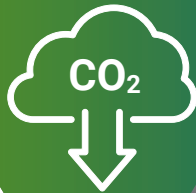


Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada

Report 4

Emissions Reduction Fund— Natural Resources Canada



Independent Auditor's Report | 2021



Office of the
Auditor General
of Canada

Bureau du
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Emissions Reduction Fund—
Natural Resources Canada



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Introduction

Background

Emission reductions that count toward Canada's climate change target

4.1 **Greenhouse gases** emitted by human activities are causing climate change around the world. Since 1992, Canada and nearly every country in the world committed to a series of international agreements to counter the significant threats posed by climate change. The latest international effort is the Paris Agreement, which came into force in 2016. The goal of this legally binding agreement is to limit global warming to well below 2 °C and preferably to 1.5 °C, compared with temperature levels in pre-industrial times, by reducing greenhouse gas emissions.

4.2 Under the Paris Agreement, Canada initially committed to a 30% reduction in annual greenhouse gas emissions below the 2005 level by the year 2030. In 2021, it raised its target to emission reductions of 40% to 45% below 2005 levels by 2030. This would mean reducing emissions by 296 to 333 **megatonnes of carbon dioxide equivalent (Mt CO₂ eq)** from 739 in 2005 to levels between 443 and 406 by 2030 (Exhibit 4.1). Looking past 2030, Canada is also committed to reaching net-zero greenhouse gas emissions by 2050.

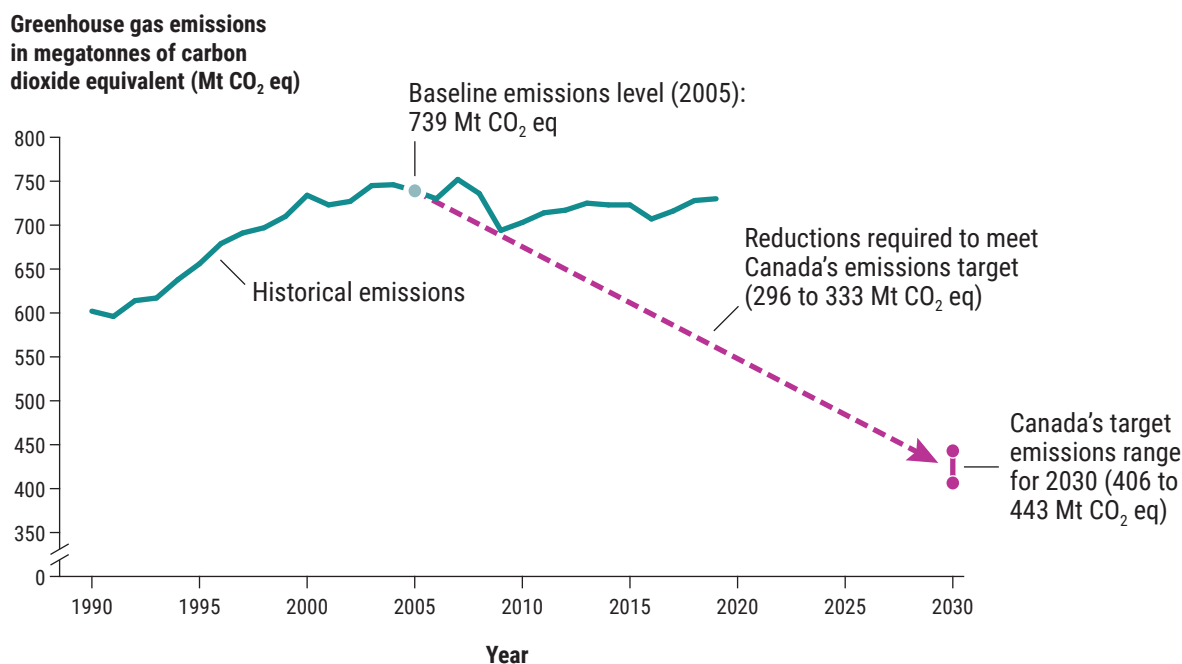
4.3 Meeting Canada's targets for 2030 and 2050 will require deep and real reductions in greenhouse gas emissions below the levels recorded for previous years. Despite a series of commitments and accompanying plans, policies, and measures, Canada's greenhouse gas emissions have thus far not been on a downward trajectory. In fact, Canada's greenhouse gas emissions rose by 21% between 1990 and 2019.

Greenhouse gases—Gases in the atmosphere that warm the earth by trapping infrared radiation. They include carbon dioxide, **methane**, and nitrous oxide.

Methane—A greenhouse gas that has 28 times the global warming potential of carbon dioxide over 100 years.

Megatonne of carbon dioxide equivalent (Mt CO₂ eq)—The amount of a greenhouse gas that has the same warming potential as a million tonnes (a megatonne) of carbon dioxide over a specified period.

Exhibit 4.1—Canada’s path to achieving its 2030 target under the Paris Agreement



Source: Based on the National Inventory Report 1990–2019: Greenhouse Gas Sources and Sinks in Canada, Environment and Climate Change Canada, 2021

4.4 In addition to addressing the climate crisis, Canada has been dealing with the **coronavirus disease (COVID-19)** pandemic since March 2020. In response to some of the economic and social challenges associated with the pandemic, the federal government put in place general support programs. One of these was the Canada Emergency Wage Subsidy, intended to help employers retain staff during the pandemic. Another was the Canada Emergency Response Benefit, which offered help to employed and self-employed people who were unable to continue working because of the pandemic. Support tailored to specific business sectors was also provided, including to the energy sector. Concurrently, in April 2020, referring to climate change, the Prime Minister said, “Just because we’re in a health crisis doesn’t mean we can neglect the environmental crisis.”

Onshore Program of the Emissions Reduction Fund

4.5 In November 2020, the government launched the Onshore Program of the Emissions Reduction Fund, which was part of Canada’s COVID-19 Economic Response Plan. The government saw the Onshore Program as a way to help the energy sector deal with lower oil prices during the pandemic. The program was designed to support emission reduction efforts by providing financial support to struggling companies

Coronavirus disease (COVID-19)—The disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

in the sector. It offered up to \$675 million to help onshore (that is, land-based) oil and gas companies maintain employment, attract investments, increase global competitiveness, and accelerate their deployment of equipment to reduce greenhouse gas emissions, with a particular focus on methane.

4.6 The 7-year program provided for funding to be disbursed in the 2020–21 and 2021–22 fiscal years. It gave companies 5 years to repay the contributions, ending in 2026–27.

4.7 Natural Resources Canada is responsible for the design, implementation, and delivery of the Onshore Program of the Emissions Reduction Fund.

**United Nations’
Sustainable
Development Goals**

4.8 In September 2015, Canada committed to achieving the United Nations’ 2030 Agenda for Sustainable Development. In 2017, the Office of the Auditor General of Canada committed to examining through our audit work how federal organizations are contributing to the United Nations’ Sustainable Development Goals. Natural Resources Canada noted that the Emissions Reduction Fund may contribute to Goal 13: Climate Action and Goal 9: Industry, Innovation and Infrastructure.

4.9 The matters examined in this audit relate to Goal 13: “Take urgent action to combat climate change and its impacts.” This goal has the associated target 13.2: “Integrate climate change measures into national policies, strategies and planning.” Progress toward the target is to be assessed by measuring total greenhouse gas emissions per year (indicator 13.2.2).

4.10 Our examination also relates to Goal 9: “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.” This goal has the associated target 9.4: “By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.” Progress toward the target is to be assessed by measuring “carbon dioxide emissions per unit of value added” (indicator 9.4.1)—that is, the amount of emissions per unit of economic output.

Focus of the audit

- 4.11 This audit focused on whether Natural Resources Canada
- designed the Onshore Program of the Emissions Reduction Fund to ensure that the anticipated reductions of greenhouse gas emissions in the oil and gas sector after 2023 would be credible and sustainable
 - conducted due diligence technical and financial assessments of each applicant's project submission, including the assessment of how each contribution would represent **value for money**
- 4.12 This audit is important because Canada and all other countries need to significantly reduce their greenhouse gas emissions to stabilize concentrations of these gases in the atmosphere and mitigate catastrophic climate change. The Government of Canada continues to spend considerable money to reduce the country's total emissions. The mitigation programs it designs need to deliver real emission reductions below the levels recorded for previous years to achieve Canada's targeted emissions levels in 2030 and 2050.
- 4.13 More details about the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this report (see pages 32–34).

Findings, Recommendations, and Responses

Overall message

- 4.14 Overall, Natural Resources Canada did not design the Onshore Program of the Emissions Reduction Fund to ensure credible and sustainable reductions of greenhouse gas emissions in the oil and gas sector or value for the money spent.
- 4.15 The Onshore Program provided interest-free loans for companies to comply with or exceed the 2023 requirements of the legally binding *Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)* (federal methane regulations). We found that, when designing the Onshore Program, Natural Resources Canada did not apply greenhouse gas accounting principles or the concept of additionality—that is, emission reductions attributed to the program should be in addition to

Value for money—The extent to which a program demonstrates relevance and performance. Relevance is achieved by addressing a demonstrable need that is appropriate for the federal government and is responsive to the needs of Canadians. Performance is achieved by using taxpayer resources well, producing program outputs in an affordable manner, and achieving outcomes consistent with program objectives.

