found that National Defence reported its emissions annually, as required by the Centre for Greening Government. It also made investments to improve its ability to report at the building level. But we found that it did not have a formal process for verifying its reported emissions data, including review and sign-off by senior management. In our view, this is an important quality control step. Also, the department did not arrange for an

independent evaluation of the quality of its data or the effectiveness of its data collection methods.

2.75 We found that Transport Canada reduced its scope 1 and 2 emissions by 23% between fiscal years 2005–06 and 2020–21: It reported a 13% reduction by fiscal year 2016–17 from the fiscal year 2005–06 baseline, and an additional 10% reduction between fiscal years 2016–17 and 2020–21. The Greening Government Strategy was introduced in 2017.

2.76 The department expects future emission reductions to come from technology improvements and low-carbon fuels for the 4 ferries it operates, which contribute the majority of its emissions (68% in fiscal year 2020–21). It also expects the use of other technologies, such as drones, to reduce emissions related to its programs and operations (Exhibit 2.6).

2.77 We found that Transport Canada reported its emissions annually to the secretariat. It also designed and put in place internal controls to ensure the data it collected and reported to the secretariat was accurate, complete, and approved by senior management. This included having the department's environmental advisor review the data and investigate any notable changes or outliers in the data. However, the department did not arrange an independent review to verify the quality of the data or the effectiveness of its data collection methods.

Exhibit 2.6—Transport Canada is using different approaches to reduce its emissions

Replacing ferries
Transport Canada has 4 ferries serving the Atlantic region. These vessels contribute the majority of the department's emissions (68% in fiscal year 2020–21). The department has started the process to purchase 2 new ferries. These vessels are expected to replace 2 existing ferries in 2026 and 2027. The new vessels will use diesel-electric hybrid propulsion technologies and energy-storage systems. Compared with the existing fleet, they are expected to generate significantly fewer greenhouse gas emissions and air pollutants and produce less underwater noise. They are also being designed to allow for future enhancements to their energy storage systems as battery technology advances. Transport Canada expects to have a better sense of the potential for greenhouse gas emission reductions as the design process moves forward. According to the department, the other 2 ferries are due for replacement prior to 2050. According to the department, because of the length and complexity of the routes served, it is not possible at this time to use fully electric ferries. The routes that have successfully switched to fully electric engines are shorter and do not operate on the high seas.

Using drones for surveillance

In 2020, Transport Canada announced plans to purchase a remotely piloted aircraft system (drone) to deliver its National Aerial Surveillance Program, which will help keep Canadian waters safe and clean. The drone, expected to be delivered in December 2022, will help the department determine the viability of using drones to monitor the Arctic Ocean. According to Transport Canada, drones are more fuel efficient than traditional aircraft.

Mixed progress on plans to reduce emissions

2.78 We found that National Defence's carbon plan aligned with the emission reduction targets outlined in the 2017 strategy, but that the actions in the plan were not detailed enough to indicate how the department would achieve the 2050 target. The department's plan described short- and long-term strategies to reduce emissions and reported progress on short-term steps, but contained limited analysis of how the actions in the short term contributed to achieving the longer-term objectives.

2.79 We found that Transport Canada's greenhouse gas emission reduction plan aligned with the targets in the 2017 strategy, and that the department outlined its activities to reduce emissions. It identified milestones and short-term steps to reduce emissions, including estimated emission reductions for activities. Its approach was to update the plan as needed to capitalize on new technologies as they become available.

2.80 We found that Transport Canada did not provide sufficient context on its reported emissions or results when it reported this information in formats other than reports intended for the secretariat. For example, the department reported significant reductions in its vehicle emissions in fiscal year 2020–21, but did not indicate what proportion of these were attributable to emission reductions from zero-emission vehicles.

National Defence and Transport Canada did not have an approach to manage their emission reduction risks

What we found

2.81 We found that National Defence and Transport Canada did not develop an approach to identify, monitor, or mitigate potential threats to their abilities to implement the Greening Government Strategy. However, both departments did conduct gender-based analyses plus of their responses to the strategy.