Source: Directive on Transfer Payments, Treasury Board

what would have happened without it. As a result, more than half of the total reductions targeted by the program had already been accounted for under the federal methane regulations. Even though the Onshore Program enables companies to comply with regulatory requirements, the department should not have attributed regulated reductions to the program and misstated what the program could achieve.

4.16 Natural Resources Canada did not require that companies apply greenhouse gas accounting principles or the concept of additionality as defined in recognized standards when estimating projects' expected emission reductions. For two thirds of the 40 submissions to the first intake period of the program, the department made funding decisions on the basis of overestimates of expected reductions. For 27 funded projects, companies had indicated in their submissions that these projects would also accommodate an increase in oil or gas production. However, companies excluded from their final estimates the increases in emissions that would result from such increases in production. Had these increases in emissions been accounted for, they would have lessened or even outweighed the emission reductions expected from these projects.

4.17 Greenhouse gas accounting principles and standards are designed to ensure that, if applied as recommended, emission reduction estimates are reliable and present a clear picture of what contribution a program could make to achieving Canada's climate change commitments. Not following them puts at risk the ability of the program to achieve any emission reduction target through the projects it funded.

4.18 Lastly, Natural Resources Canada did not fully assess value for money in reducing greenhouse gas emissions, helping maintain employment, or attracting investments with respect to the submissions to the first intake period of the Onshore Program. Although the department assessed the relevance of each project, it did not assess the minimum amount of the interest-free loan a company would need and awarded the maximum amount requested. The department determined only the portion of the loan that would be non-repayable on the basis of cost per tonne of reduction.

4.19 In 2009, as part of the Group of 20 (G20) leaders' summit, Canada committed to "phase out and rationalize over the medium term inefficient fossil fuel subsidies." It is therefore important that programs funding oil and gas companies be efficient and effective at delivering emission reductions and represent value for money. Otherwise, such funding programs risk undermining Canada's efforts to fight climate change and risk being inefficient fossil fuel subsidies.

Estimating the emission reductions achievable under the Onshore Program

Context

4.20 A component of Canada's oil and gas industry is the onshore (that is, land-based) conventional oil and gas sub-sector. Its upstream activity involves exploration and production of oil and gas, while its midstream activity involves processing and transportation of that oil and gas (in both cases, oil sands activity is excluded). In 2019, the conventional upstream and midstream onshore oil and gas sub-sector accounted for 12% of Canada's total greenhouse gas emissions, or 86.7 Mt CO₂ eq. Of that amount, 35.6 Mt CO₂ eq, or 41%, were emissions from unintentional sources and intentional **venting**, mainly of methane gas, a by-product of oil and gas extraction.

4.21 The *Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)*, or the federal methane regulations, were enacted in 2018. The regulations are part of Canada's climate change strategy. Their goal is to reduce emissions of methane and volatile organic compounds from upstream oil and gas activity. The regulations aim to deliver on the oil and gas sector's target of a 40% to 45% reduction in methane emissions below the 2012 level by the year 2025. Provincial methane regulations can apply instead of the federal regulations and are expected to deliver an amount of emission reductions equivalent to what is expected under the federal regulations.

4.22 Phase 1 of the federal methane regulations took effect in 2020. Phase 1 covers unintentional methane equipment leaks, as well as intentional venting from **well completion** and compressors. Phase 2 of the federal regulations will take effect on 1 January 2023. It puts limits on general venting, mainly of methane, from production in an oil and gas facility and on venting from pneumatic equipment.

4.23 Under the Onshore Program of the Emissions Reduction Fund, Natural Resources Canada provides loans in the form of **contributions** to oil and gas companies. The loans are interest-free and therefore constitute a subsidy. The recipient companies are to reduce or eliminate greenhouse gas emissions from intentional venting, consistent with the requirements of Phase 2 of the federal regulations that will take effect on 1 January 2023, or their provincial equivalents. To do this, the

Venting—The emission of gas from an upstream oil and gas facility in a controlled manner to release by-products from oil and gas production or to release pressure from operations.

Well completion—The process of making a well ready for production.

Contribution—A conditional transfer payment made to an industry recipient, subject to the performance conditions specified in a funding agreement. A contribution is subject to audit and reporting requirements.

companies will have to invest in technologies that meet or surpass the requirements of the applicable methane regulations on general venting from oil and gas facilities and on venting from pneumatic equipment.

Natural Resources Canada overestimated the reductions in greenhouse gas emissions expected from the Onshore Program

What we found

4.24 We found that Natural Resources Canada overestimated the reductions in greenhouse gas emissions that it expected under the Onshore Program. The department did not base its approach to estimating reductions on recognized greenhouse gas accounting principles or standards to ensure that expected reductions were reliable.

4.25 The analysis supporting this finding discusses the following topics:

- Overestimate of emission reductions expected from the Onshore Program
- Misstated emission reduction target for the Onshore Program
- Lack of performance indicators for the Onshore Program

Why this finding matters

4.26 This finding matters because if the actions to mitigate climate change are designed on the basis of overestimates of the reductions in greenhouse gas emissions expected from these actions, the federal government will not achieve the amount of reductions it had planned to meet Canada's 2030 target under the Paris Agreement. It also means that the government will have to spend additional taxpayers' money if it wants to bridge the gap in reductions.

Context

4.27 Natural Resources Canada had to adopt a methodology for estimating the reductions in emissions that could be expected from the Onshore Program in and after 2023.

4.28 When such estimates are to be prepared, recognized greenhouse gas accounting principles and standards are available for ensuring that the estimates are reliable and achievable. All the various standards require the application of key greenhouse gas accounting principles in preparing and reporting the estimates (see Exhibit 4.2).

Exhibit 4.2—Key accounting principles are available for estimating reductions in greenhouse gas emissions

Transparency: Information is clear and complete for someone to assess the credibility and reliability of the emission reduction estimates for greenhouse gases. The information includes all relevant methods, data sources, calculations, assumptions, and uncertainties.

Completeness: Emission reduction estimates are based on all greenhouse gas sources and sinks (natural processes that remove greenhouse gases from the atmosphere) in the scope of the assessment and all the significant sources and sinks affected directly and indirectly by the mitigation action. Exclusions are disclosed and justified.

Relevance: Emissions reduction estimates appropriately reflect the effects of the mitigation action on greenhouse gases and serve the needs of decision makers, internal and external users, and stakeholders.

Accuracy: Emission reduction estimates are systematically neither over nor under actual values, as far as can be judged. Uncertainties are reduced as far as practicable.

Conservativeness: Values and assumptions are those more likely to underestimate reductions in greenhouse gas emissions.

Consistency: Emission reduction estimates are prepared in the same way using data, methods, criteria, and assumptions that allow meaningful and valid comparisons.

Source: Adapted from ISO 14064-2:2019 Greenhouse Gases—Part 2, International Organization for Standardization; and Greenhouse Gas Protocol: Policy and Action Standard, World Resources Institute, 2014

4.29 The greenhouse gas accounting principles and standards do not require the use of a specific calculation method for estimating reductions in greenhouse gas emissions from a mitigation action such as the Onshore Program. However, there are important concepts that should be applied (see Exhibit 4.3).

Exhibit 4.3—Important concepts for estimating the reductions in greenhouse gas emissions expected from a mitigation action

Baseline scenario and related sources of emissions: Course of events most likely to occur in the absence of a mitigation action and the resulting level of greenhouse gas emissions expected.

Mitigation action scenario and related sources of emissions: Course of events most likely to occur when a mitigation action is implemented and the resulting level of greenhouse gas emissions expected.

Greenhouse gas assessment boundary: Scope of assessment in terms of the range of sources and sinks included in the greenhouse gas assessment of a mitigation action. Includes significant sources and sinks of emissions directly and indirectly affected by the program.

Additional reductions (additionality): In general, reductions that would not have happened in the absence of a mitigation action.

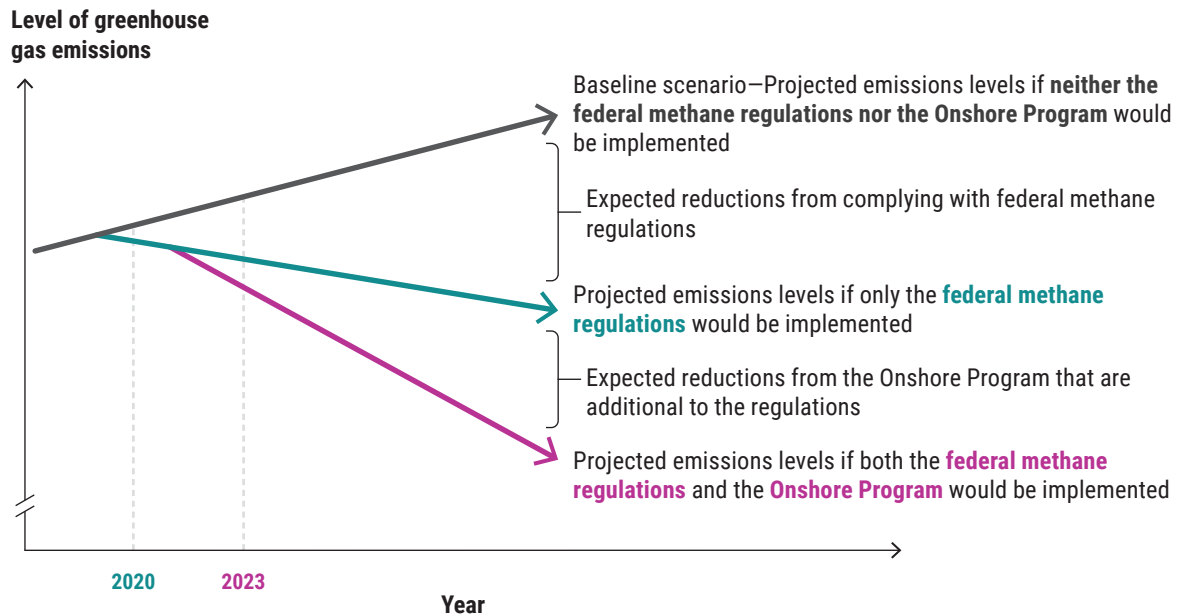
Source: Adapted from ISO 14064-2:2019 Greenhouse Gases—Part 2, International Organization for Standardization; and Greenhouse Gas Protocol: Policy and Action Standard, World Resources Institute, 2014

4.30 Lastly, recognized standards require the application of a general approach for estimating reductions in greenhouse gas emissions that a program is expected to achieve in a future target year:

- Develop a baseline scenario and projections of related greenhouse gas emissions (that is, what is most likely to occur in the absence of a mitigation action).
- Develop a mitigation action scenario and projections of related greenhouse gas emissions (that is, what is most likely to occur if a mitigation action is implemented).
- Calculate reductions in the target year by subtracting mitigation action scenario emissions in that year from baseline scenario emissions in the same year.

This approach yields reliable results (see Exhibit 4.4).

Exhibit 4.4—The standard approach could be applied to reliably estimate future reductions in greenhouse gas emissions from the federal methane regulations* and the Onshore Program



* Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)
 Source: Based on Greenhouse Gas Protocol: Policy and Action Standard, World Resources Institute, 2014

Recommendations

4.31 Our recommendations in this area of examination appear at paragraphs 4.35, 4.39, and 4.46.

Analysis to support this finding

Overestimate of emission reductions expected from the Onshore Program

4.32 We found that Natural Resources Canada did not follow key greenhouse gas accounting principles or a standard when preparing its estimates of expected reductions in emissions. As a result, the department’s expectation that the Onshore Program could achieve 3.7 Mt CO₂ eq of emission reductions per year as of 2023 was an overestimate and was not reliable.

4.33 We examined the department’s process for estimating emission reductions against the principles and concepts presented in exhibits 4.2 and 4.3. We noted the following issues:

- **The process for estimating expected reductions lacked transparency.** No complete or clear documentation was available that described the department’s approach, model, assumptions, data sources, calculations, and uncertainties. Moreover, there were

no documented justifications or explanations for decisions made on the estimation approach or for the way these decisions could affect the final estimates of the expected reductions.

- **The department did not develop a baseline scenario and a mitigation action scenario specifically for the Onshore Program.** The department did not project greenhouse gas emission levels to estimate the reductions that could be expected under the program in and after the 2023 target year (see paragraph 4.30). Instead, the department used scenarios and projections developed in 2018 for the federal methane regulations, which used data from 2015 and 2016, and replaced some data with more recent data from 2018 and 2019. However, the baseline scenario developed in 2018 could not take account of subsequent events, notably the COVID-19 pandemic, and their effects on oil and gas production prior to the implementation of the program in November 2020. This meant that the department did not establish the most likely scenario or estimate the annual emission levels for the period from the 2023 target year to 2025 for Canada's oil and gas sector. It did not present an estimated baseline emissions value for its 2023 target. The Government of Canada updates its national projections of greenhouse gas emissions every year to reflect the most likely scenarios over the coming years.
- **The estimates relied on incomplete information and did not count indirect effects.** The department estimated only emissions associated with the piece of equipment to be replaced using the funding from the Onshore Program. The greenhouse gas accounting principle of completeness (see Exhibit 4.2) requires that emission reduction estimates include all significant direct and indirect sources of emissions affected by a mitigation action. This is important because if an equipment upgrade indirectly leads to a significant increase in oil or gas production, the related greenhouse gas emissions would increase also and the net reduction in emissions would be lower than would be expected from the equipment upgrade. If significant enough, an increase in oil or gas production could outweigh the program's positive effect.
- **The estimates did not consider overlap of programs and were inaccurate.** The department did not consider the possible overlap between the Onshore Program and other government policy measures affecting the same sources of emissions, such as the federal methane regulations. This is important because without funding from the program, some companies might have decided to reduce or stop operations rather than comply with the federal methane regulations. Alternatively, some companies might have decided to upgrade equipment beyond what the federal methane regulations required because they expected the regulations to

become stricter. Failure to take account of possible program overlaps could affect the amount of reductions that could be attributed to the Onshore Program.

- **The department did not define additionality in a manner consistent with the standards.** The department considered additional reductions to be those that would be achieved if all funded companies in the oil and gas sector invested in equipment surpassing the requirements of the federal methane regulations. This definition did not take account of the possibility that some companies would have invested in equipment surpassing the regulatory requirements even without funding from the program. For instance, the elimination of venting allows companies to collect the methane that was not vented and sell it for profit.
- **The estimates were not conservative.** The department's estimate of a 3.7 Mt CO₂ eq reduction in emissions was a best-case scenario based on the assumption that the total amount of \$675 million in funding would be disbursed to almost all of the 610 eligible companies in Canada. It was also assumed that companies would use the funding to buy and install equipment surpassing the requirements of the federal methane regulations. The department recognized that this scenario would be very difficult to realize. Furthermore, the department assumed that no company would invest in equipment surpassing the regulatory requirements without funding from the program. These assumptions were not in line with the principle of conservativeness.

4.34 Under the Onshore Program, companies opting for repayable funding were able to seek **offset credits** for achieved reductions from an accredited certification body or an offset protocol or program. However, we found that the department did not analyze the additionality of such offset credits and how they might affect Canada's greenhouse gas emissions after 2023. In the absence of an additionality analysis of the offset credits that companies could obtain, there was no guarantee that the Onshore Program was designed to result in emission reductions beyond those that would have happened without the program. Because a company or an organization could use the offset credits it purchased to produce more emissions than it would otherwise, this situation presented the risk that generating offset credits would ultimately lead to an increase in Canada's emissions.

Offset credit—A transferable instrument certified by governments or independent certification bodies to represent an emission reduction of 1 metric tonne of carbon dioxide or an equivalent amount of other greenhouse gases. A company that purchases an offset credit can use it to claim the underlying reduction toward its own greenhouse gas reduction goals.

Source: Securing Climate Benefit: A Guide to Using Carbon Offsets, Stockholm Environment Institute and Greenhouse Gas Management Institute

4.35 **Recommendation.** To help Canada achieve its national targets for the reduction of greenhouse gas emissions, when developing any policy, program, or measure that aims to reduce emissions, Natural Resources Canada should ensure that its estimates of expected reductions are reliable. Accordingly, the department should prepare estimates of the program's expected emission reductions in accordance with the greenhouse gas accounting principles and the requirements of the International Organization for Standardization standard on greenhouse gases (ISO 14064-2) or another standard or protocol based on ISO 14064. The department should do the following:

- In its assessment of how a program will affect greenhouse gases, include all the significant sources and sinks affected directly and indirectly by the program and disclose and justify any exceptions. This is to ensure that the estimate of emission reductions is complete and accurate.
- Develop up-to-date baseline and mitigation action scenarios and emissions for the period of implementation. This includes ensuring that the baseline and mitigation action scenarios represent the most likely course of events both without and with the particular program concerned. This approach ensures that mitigation action scenario emissions minus baseline scenario emissions represent reductions attributable to the program.
- Analyze additionality, including the impact of offset credits, to confirm that the estimated emission reductions are additional to what would have happened in the absence of the program.
- Document its approach, assumptions, and methods, including the model or models used, data sources, calculations, and uncertainties, and disclose and justify any deviation from the ISO 14064-2 standard or another chosen standard based on it.

The department's response. *Agreed. Natural Resources Canada recognizes the importance of following international best practices, including the World Resources Institute's greenhouse gas accounting and reporting principles and the International Organization for Standardization ISO 14064-2 Specification With Guidance at the Project Level for Quantification, Monitoring and Reporting of Greenhouse Gas Emission Reductions or Removal Enhancements, not only to shape the quality of the program design, but also to be able to allow comparisons of results to similarly designed programs.*

Establishing the appropriate boundary conditions is critical to the design of a program and all other design elements. However, while some programs are best designed with source-based boundary conditions, such as the Emissions Reduction Fund and the Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector), others are appropriate for facility-based or project-based conditions. The department also

recognizes the importance of assessing the boundary conditions as designed for a program, in order to render a credible comparison and assessment.

The department will

- apply the assessment boundary it judges appropriate (source-based or facility-based) in the design and implementation of future programs, on the basis of the decision-making needs of the project*
- follow ISO 14064-2 standards and other good-practice guidance as appropriate, with consideration to the recommendations from the Commissioner of the Environment and Sustainable Development as applicable to the boundary conditions selected in the design and implementation of future programs that include a component for reducing greenhouse gas emissions*

Misstated emission reduction target for the Onshore Program

4.36 Natural Resources Canada made a misstatement when it set the target for the Onshore Program. The department had to establish an official target for the Onshore Program on the basis of an estimate of the emission reductions that the program could achieve. The target was stated as expected reductions of between 5.1 and 8.8 Mt CO₂ eq in annual greenhouse gas emissions by 31 March 2023 from a baseline value of 172.6 Mt CO₂ eq emitted by the onshore oil and gas sector in 2018. This baseline value was reported in Canada's **National Inventory Report** of greenhouse gas emissions published in April 2020. As stated, this target meant that the onshore oil and gas sector's total emissions would decrease to a level between 167.5 and 163.8 Mt CO₂ in 2023. However, the department did not use the 2018 oil and gas sector emissions of 172.6 Mt CO₂ eq as a baseline emissions value for 2023 to estimate the reductions achievable by the program (see paragraph 4.33, second bullet), and stating the department's target against this value was incorrect.