2.82 The analysis supporting this finding discusses the following topics:

- Limited risk management
- Gender-based analysis plus conducted

Why this finding matters

2.83 This finding matters because a risk management approach would help the departments to identify and address any significant risks that could affect their ability to achieve the 2050 net-zero target.

Recommendation

2.84 Our recommendation in this area of examination appears at paragraph 2.88.

Analysis to support this finding

Limited risk management

2.85 We found that National Defence identified some of the significant risks that could prevent it from achieving its emission reduction targets. However, it did not have an approach to mitigate some of these risks. For example:

- The department estimated a reduction in its scope 1 and 2 emissions of 63% by 2050 with current funding (83% with additional funding). Therefore, there is a risk of not meeting the 2050 net-zero target.
- The department may need to purchase carbon removals starting in 2050 to achieve net zero, but it did not know what quantities will be required or what the cost will be.
- It did not know what advanced technologies may become available to reduce emissions.
- The department was relying on multiple levels of government to build the infrastructure, such as power lines, required to access renewable energy.

2.86 We found that Transport Canada identified risks that could impede the success of its emission reduction plan. The current plan states that the department expects to reduce its emissions by an estimated 84% by 2050. Its plan identified the risks related to its 4 ferries, which run on diesel fuel and account for most of the department's emissions. It also identified the possibility that new technologies to reduce these emissions may not develop quickly enough.

2.87 However, Transport Canada did not develop a risk management approach that specified the roles, responsibilities, and accountabilities to manage risks that could prevent it from achieving its emission reduction targets. We also found that it did not account for significant risks when it created its emission reduction plan and prioritized the related activities.

2.88 **Recommendation**. National Defence and Transport Canada should

- continually identify new activities that will contribute significantly to emission reductions and prioritize them based on risk
- develop a risk management approach that defines significant risks and corresponding mitigation measures

Response of each entity. *Agreed.*

See the **List of Recommendations** at the end of this report for detailed responses.

Gender-based analysis plus conducted

2.89 We found that when National Defence hired 27 energy managers and energy efficiency engineers to help reduce its emissions, it conducted gender-based analysis plus to ensure gender diversity among these new staff members. The department told us that it applies gender-based analysis plus when required by program funding requests or procedures, such as those related to building design, equipment purchase, and hiring practices. The department indicated it did not receive direction from the Treasury Board Secretariat of Canada on gender-based analysis plus with respect to the Greening Government Strategy.

2.90 We found that Transport Canada applied gender-based analysis plus to support 2 key funding requests associated with

significant emissions related to ferry services for the Atlantic region: the acquisition of the *MV Villa de Teror* as an interim replacement ferry, and the extension of the Ferry Services Contribution Program to 2027 to continue to support local communities.

2.91 The department indicated that it applies gender-based analysis plus to all budget proposals, memoranda to cabinet, and Treasury Board submissions, and to specific activities when required by policy. The department views the Greening Government Strategy as a set of requirements embedded in all departmental activities. It indicated that it did not receive direction from the Treasury Board Secretariat of Canada on gender-based analysis plus with respect to the strategy.

Conclusion

2.92 We concluded that the Treasury Board of Canada Secretariat led the Greening Government Strategy in a manner that supported the progress in reducing the greenhouse gas emissions of the federal government. However, the secretariat did not report some sources of federal greenhouse gas emissions, and it lacked an approach to manage key risks that could prevent it from meeting the strategy's 2050 net-zero target.

2.93 We concluded that the results on emission reductions reported by National Defence and Transport Canada were supported by the departments' implementation of internal controls and that the departments took appropriate measures to reduce greenhouse gas emissions in their areas of responsibility. However, the departments did not have a risk management approach that defined significant risks and corresponding mitigation measures. National Defence's emission reduction plan needs further information about the activities required to meet the 2050 net-zero target.

About the Audit

This independent assurance report was prepared by the Office of the Auditor General of Canada on the federal government's Greening Government Strategy, led by the Treasury Board of Canada Secretariat. Our responsibility was to provide objective information, advice, and assurance to assist parliamentarians in its scrutiny of the government's management of resources and programs, and to conclude on whether the departments we examined complied in all significant respects with the applicable criteria.