4.37 The lower end of this range (reductions in emissions of up to 5.1 Mt CO₂ eq) represented what companies could achieve if they complied with, but did not surpass, the requirements of the federal methane regulations coming into force in 2023, or their provincial equivalents. Claiming the reductions of 5.1 Mt CO₂ eq for the program is a misstatement because the government had already accounted for these expected reductions under the federal methane regulations in the impact analysis statement for those regulations published in 2018. The higher end of this range (reductions of up to 8.8 Mt CO₂ eq) represented what companies could achieve if they surpassed the requirements

National Inventory Report—An annual report that each signatory of the Paris Agreement is required to submit, giving details of human-made greenhouse gas emissions and removals in its jurisdiction.

of the federal methane regulations coming into force in 2023, or their provincial equivalents.

4.38 As a result, only the difference between the high end and the low end of the range—that is, 8.8 minus 5.1, or a maximum of 3.7 Mt CO₂ eq of additional reductions—should be attributed solely to the program, if reductions of that amount are achieved. We found that, after removing the expected emission reductions attributable to compliance with the federal methane regulations, the department’s emission reduction target for the Onshore Program was between 0 (worst-case scenario) and 3.7 Mt CO₂ eq (best-case scenario). The department recognized that achieving the best-case scenario would be very difficult to realize.

4.39 **Recommendation.** When presenting a target for reductions in greenhouse gas emissions that a program is expected to achieve in a future target year, Natural Resources Canada should state the additional annual reductions it expects the program to achieve in that target year against the projected baseline scenario emissions level in the same year.

The department’s response. *Partially agreed. Natural Resources Canada followed and complied with the Treasury Board of Canada Secretariat’s Guidance for Drafters of Treasury Board Submissions for establishing performance indicators and baselines as required for new programs. As the Onshore Program was new and did not align with existing programming, there was no existing baseline, which therefore resulted in a zero baseline.*

The medium-term indicator for the Onshore Program is greenhouse gas reductions from projects funded by the Emissions Reduction Fund (ERF). To avoid including reductions that may occur before ERF-funded projects or concurrently with these projects, the department established this indicator to attribute results to projects completed with ERF funding. The methodology to report on the performance indicator will require the department to aggregate all reductions from ERF-funded projects to report a total number of reductions from all ERF-funded projects, with the target of reducing a total of 5.1 to 8.8 megatonnes of carbon dioxide equivalent (Mt CO₂e) from ERF-funded projects.

The department acknowledges the oversight in communicating the baseline, and it should have been established at zero. Adjusting the baseline is important, as it will allow for an assessment of the Onshore Program to be conducted once the program has concluded, to validate the accuracy of the department’s estimates in establishing reduction targets.

The department will

- adjust the baseline from 172.6 Mt CO₂e (2018 National Inventory Report data) to 0 Mt CO₂e (new program)*
- adjust the baseline methodology that references the National Inventory Report*

- *consider the recommendations from the Commissioner of the Environment and Sustainable Development, as applicable, to the selection of boundary conditions and baselines of future programs that include a component for reducing greenhouse gas emissions*

4.40 **About the department’s response.** In our view, the response does not address our recommendation that the department should state the additional annual reductions it expects the program to achieve in that target year against the projected baseline scenario emissions level in the same year.

Lack of performance indicators for the Onshore Program

4.41 Natural Resources Canada indicated that one of the rationales for the Onshore Program was to help maintain jobs in the oil and gas sector. However, we found that the department did not include job retention as a feature in the program’s design. For example, it did not list job retention as an eligibility condition or an assessment criterion for funding decisions. The department also did not include job retention or creation in the oil and gas sector as a performance indicator for the Onshore Program. However, it planned to request this information from funded companies as part of the contribution agreements’ reporting requirements.

4.42 We found that the department conducted a **gender-based analysis plus** (GBA plus) for the Onshore Program. As part of its GBA plus data collection and reporting plan, the department included 3 indicators, but these did not relate to expected GBA plus outcomes or performance indicators specific to the outcomes of the Onshore Program. For example, one indicator proposed by the department aimed to evaluate the portion of funded companies that voluntarily shared workforce diversity data. With this information, the department planned to improve the understanding of diversity among oil and gas sector workers.

4.43 The department also planned to collect data on funded projects that would be compiled by region. The department stated that this would help inform future analysis of whether improvements to the program’s environmental outcomes resulted in improvements in GBA plus impacts.

4.44 Furthermore, Natural Resources Canada’s 2021–22 Departmental Plan stated that the Emissions Reduction Fund supported the United Nations’ Sustainable Development Goal 13 on climate action. However, we found that the plan did not specify whether the department

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

intended to monitor and report on the target and indicator related to that goal at the program level. We noted that the department had also missed an opportunity to include any mention of the program in its Departmental Sustainable Development Strategy 2020 to 2023 (updated in the 2021–22 fiscal year).

4.45 The department noted that the Emissions Reduction Fund may contribute to Sustainable Development Goal 9 on industry, innovation, and infrastructure. In response to a question from us, the department specifically noted the alignment with the related target 9.4, which concerns upgrading infrastructure and retrofitting industries to make them sustainable. However, we found no further mention of this in its 2021–22 Departmental Plan or its Departmental Sustainable Development Strategy 2020 to 2023 (updated in 2021–22). It was therefore unclear how the department would assess the Onshore Program’s contribution to target 9.4 of this Sustainable Development Goal.

4.46 **Recommendation.** Natural Resources Canada should explain how a program will provide announced benefits and meet the related objectives using performance or outcome indicators that are specific to the objectives of the program. It should evaluate and monitor progress against the objectives using the relevant performance or outcome indicators. For example, for the third intake period of the Onshore Program, the department should do so for benefits such as helping oil and gas companies maintain jobs, increasing global competitiveness, and contributing to the United Nations’ Sustainable Development Goals 13 and 9 as well as to gender-based analysis plus.

The department’s response. *Agreed. Natural Resources Canada establishes performance measurement requirements for all programs to support data collection and reporting on the results of the department meeting program objectives over the short, medium, and long term. While utilizing Departmental Results Framework and program inventory information is a best practice for the indicators, objectives, and architecture that are relevant, some programs may require custom performance indicators to measure tangible results of a unique program. For example, the research, development, and deployment stream of the Emissions Reduction Fund (ERF) aligned with the Departmental Results Framework structure, as this stream is an existing business line within the department, and aligned with an existing program inventory with common outcomes, indicators, targets, and baselines. However, the unique design and delivery of the Onshore Program required customized indicators specific only to the onshore deployment activities, as new functions of its standard business lines. These custom indicators allow the department the ability to track and measure the actual results of ERF-funded projects over the short, medium, and long term, on the basis of the objectives and outcomes identified by the government.*

The department will provide annual and periodic reporting on greenhouse gas emission reductions and jobs (direct and indirect) from ERF-funded projects, as new information becomes available.

Funding projects to achieve the Onshore Program's expected emission reductions

Context

4.47 Oil and gas companies in the upstream and midstream sub-sectors were eligible to apply for the Onshore Program. They had to propose projects designed to reduce or eliminate intentional venting of methane and other greenhouse gases. This requirement was to enable the companies to comply with or surpass the requirements of Phase 2 of the federal methane regulations coming into force on 1 January 2023.

4.48 Phase 2 of the federal methane regulations puts limits on general venting from production in an oil and gas facility and on venting from pneumatic equipment. Phase 2 also specifies performance standards that require companies to adopt new technology, update current equipment, or adapt operating practices. Companies can replace venting equipment with equipment that generates emissions at the compliance level or equipment that eliminates venting and thus surpasses compliance requirements.

4.49 Under the Onshore Program, companies that aimed to simply satisfy the Phase 2 requirements were eligible to receive only repayable interest-free loans. Companies proposing projects that surpassed requirements were eligible to receive partly repayable interest-free loans and partly non-repayable grants. In this way, Natural Resources Canada sought to create incentives for reducing greenhouse gas emissions beyond what was expected from simple compliance with the federal regulations taking effect in 2023.

4.50 Each company was allowed to present one multi-project submission in each of the 3 intake periods:

- from 27 October to 30 November 2020
- from 18 January to 6 April 2021
- from 6 August 2021 to 7 January 2022

4.51 We examined the contribution agreements for companies with projects approved for funding in the first intake period. Of the 17 eligible companies, 2 withdrew and 15 were funded. These 15 companies received funding for a total of 40 projects. Contribution agreements from the second and third intake periods were not in place at the time of our audit and therefore were not available for our examination.

Natural Resources Canada assessed the financial viability of companies and added risk controls and monitoring for all companies

What we found

4.52 We found that Natural Resources Canada performed due diligence assessments of companies' financial viability and their ability to repay when they applied for funding from the Onshore Program. We also found that the final contribution agreements included controls and risk monitoring procedures to mitigate the risk of default and help ensure that projects would be completed.

4.53 The analysis supporting this finding discusses the following topics:

- Sound financial assessment of companies
- Risk controls and monitoring procedures added

Why this finding matters

4.54 This finding matters because sound risk assessment, risk mitigation, and monitoring help ensure that companies can repay loans, and thereby minimize losses of taxpayers' money.

Recommendations

4.55 We made no recommendations in this area of examination.

Analysis to support this finding

Sound financial assessment of companies

4.56 We found that Natural Resources Canada developed a sound financial assessment framework to evaluate submissions to the Onshore Program. This enabled the department to determine whether each company submitting a proposal was financially viable and could repay a loan provided under a contribution agreement. The department hired external accountants to help design the framework and validate the criteria selected for assessing financial viability.

4.57 We also found that the department implemented its assessment framework for all submissions consistently and rigorously. Of the 17 eligible companies that submitted a project proposal during the first intake period, 2 withdrew their application. Of the remaining 15 companies, the department assessed 5 as representing a high financial viability risk, 4 as representing a medium risk, and 6 as representing a low risk.

Risk controls and monitoring procedures added

4.58 We found that Natural Resources Canada did not reject any submission on the grounds that the company represented a high financial viability risk. This was because the department had a risk mitigation strategy consisting of accepting and accounting for possible losses. For example, the department planned for a 25% default rate on repayable contributions under the Onshore Program. If default occurred, the department would proceed in accordance with the requirements in the *Financial Administration Act*. In this way, the department accepted the risk that companies would default on repayments because of insolvency.

4.59 We found that the department followed the Treasury Board Directive on Transfer Payments by adding a risk mitigation control as well as monitoring procedures for projects funded by the Onshore Program. To mitigate the risk of loss in case of default on repayments, all contribution agreements for the Onshore Program included a clause specifying that 10% of the funding would be held back. Half of the holdback was to be released when the department received confirmation that a project was completed. The other half was to be released when the department confirmed the emission reductions achieved during the year after the project was completed. This financial control was also meant to help ensure that project outcomes would be achieved.

4.60 Department officials noted that it had required a 10% holdback in all contribution agreements and did not increase the percentage for higher-risk companies. They stated that imposing more stringent controls on higher-risk companies would not make sense because the companies had already been facing the impact of low oil prices in 2020 and were also facing the impact of the COVID-19 pandemic. Furthermore, officials stated that the Onshore Program was intended to provide financial support to struggling oil and gas companies and to help them comply with the federal methane regulations or their provincial equivalents. In these circumstances, department officials felt that additional controls would be counterproductive.

4.61 We also found that the department included risk monitoring procedures in each contribution agreement. These procedures required the following documentation:

- annual progress reports summarizing project activities during the implementation period
- a final narrative report describing how the project objectives were achieved, to ensure that funding was used as intended
- annual outcome reports after the project was completed, to provide information on the reductions in greenhouse gas emissions

that were achieved through the project and on the project's key performance indicators

- audited financial statements during and after project implementation

4.62 For companies assessed as representing a higher financial risk, additional monitoring procedures were required—for example, monthly calls with company and department officials, or semi-annual instead of annual reporting. This approach was consistent with the Treasury Board Directive on Transfer Payments and the department's assessment framework.

Expected reductions by Natural Resources Canada for the first group of projects were not reliable

What we found

4.63 We found that Natural Resources Canada's expectations for the 40 projects it had funded in the first intake period of the Onshore Program were overestimated. The department expected these projects to reduce greenhouse gas emissions by 3.1 Mt CO₂ eq in the first year following their implementation. We found that this expected result was an overestimate and not reliable because the department did not require companies to be conservative in their estimates of reductions in greenhouse gas emissions. We noted that for 27 projects, the funding the companies received would result in or accommodate an increase in oil or gas production. Those companies' estimates of emission reductions did not take into account potential increases in production and related emissions. For these 27 projects funded by the Onshore Program, the production increases would have lessened or possibly outweighed any reductions in emissions that the projects achieved.

4.64 The analysis supporting this finding discusses the following topic:

- Overestimate of expected project results

Why this finding matters

4.65 This finding matters because overestimating results from the first group of projects gives an inaccurate assessment of progress under the Onshore Program, which puts at risk the achievement of the program's target. More broadly, if programs funding reductions in greenhouse gas emissions overestimate expected results, the funding provided could lead to a smaller amount of reductions than expected or even to an increase in emissions. This could be an inefficient use of taxpayers' money and could lessen Canada's chances of meeting its climate change commitments.

Context

4.66 The Onshore Program's first submission intake period closed on 30 November 2020. In April 2021, Natural Resources Canada announced that it had funded 40 projects from 15 companies, with a total value of \$71.5 million, and that these projects were expected to reduce emissions of greenhouse gases by 3.1 Mt CO₂ eq in the first year following their implementation.

4.67 Mitigation actions such as projects funded by the Onshore Program are subject to the key greenhouse gas accounting principles, important concepts, and general approach for estimating reductions in greenhouse gas emissions (see exhibits 4.2 and 4.3, and paragraph 4.30). When combining individual estimates of the reductions in greenhouse gas emissions expected from different projects, it is essential that these individual estimates of reductions be prepared using comparable data, methods, criteria, and assumptions.

Recommendation

4.68 Our recommendation in this area of examination appears at paragraph 4.76.

Analysis to support this finding

Overestimate of expected project results

4.69 We found several shortcomings in Natural Resources Canada's estimate that the first 40 projects funded by the Onshore Program would achieve reductions in annual greenhouse gas emissions totalling 3.1 Mt CO₂ eq after 1 year of implementing the projects.

4.70 The program's guidelines did not require companies to prepare emission reduction estimates in accordance with the key principles for greenhouse gas accounting or a common approach based on them. Preparing the estimates in this way would have ensured their consistency (and therefore comparability) and their additionality (that is, the reductions were attributable to the funding and would not have happened without it). The department acknowledged that the Onshore Program guidelines did not require companies to ensure additionality.

4.71 The department did not require submissions to follow the principle of completeness. Instead, it required only that companies describe how they estimated pre-project baseline emissions from sources of venting. This meant that the department limited the assessment of each project's impact on greenhouse gas emissions to direct and immediate effects. It did not require a company to assess emissions that could be affected indirectly by the proposed project, with the aim of determining their significance and their possible impact on

emission reductions. In our view, the estimates of expected emission reductions for the 40 projects in the first intake period of the Onshore Program did not appropriately reflect the greenhouse gas effects of the projects.

4.72 We found that for 27 of the 40 projects, the companies had indicated in their submissions that the new infrastructure they would build with the Onshore Program funding to eliminate venting would accommodate current and future production increases. Submissions for 8 projects had direct statements about increasing production, including projects with specifics about the number of new wells and estimates of the increase in production volume, and submissions for 19 projects had indirect statements about the project being designed to accommodate an increase in future oil or gas production. For example, one company stated that upon program funding, it would drill new wells and reopen existing wells, significantly boosting oil and gas production. This meant that the funding would support the companies' capacity to increase production, which would lead to increased emissions. Another company stated that its venting elimination project would allow for potential future expansion. The department used forecasted production increases to account for the amount of vented methane that would be avoided by the projects. However, it did not account for the emissions attributable to increases in production accommodated by the projects, as these were outside the scope of the individual source of venting chosen by the department and beyond the scope of the department's greenhouse gas assessment.

4.73 According to the greenhouse gas accounting principles and standards, production increases should have been factored into the assessment of emissions for these projects. If it was not possible to factor in these emissions, the department should have, at a minimum, disclosed that these projects could result in increased emissions. If the increases in production and related emissions had been considered, they would have lessened or even outweighed the emission reductions expected from these projects. The department's figure of 3.1 Mt CO₂ eq in expected annual emission reductions from projects in the first intake period was an overestimate because it did not take full account of how each project would affect oil and gas production levels.

4.74 There was another indication that the 3.1 Mt CO₂ eq of annual emission reductions from the 40 projects funded was an overestimate: According to the department, the Onshore Program would come close to reaching its best-case-scenario target of 3.7 Mt CO₂ eq in emission reductions (see paragraph 4.33, last bullet) with the participation of only 15 out of the 610 companies in Canada eligible for the program, implementing a total of 40 projects for a total of only \$71.5 million.

4.75 Finally, across all 40 projects, the department did not require that an identical period be selected for measuring baseline emissions and the same period be selected for estimating project emissions. This

resulted in 40 estimates of expected reductions covering different dates and time periods. Given these inconsistencies, it was inappropriate to add up the estimated emission reductions of individual projects. We found that because the department did not follow the standards and principles, the total obtained—emission reductions of 3.1 Mt CO₂ eq, a year after the implementation of each project—was not reliable.

4.76 **Recommendation.** To help Canada achieve its national targets for the reduction of greenhouse gas emissions, when funding projects intended to reduce greenhouse gas emissions, Natural Resources Canada should ensure that applicants have submitted reliable estimates of expected emission reductions. Accordingly, the department should require applicants to prepare estimates of their projects' expected emission reductions in accordance with the greenhouse gas accounting principles and the requirements of the International Organization for Standardization standard on greenhouse gases (ISO 14064-2) or another standard or protocol based on it. When assessing or validating these estimates, the department should ensure that each successful applicant does the following:

- In its greenhouse gas assessment scope, include all the significant sources and sinks affected directly and indirectly by the project, and disclose and justify any exceptions. This is to ensure that the estimate of emission reductions is complete and accurate.
- Develop up-to-date baseline and project scenarios and emissions (projections) for the period of project implementation. This ensures that the baseline scenario represents the most likely course of events in the absence of a particular project. It also ensures that the project scenario represents the most likely course of events by implementing the project. Finally, this approach ensures that subtracting project scenario emissions from baseline scenario emissions yields a figure that accurately represents reductions attributable to the project.
- Analyze additionality, including the impact of offset credits, to confirm that the estimated emission reductions are additional to what would have happened in the absence of the project.
- Document its approach, assumptions, and methods, including the model or models used, data sources, calculations, and uncertainties, and disclose and justify any deviation from the ISO 14064-2 standard or another chosen standard based on it.