All work in this audit was performed to a reasonable level of assurance in accordance with the Canadian Standard on Assurance Engagements (CSAE) 3001—Direct Engagements, set out by the Chartered Professional Accountants of Canada (CPA Canada) in the CPA Canada Handbook—Assurance.

The Office of the Auditor General of Canada applies the Canadian Standard on Quality Control 1 and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

In conducting the audit work, we complied with the independence and other ethical requirements of the relevant rules of professional conduct applicable to the practice of public accounting in Canada, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour.

In accordance with our regular audit process, we obtained the following from entity management:

- confirmation of management's responsibility for the subject under audit
- acknowledgement of the suitability of the criteria used in the audit
- confirmation that all known information that has been requested, or that could affect the findings or audit conclusion, has been provided
- confirmation that the audit report is factually accurate

Audit objective

The objective of this audit was to determine whether

- the Treasury Board of Canada Secretariat led the Greening Government Strategy in a manner that supported progress in reducing the greenhouse gas emissions of the federal government
- National Defence and Transport Canada reported results that were supported by the implementation of internal controls and took appropriate measures to reduce greenhouse gas emissions in their areas of responsibility

Scope and approach

The scope of the audit included the 2017 and 2020 versions of the Greening Government Strategy, along with the greenhouse gas emissions monitored and reported against the strategy.

We examined supporting documentation and conducted interviews with Treasury Board of Canada officials to understand the secretariat's role in leading the Government of Canada's efforts to reduce greenhouse gas emissions in its operations. We also examined whether the secretariat tracked and disclosed government performance information centrally against its set targets and goals. As well, we examined the information provided to Treasury Board of Canada Secretariat on selected targets (such as greenhouse gas emissions from real property and fleet) and the validation work performed by the secretariat.

We examined supporting documentation and conducted interviews with departmental officials to understand the progress made by National Defence and Transport Canada to reduce their greenhouse gas emissions. We also examined these departments' internal controls to see how they determined the level of assurance on their reported results on greenhouse gas emission reductions.

We selected National Defence for this audit because in fiscal year 2020–21, it accounted for 46% of all federal departments' scope 1 and 2 greenhouse gas emissions. We selected Transport Canada because its fleet emissions accounted for almost 90% of its scope 1 and 2 greenhouse gas emissions.

The Treasury Board of Canada Secretariat reports data related to the departments' greenhouse gas emissions annually. We did not examine the accuracy of the data reported. Nor did we examine commitments in the Greening Government Strategy that focus on the resiliency of assets, services, and operations to adapt to the changing climate.

In 2015, Canada committed to achieving the United Nations 2030 Agenda for Sustainable Development. We examined the links between our audit work, the Federal Sustainable Development Strategy, and the related Sustainable Development Goals.

We considered gender-based analyses plus conducted by the Treasury Board of Canada Secretariat, National Defence, and Transport Canada with respect to the design of the Greening Government Strategy and its implementation in their respective operations.

The Treasury Board of Canada Secretariat agreed with the audit objective and supporting criteria, with 1 exception: It did not agree with decision to examine whether it monitored and reported on the costs and savings that departments and agencies incur as they implement the Greening Government Strategy. The secretariat stated that it was not responsible for monitoring and reporting on these, and that tracking and reporting on all costs and savings associated with the strategy would be impossible.

National Defence and Transport Canada agreed with the audit objective and supporting criteria.