The department's response. *Partially agreed. Natural Resources Canada agrees that there are certain types of programs whereby it would be appropriate for applicants to prepare their own estimates of their projects' expected emission reductions, and that applicants should provide complete and accurate information required for the department to conduct a robust assessment of projected reductions.*

In the case of the Emissions Reduction Fund program, the program decided in advance which source-based activities were eligible to receive funding. It was also a program decision to require applicants to instead provide the program with class 3 cost estimates, an engineered certified baseline assessment, and accurate, detailed vented gas chemistry analysis in order to be eligible for funding. The program then used this information to calculate emission reductions from the proposed projects. This decision was to reduce the burden of the applicants (most of which are small and medium-sized enterprises) and to ensure consistency across companies, reducing the level of uncertainty related to emission reductions resulting from the program.

The department agrees that reliable estimates of expected emission reductions are required to ensure their accuracy, and that estimates should be prepared in accordance with the principles of the International Organization for Standardization standard on greenhouse gases (ISO 14064-2) or other acceptable standards (for example, The GHG Protocol for Project Accounting from the World Resources Institute).

Given that this was a program with a focus on methane, the department applied an emissions source-based boundary for assessing greenhouse gas emission reductions and considered only sources and sinks directly or indirectly associated with lowering or eliminating intentional methane venting associated with Emissions Reduction Fund projects. The source-based approach applied by the department is consistent with Environment and Climate Change Canada's approach for estimating greenhouse gas reductions from sources targeted by the Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector). This approach is aligned with the guidelines and principles of the International Organization for Standardization and the World Resources Institute.

The department will require relevant and complete information from applicants that align with the program objectives and will consider applying the recommendations of the Commissioner of the Environment and Sustainable Development, where appropriate.

Natural Resources Canada did not ensure that funded projects provided value for money

What we found

4.77 We found that in its evaluation of submissions to the Onshore Program of the Emissions Reduction Fund, Natural Resources Canada did not fully assess value for money. Although the department evaluated the relevance of a company's proposed project, it did not fully assess the performance of the project. The department had planned to assess a project's affordability compared with that of other applicant projects, but it did not implement this plan because the program received a lower number of applications than expected during the first intake period and because of the need for a rapid implementation of the COVID-19 economic recovery measures. We also found that the department did not determine the minimum funding amount that a project might require to achieve the Onshore Program's objectives. Instead, according to department officials, the department determined that the maximum funding was required for all 40 projects funded in the program's first intake period.

4.78 The analysis supporting this finding discusses the following topics:

- Interest-free loans not provided on the basis of value for money
- Maximum funding for all projects

Why this finding matters

4.79 This finding matters because a subsidy for oil and gas companies needs to ensure value for money in securing a benefit such as reductions in emissions. If the subsidy does not do this, it is not fully achieving the Government of Canada's priority of reducing greenhouse gas emissions. Also, it could be an inefficient fossil fuel subsidy. Fossil fuel subsidies can lead to increased levels of production and corresponding greenhouse gas emissions, which undermines efforts to address climate change.

Context

4.80 According to the World Trade Organization, the International Energy Agency, the International Monetary Fund, and the World Bank, if a government extends financial support to the oil and gas sector within its jurisdiction, the support constitutes a fossil fuel subsidy if it

- confers a benefit
- reduces the cost of production
- increases profitability above what it otherwise would be

4.81 In September 2009, at the Group of 20 (G20) leaders' summit, leaders from the world's 20 major economies committed to "phase out and rationalize over the medium term inefficient fossil fuel subsidies while providing targeted support for the poorest." The G20 leaders did not define an inefficient subsidy. However, in the Canadian context, if a fossil fuel subsidy does not demonstrate value for money in securing benefits by meeting its objectives, in particular reducing greenhouse gas emissions, it could be considered inefficient.

Recommendations

4.82 Our recommendations in this area of examination appear at paragraphs 4.88 and 4.93.

Analysis to support this finding

Interest-free loans not provided on the basis of value for money

4.83 We found that Natural Resources Canada did not fully assess value for money of contribution agreements under the Onshore Program of the Emissions Reduction Fund. Although the department evaluated the relevance of projects in compliance with the Treasury Board Directive on Transfer Payments (see paragraph 4.87), it did not fully assess their performance.

4.84 In terms of performance, although the department assessed whether eligible projects could achieve greenhouse gas emission reductions consistent with the program objective, it did not determine whether these projects would use taxpayer resources well. Also, the department did not fully assess the performance of contribution agreements for any other announced benefits of the Onshore Program—specifically, the stated rationales of helping oil and gas companies maintain employment, attract investments, and increase global competitiveness during a period of economic turmoil.

4.85 The department did not define thresholds or criteria for evaluating a project's expected performance in terms of producing outputs affordably. The department stated that it did not define any upper threshold for **cost per tonne** or any other cut-off limit above which it would not agree to fund a project. The department explained that setting such a limit would have been inconsistent with its rationale of assisting oil and gas companies by providing financial support during an economic crisis. The department had a framework for assessing the financial viability of companies. However, there were no criteria in place

Cost per tonne—The cost of a project's reductions in annual greenhouse gas emissions, expressed in present dollars per tonne of carbon dioxide equivalent.

Source: Technical Assessment Guide for Emissions Reduction Fund, Onshore Program, Natural Resources Canada

to determine how each project could assist companies, nor was there a framework to favour companies with higher financial risk.

4.86 The department had planned to assess a project's affordability compared with that of other applicants' projects on the basis of the number of successful projects, the results of the evaluation of proposals, and the total funding available. However, because the program received a lower number of applications than expected and because of the need for a rapid implementation of the COVID-19 economic recovery measures, the department provided full funding for all 15 contribution agreements issued in the first intake period, involving 40 projects. Consequently, the department did not combine the results of its evaluation of proposals and any other possible metrics to determine project performance and affordability. It is possible that projects fully funded in the first intake period would not have received funding if there had been a higher number of applications to the program. At the end of program implementation, the department expected to fund between 400 and 500 projects under the Onshore Program, implying that the initial assumption that almost 610 companies would receive funding was too ambitious (see paragraph 4.33).

4.87 At the same time, the department had a framework in place for determining the relevance of proposed projects (for example, assessing if projects will lower or fully eliminate emissions associated with intentional venting). The framework helped identify whether projects addressed a government priority and the needs of Canadians, in compliance with the Treasury Board directive. The department applied the framework consistently in its assessment of projects.

4.88 **Recommendation.** In its evaluation of applications for any transfer payment program that aims to reduce greenhouse gas emissions, Natural Resources Canada should define criteria and thresholds for assessing each project's expected performance in terms of value for money in reducing those emissions, even in the context of a low number of applications.

The department's response. *Agreed. Natural Resources Canada agrees that defining criteria and thresholds for assessing value for money in reducing emissions is important for each project, even in a low-uptake context.*

The department agrees that under normal economic circumstances (that is, not during a global pandemic), determining minimum funding for individual projects to achieve expected emission reductions is appropriate. To support companies that were struggling, the department strategically chose not to apply a threshold for minimum funding; it chose instead to apply a cost per tonne on a sliding scale to evaluate projects and determine non-repayable funding amounts. This allowed the program

to achieve both the economic and environmental objectives of the program, and resulting projects have some of the lowest costs per tonne in the industry compared with other decarbonization pathways.

The department will consider thresholds for assessing value for money when implementing future greenhouse gas reducing programs.

Maximum funding for all projects

4.89 We found that Natural Resources Canada decided to award the maximum funding of eligible costs to all approved projects, for a total of \$71.5 million. It did this because, in the department's view, the lower-than-expected number of applications to the program eliminated the need for a case-by-case approach to determine funding levels. The department did not have a complete framework for assessing the value for money of each project, as required by the Treasury Board Directive on Transfer Payments. As a result, the department had no basis on which to determine the minimum funding level required for a project to achieve its expected reductions in greenhouse gas emissions.

4.90 According to department officials, if a submission met the eligibility criteria, the proposed projects received the full amount of funding requested, in accordance with the program's rationale of assisting oil and gas companies. Officials also noted that the program aimed to improve the competitiveness of the sector during the COVID-19 pandemic, when the industry was already in a period of economic turmoil. We observed that at the end of the period covered by the audit, a total of 38 companies had applied to the program over the 2 intake periods, compared with the goal of at least 122 companies applying.

4.91 On the other hand, the department effectively used cost per tonne to adjust the non-repayable portion of a loan for projects that proposed to fully eliminate venting of methane and other greenhouse gases. Projects with lower costs per tonne were eligible to receive more money in non-repayable grants, up to a maximum of 50% of project costs. Overall, up to 25% of the contribution funding under the Onshore Program could be non-repayable. Companies were expected to repay a large portion of the program's funding contributions, although without interest. Of the \$71.5 million awarded to 15 companies in the first intake period, \$14.1 million was non-repayable funding.