Criteria

Criteria	Sources
We used the following criteria to determine whether • the Treasury Board of Canada Secretariat led the Greening Government Strategy in a manner that supported progress in reducing the greenhouse gas emissions of the federal government • National Defence and Transport Canada reported results supported by the implementation of internal controls and took appropriate measures to reduce greenhouse gas emissions in their areas of responsibility	
The approach developed by the Treasury Board of Canada Secretariat to meet the Greening Government Strategy's emission reduction targets is strategic. The Treasury Board of Canada Secretariat provides guidance and tools to the departments to meet the overall government targets and reviews the departments' plans. The Treasury Board of Canada Secretariat develops and implements risk management processes with respect to the Greening Government Strategy's initiatives to reduce greenhouse gas emissions.	• Achieving a Sustainable Future: A Federal Sustainable Development Strategy for Canada 2019–2022, Environment and Climate Change Canada • United Nations Framework Convention on Climate Change, United Nations • Paris Agreement, United Nations Framework Convention on Climate Change • Federal Adaptation Policy Framework, Environment and Climate Change Canada • Framework for the Management of Risk, Treasury Board
The Treasury Board of Canada Secretariat reports performance information to show progress in meeting the Greening Government Strategy's targets to reduce greenhouse gas emissions. The Treasury Board of Canada Secretariat monitors and reports on the costs and savings that departments and agencies incur over the lifecycle of the Greening Government Strategy.	• Policy on Results, Treasury Board • Management Accountability Framework, Treasury Board • Greening Government Strategy, Treasury Board of Canada Secretariat, 2017 and 2020 • Transforming our World: The 2030 Agenda for Sustainable Development, United Nations
National Defence and Transport Canada develop strategies that are aligned with the objectives of the Greening Government Strategy to reduce greenhouse gas emissions. National Defence and Transport Canada implement their strategies to deliver results in accordance with the objectives to reduce their greenhouse gas emissions. National Defence and Transport Canada design and implement internal controls to report on their results.	• *Federal Sustainable Development Act* • Achieving a Sustainable Future: A Federal Sustainable Development Strategy for Canada 2016–2019, Environment and Climate Change Canada • Greening Government Strategy, Treasury Board of Canada Secretariat, 2017 and 2020 • Departmental Sustainable Development Strategy, Transport Canada, 2017 and 2020 • Defence Departmental Energy and Environmental Strategy, National Defence, 2017 and 2020

Criteria	Sources
	• Transport Canada Carbon Plans • National Defence Carbon Plans • Transforming our World: The 2030 Agenda for Sustainable Development, United Nations

Period covered by the audit

The audit covered the period from 1 January 2017 to 31 December 2021. This is the period to which the audit conclusion applies. However, to gain a more complete understanding of the subject matter of the audit, we also examined certain matters that preceded the start date of this period.

Date of the report

We obtained sufficient and appropriate audit evidence on which to base our conclusion on 18 March 2022, in Ottawa, Canada.

This audit was completed by a multidisciplinary team from across the Office of the Auditor General of Canada led by Milan Duvnjak, Principal. The principal has overall responsibility for audit quality, including conducting the audit in accordance with professional standards, applicable legal and regulatory requirements, and the office's policies and system of quality management.

List of Recommendations

The following table lists the recommendations and responses found in this report. The paragraph number preceding the recommendation indicates the location of the recommendation in the report.

Recommendation	Response
2.35 The Treasury Board of Canada Secretariat should collect and report on all Government of Canada sources of greenhouse gas emissions clearly and comprehensively in an annual summary report.	Agreed. Treasury Board of Canada Secretariat agrees with the need to publish clear and comprehensive annual progress information. The secretariat will seek to improve the content in line with this recommendation when it publishes its annual progress summary on the Centre for Greening Government's website. The scope of reporting is being increased to reflect the requirements of the 2020 Greening Government Strategy, including reporting on scope 3 emissions. The Centre for Greening Government will undertake consultations on reporting emissions from Crown corporations for the planned next update to the Greening Government Strategy in fiscal year 2023–24. The actions associated with this recommendation will be completed through the annual greenhouse gas emissions reporting update (every year approximately in January) on the centre's website.
2.43 The Treasury Board of Canada Secretariat should include additional details about strategic commitments in its next revision of the Greening Government Strategy.	Agreed. The secretariat will include additional details related to strategic commitments in the next revision of the Greening Government Strategy.
2.53 The Treasury Board of Canada Secretariat should develop a comprehensive risk-management approach that outlines how it will regularly identify, monitor, and mitigate significant risks.	Agreed. Treasury Board of Canada Secretariat agrees with the need to develop a comprehensive risk management approach that outlines how significant risks will be regularly identified, monitored, and mitigated. This work was commenced by the Centre for Greening Government in the summer of 2021 and will be expanded and updated, with interdepartmental input. The actions associated with this recommendation will be completed by June 2023.
2.56 The Treasury Board of Canada Secretariat should • set a date by which all departments must complete their greenhouse gas emission reduction and net-zero plans	Agreed. The secretariat agrees there should be a clear timeframe for departments to develop departmental greenhouse gas emission reduction plans and that these plans should be reviewed.

Recommendation	Response
• require departments to include the milestones identified in the Greening Government Strategy in their plans • facilitate independent reviews of departments' plans to determine whether they are sufficient to meet the 2050 net-zero target	The secretariat will update the Greening Government Strategy in fiscal year 2023–24, at which time it will ensure that clear timeframes for real property greenhouse gas emission plans are included. Additionally, the secretariat will work with National Defence, the Canadian Coast Guard, and the RCMP to ensure the completion of national safety and security fleet decarbonization plans by 2023, as required by the Greening Government Strategy.
2.63 The Treasury Board of Canada Secretariat should develop an approach to track costs and savings to provide decision makers, parliamentarians and Canadians with sufficient information about the estimated costs and savings to achieve the 2050 net-zero target.	Partially agreed. The secretariat agrees that the Greening Government Strategy's 2050 net-zero target should be implemented in the most cost-effective manner and that sufficient information should be given to parliamentarians and Canadians on the approach to measure cost-effectiveness. Treasury Board of Canada Secretariat disagrees that it does not have an approach to tracking costs and savings. The Centre for Greening Government has developed an approach that focuses on ensuring the lowest life-cycle implementation costs (including costs and savings over the life of assets) and has developed controls to achieve this objective. The approach includes the actions outlined in paragraph 2.61. Furthermore, departments report to parliamentarians on their capital expenditures through the main estimates and public accounts and on overall progress on greening their operations through their departmental sustainable development strategies. Greening costs and savings are integrated into, and a minor part of, overall capital expenditures on real property and fleet. Separating the greening components from the capital investment components for all capital expenditures would be extremely resource-intensive and after the fact. Implementing lifecycle cost analysis with controls at the beginning of projects is an efficient means to achieve greening outcomes at the lowest cost. As such, the secretariat will publish more information on this approach to tracking costs and savings for Canadians by winter 2023.

Recommendation	Response
	Additionally, the secretariat will report (through its departmental sustainable development strategy and website) on the 2 programs it delivers: the Greening Government Fund and the Low Carbon Fuels Procurement Program.
2.88 National Defence and Transport Canada should • continually identify new activities that will significantly contribute to emission reductions and prioritize them based on risk • develop a risk management approach that defines significant risks and corresponding mitigation measures	**National Defence's response.** Agreed. National Defence accepts the recommendation and recognizes the need for increased prioritization and risk management. National Defence will formalize a risk management approach that is integrated with its Corporate Risk Profile. This will include identifying significant risks, options, and mitigations for senior management to consider, by March 2023. National Defence will complete a roadmap to reduce real property greenhouse gas emissions by 90% of the 2005 baseline and attain a net-zero portfolio by 2050. The roadmap will identify opportunities (and challenges) to achieving net-zero along with associated costs and risks, by March 2024. **Transport Canada's response.** Agreed. Transport Canada recognizes that it may face challenges in meeting the 2050 net-zero target due to its complex fleet portfolio and rapidly evolving technologies that could be used to green large marine vessels and aircraft. Because of this, the department updates its Carbon Neutral Roadmap as required, identifying and including new short- and long-term actions as they become available that will significantly contribute to emission reductions. In order to capture significant risks that could prevent the department from reaching the Greening Government Strategy emission targets, Transport Canada will develop a risk management framework that will also identify corresponding mitigation measures, with the objective of having the framework in place by 31 March 2023.