4.92 We found that the department complied with the part of the Treasury Board directive that requires imposing a **stacking limit** and a maximum funding level. The department decided to set the stacking limit

Stacking limit—The maximum level of total Canadian government funding authorized by the terms and conditions for a transfer payment program for any one activity, initiative, or project of a recipient.

Source: Directive on Transfer Payments, Treasury Board

at 90% of total eligible costs. It also decided that the maximum funding level would be 75% of project costs, up to a maximum of \$50 million.

4.93 **Recommendation.** In determining the funding level of applications for projects that aim to reduce greenhouse gas emissions, Natural Resources Canada should assess the minimum funding required for each project to achieve the expected reductions in emissions, rather than providing maximum funding to every eligible project.

The department's response. *Agreed. Natural Resources Canada agrees that funding provided to support emission reduction projects should be grounded in financial need. In the case of the Emissions Reduction Fund, the need was determined upfront, similar to other COVID-19 economic response measures.*

The department recognizes that under normal economic circumstances, assessing projects individually to determine minimum funding requirements to achieve expected emission reductions is important. Given the Emissions Reduction Fund was launched to support Canada's struggling oil and gas industry and keep workers employed in the context of a global pandemic, applying a threshold or criteria to lower the final funding may have prevented companies from receiving the financial stimulus, which may have resulted in fewer methane emission reductions. The department thus determined the maximum allowable funding to recipient companies was required if both the economic and environmental objectives of this stimulus program were to be achieved.

The activities allowable under the program were able to pull forward projects that will result in a 3.1 Mt CO₂ eq reduction of emissions from those sources. Of those reductions, 97% are from projects that eliminate routine venting or flaring and are incremental to what will be achieved through current methane regulations for those sources. These reductions are being achieved at some of the lowest costs in the industry, when compared with other decarbonization pathways.

The department will assess the minimum funding required to achieve the expected emission reductions in future greenhouse gas reducing programs.

Conclusion

4.94 We concluded that Natural Resources Canada did not design and implement the Onshore Program of the Emissions Reduction Fund to achieve greenhouse gas emission reductions in the oil and gas sector in a manner that would ensure value for money for contributions.

4.95 The department did not design the Onshore Program of the Emissions Reduction Fund to ensure that the expected reductions of greenhouse gas emissions in the oil and gas sector after 2023 would

be credible and sustainable. The department did not require a funded company to ensure the additionality of the reductions in emissions expected from a project (that is, the reductions were attributable to the funding and would not have happened without it). Furthermore, a company intending to increase oil and gas production as a result of program funding was not required to account for the related increase in emissions. This could lead to a net increase in emissions for some projects.

4.96 Natural Resources Canada conducted due diligence financial assessments of each applicant's project submission. However, it did not fully conduct due diligence technical assessments of the projects proposed, including the assessment of how each contribution would ensure value for money in reducing emissions or in achieving advertised economic benefits such as maintaining employment. This was because the department prioritized financial assistance to oil and gas companies by providing maximum funding during the pandemic. Although the department ensured the relevance of projects, it did not assess their performance to determine the minimum funding amount that a project might require to achieve the program's objectives.

About the Audit

This independent assurance report was prepared by the Office of the Auditor General of Canada on the Onshore Program of Natural Resources Canada's Emissions Reduction Fund. Our responsibility was to provide objective information, advice, and assurance to assist Parliament in its scrutiny of the government's management of resources and programs, and to conclude on whether the Emissions Reduction Fund 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 Natural Resources Canada designed and implemented the Onshore Program of the Emissions Reduction Fund to achieve greenhouse gas emission reductions in the oil and gas sector in a manner that ensured value for money for contributions.

Scope and approach

This audit focused on the achievement of the first objective of the Onshore Program: supporting the oil and gas sector's companies to make the necessary investments to reduce greenhouse gas emissions. We also examined the aspects of financial risk management and ensuring value for money for transfer payments.

The scope of our audit included the Clean Fuels Branch of the Low Carbon Energy Sector and the Strategic Petroleum Policy and Investment Office within Natural Resources Canada.

For the audit, we examined the design and implementation of the Onshore Program of Natural Resources Canada’s Emissions Reduction Fund. We examined documentation provided by departmental staff, as well as information obtained during interviews of staff members.

We examined the Onshore Program’s applicant submissions and related assessments, successful and unsuccessful, and the associated final contribution agreements for the first intake period of the program.

We did not review the applications for the second and third intake periods because the contribution agreements were signed after our audit period.

We interviewed staff, as third parties, from Environment and Climate Change Canada, who were consulted during the development of the Onshore Program.

Criteria

Criteria	Sources
<p>We used the following criteria to determine whether Natural Resources Canada designed and implemented the Onshore Program of the Emissions Reduction Fund to achieve greenhouse gas emission reductions in the oil and gas sector in a manner that ensured value for money for contributions:</p>	
<p>Criterion 1: Greenhouse gas emission reductions</p> <p>Natural Resources Canada has designed the Onshore Program to ensure that the anticipated greenhouse gas emission reductions in the oil and gas sector after 2023 are credible and sustainable. Credible and sustainable reductions are based on information that is</p> <ul style="list-style-type: none"> • relevant • complete • consistent • transparent • accurate • conservative 	<ul style="list-style-type: none"> • “Prime Minister announces new support to protect Canadian jobs,” News Release, Office of the Prime Minister of Canada, 17 April 2020 • Emissions Reduction Fund—Greenhouse Gas Emission Reductions in Canada’s Onshore Oil and Gas Sector, Applicant’s Guide, Natural Resources Canada • Emissions Reduction Fund—Onshore Program, Natural Resources Canada, 14 January 2021 (date on website) • Canada’s Nationally Determined Contribution under the Paris Agreement, submitted to the United Nations Framework Convention on Climate Change, 2021 • Transforming our World: The 2030 Agenda for Sustainable Development, United Nations, 2015 • 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Intergovernmental Panel on Climate Change, 2006 • Guiding Principles for Modalities, Procedures and Guidelines of the Enhanced Transparency Framework under the Paris Agreement; United Nations Framework Convention on Climate Change; 2019 • The GHG Protocol for Project Accounting, World Resources Institute and World Business Council for Sustainable Development, 2005

Criteria	Sources
<p>We used the following criteria to determine whether Natural Resources Canada designed and implemented the Onshore Program of the Emissions Reduction Fund to achieve greenhouse gas emission reductions in the oil and gas sector in a manner that ensured value for money for contributions:</p>	
	<ul style="list-style-type: none"> • Greenhouse Gas Protocol: Policy and Action Standard, World Resources Institute, 2014 • ISO 14064-2:2019 Greenhouse Gases—Part 2, International Organization for Standardization, 2019
<p>Criterion 2: Value for money for contributions</p> <p>Natural Resources Canada has conducted due diligence technical and financial assessments of each applicant’s project submission, including the assessment of how each contribution would represent value for money.</p>	<ul style="list-style-type: none"> • Policy on Transfer Payments, Treasury Board • Directive on Transfer Payments, Treasury Board • Guideline on Performance Measurement Strategy under the Policy on Transfer Payments, Treasury Board of Canada Secretariat

Period covered by the audit

The audit covered the period from 1 January 2020 to 30 June 2021. This is the period to which the audit conclusion applies.

Date of the report

We obtained sufficient and appropriate audit evidence on which to base our conclusion on 20 August 2021, in Ottawa, Canada.

Audit team

- Principal: Jim McKenzie
- Director: Sylvie Marchand
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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, and the numbers in parentheses indicate the location of the related discussion.

Recommendation	Response
Estimating the emission reductions achievable under the Onshore Program	
<p>4.35 To help Canada achieve its national targets for the reduction of greenhouse gas emissions, when developing any policy, program, or measure that aims to reduce emissions, Natural Resources Canada should ensure that its estimates of expected reductions are reliable. Accordingly, the department should prepare estimates of the program’s expected emission reductions in accordance with the greenhouse gas accounting principles and the requirements of the International Organization for Standardization standard on greenhouse gases (ISO 14064-2) or another standard or protocol based on ISO 14064. The department should do the following:</p> <ul style="list-style-type: none"> • In its assessment of how a program will affect greenhouse gases, include all the significant sources and sinks affected directly and indirectly by the program and disclose and justify any exceptions. This is to ensure that the estimate of emission reductions is complete and accurate. • Develop up-to-date baseline and mitigation action scenarios and emissions for the period of implementation. This includes ensuring that the baseline and mitigation action scenarios represent the most likely course of events both without and with the particular program concerned. This approach ensures that mitigation action scenario emissions minus baseline scenario emissions represent reductions attributable to the program. • Analyze additionality, including the impact of offset credits, to confirm that the estimated emission reductions are additional to what would have happened in the absence of the program. 	<p>The department’s response. Agreed. Natural Resources Canada recognizes the importance of following international best practices, including the World Resources Institute’s greenhouse gas accounting and reporting principles and the International Organization for Standardization ISO 14064-2 Specification With Guidance at the Project Level for Quantification, Monitoring and Reporting of Greenhouse Gas Emission Reductions or Removal Enhancements, not only to shape the quality of the program design, but also to be able to allow comparisons of results to similarly designed programs.</p> <p>Establishing the appropriate boundary conditions is critical to the design of a program and all other design elements. However, while some programs are best designed with source-based boundary conditions, such as the Emissions Reduction Fund and the <i>Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)</i>, others are appropriate for facility-based or project-based conditions. The department also recognizes the importance of assessing the boundary conditions as designed for a program, in order to render a credible comparison and assessment.</p> <p>The department will</p> <ul style="list-style-type: none"> • apply the assessment boundary it judges appropriate (source-based or facility-based) in the design and implementation of future programs, on the basis of the decision-making needs of the project • follow ISO 14064-2 standards and other good-practice guidance as appropriate, with consideration to the recommendations from the Commissioner of the Environment and Sustainable Development as applicable to the boundary conditions selected in the design and implementation of future programs that include a component for reducing greenhouse gas emissions

Recommendation	Response
<p>• Document its approach, assumptions, and methods, including the model or models used, data sources, calculations, and uncertainties, and disclose and justify any deviation from the ISO 14064-2 standard or another chosen standard based on it.</p> <p>(4.32–4.34)</p> <p>4.39 When presenting a target for reductions in greenhouse gas emissions that a program is expected to achieve in a future target year, Natural Resources Canada should state the additional annual reductions it expects the program to achieve in that target year against the projected baseline scenario emissions level in the same year.</p> <p>(4.36–4.38)</p>	<p>The department’s response. Partially agreed. Natural Resources Canada followed and complied with the Treasury Board of Canada Secretariat’s Guidance for Drafters of Treasury Board Submissions for establishing performance indicators and baselines as required for new programs. As the Onshore Program was new and did not align with existing programming, there was no existing baseline, which therefore resulted in a zero baseline.</p> <p>The medium-term indicator for the Onshore Program is greenhouse gas reductions from projects funded by the Emissions Reduction Fund (ERF). To avoid including reductions that may occur before ERF-funded projects or concurrently with these projects, the department established this indicator to attribute results to projects completed with ERF funding. The methodology to report on the performance indicator will require the department to aggregate all reductions from ERF-funded projects to report a total number of reductions from all ERF-funded projects, with the target of reducing a total of 5.1 to 8.8 megatonnes of carbon dioxide equivalent (Mt CO₂e) from ERF-funded projects.</p> <p>The department acknowledges the oversight in communicating the baseline, and it should have been established at zero. Adjusting the baseline is important, as it will allow for an assessment of the Onshore Program to be conducted once the program has concluded, to validate the accuracy of the department’s estimates in establishing reduction targets.</p> <p>The department will</p> <ul style="list-style-type: none"> • adjust the baseline from 172.6 Mt CO₂e (2018 National Inventory Report data) to 0 Mt CO₂e (new program) • adjust the baseline methodology that references the National Inventory Report

Recommendation	Response
<p>4.46 Natural Resources Canada should explain how a program will provide announced benefits and meet the related objectives using performance or outcome indicators that are specific to the objectives of the program. It should evaluate and monitor progress against the objectives using the relevant performance or outcome indicators. For example, for the third intake period of the Onshore Program, the department should do so for benefits such as helping oil and gas companies maintain jobs, increasing global competitiveness, and contributing to the United Nations' Sustainable Development Goals 13 and 9 as well as to gender-based analysis plus.</p> <p>(4.41–4.45)</p>	<ul style="list-style-type: none"> • consider the recommendations from the Commissioner of the Environment and Sustainable Development, as applicable, to the selection of boundary conditions and baselines of future programs that include a component for reducing greenhouse gas emissions <p>The department's response. Agreed. Natural Resources Canada establishes performance measurement requirements for all programs to support data collection and reporting on the results of the department meeting program objectives over the short, medium, and long term. While utilizing Departmental Results Framework and program inventory information is a best practice for the indicators, objectives, and architecture that are relevant, some programs may require custom performance indicators to measure tangible results of a unique program. For example, the research, development, and deployment stream of the Emissions Reduction Fund (ERF) aligned with the Departmental Results Framework structure, as this stream is an existing business line within the department, and aligned with an existing program inventory with common outcomes, indicators, targets, and baselines. However, the unique design and delivery of the Onshore Program required customized indicators specific only to the onshore deployment activities, as new functions of its standard business lines. These custom indicators allow the department the ability to track and measure the actual results of ERF-funded projects over the short, medium, and long term, on the basis of the objectives and outcomes identified by the government.</p> <p>The department will provide annual and periodic reporting on greenhouse gas emission reductions and jobs (direct and indirect) from ERF-funded projects, as new information becomes available.</p>

Recommendation	Response
<p>Funding projects to achieve the Onshore Program’s expected emission reductions</p>	
<p>4.76 To help Canada achieve its national targets for the reduction of greenhouse gas emissions, when funding projects intended to reduce greenhouse gas emissions, Natural Resources Canada should ensure that applicants have submitted reliable estimates of expected emission reductions. Accordingly, the department should require applicants to prepare estimates of their projects’ expected emission reductions in accordance with the greenhouse gas accounting principles and the requirements of the International Organization for Standardization standard on greenhouse gases (ISO 14064-2) or another standard or protocol based on it. When assessing or validating these estimates, the department should ensure that each successful applicant does the following:</p> <ul style="list-style-type: none"> • In its greenhouse gas assessment scope, include all the significant sources and sinks affected directly and indirectly by the project, and disclose and justify any exceptions. This is to ensure that the estimate of emission reductions is complete and accurate. • Develop up-to-date baseline and project scenarios and emissions (projections) for the period of project implementation. This ensures that the baseline scenario represents the most likely course of events in the absence of a particular project. It also ensures that the project scenario represents the most likely course of events by implementing the project. Finally, this approach ensures that subtracting project scenario emissions from baseline scenario emissions yields a figure that accurately represents reductions attributable to the project. • Analyze additionality, including the impact of offset credits, to confirm that the estimated emission reductions are additional to what would have happened in the absence of the project. • Document its approach, assumptions, and methods, including the model or models used, data sources, calculations, and uncertainties, and disclose and justify any deviation from the ISO 14064-2 standard or another chosen standard based on it. <p>(4.69–4.75)</p>	<p>The department’s response. Partially agreed. Natural Resources Canada agrees that there are certain types of programs whereby it would be appropriate for applicants to prepare their own estimates of their projects’ expected emission reductions, and that applicants should provide complete and accurate information required for the department to conduct a robust assessment of projected reductions.</p> <p>In the case of the Emissions Reduction Fund program, the program decided in advance which source-based activities were eligible to receive funding. It was also a program decision to require applicants to instead provide the program with class 3 cost estimates, an engineered certified baseline assessment, and accurate, detailed vented gas chemistry analysis in order to be eligible for funding. The program then used this information to calculate emission reductions from the proposed projects. This decision was to reduce the burden of the applicants (most of which are small and medium-sized enterprises) and to ensure consistency across companies, reducing the level of uncertainty related to emission reductions resulting from the program.</p> <p>The department agrees that reliable estimates of expected emission reductions are required to ensure their accuracy, and that estimates should be prepared in accordance with the principles of the International Organization for Standardization standard on greenhouse gases (ISO 14064-2) or other acceptable standards (for example, The GHG Protocol for Project Accounting from the World Resources Institute).</p> <p>Given that this was a program with a focus on methane, the department applied an emissions source-based boundary for assessing greenhouse gas emission reductions and considered only sources and sinks directly or indirectly associated with lowering or eliminating intentional methane venting associated with Emissions Reduction Fund projects. The source-based approach applied by the department is consistent with Environment and Climate Change Canada’s approach for estimating greenhouse gas reductions from sources targeted by the <i>Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)</i>. This</p>

Recommendation	Response
<p>4.88 In its evaluation of applications for any transfer payment program that aims to reduce greenhouse gas emissions, Natural Resources Canada should define criteria and thresholds for assessing each project’s expected performance in terms of value for money in reducing those emissions, even in the context of a low number of applications.</p> <p>(4.83–4.87)</p>	<p>approach is aligned with the guidelines and principles of the International Organization for Standardization and the World Resources Institute.</p> <p>The department will require relevant and complete information from applicants that align with the program objectives and will consider applying the recommendations of the Commissioner of the Environment and Sustainable Development, where appropriate.</p> <p>The department’s response. Agreed. Natural Resources Canada agrees that defining criteria and thresholds for assessing value for money in reducing emissions is important for each project, even in a low-uptake context.</p> <p>The department agrees that under normal economic circumstances (that is, not during a global pandemic), determining minimum funding for individual projects to achieve expected emission reductions is appropriate. To support companies that were struggling, the department strategically chose not to apply a threshold for minimum funding; it chose instead to apply a cost per tonne on a sliding scale to evaluate projects and determine non-repayable funding amounts. This allowed the program to achieve both the economic and environmental objectives of the program, and resulting projects have some of the lowest costs per tonne in the industry compared with other decarbonization pathways.</p> <p>The department will consider thresholds for assessing value for money when implementing future greenhouse gas reducing programs.</p>
<p>4.93 In determining the funding level of applications for projects that aim to reduce greenhouse gas emissions, Natural Resources Canada should assess the minimum funding required for each project to achieve the expected reductions in emissions, rather than providing maximum funding to every eligible project.</p> <p>(4.89–4.92)</p>	<p>The department’s response. Agreed. Natural Resources Canada agrees that funding provided to support emission reduction projects should be grounded in financial need. In the case of the Emissions Reduction Fund, the need was determined upfront, similar to other COVID-19 economic response measures.</p>

Recommendation	Response
	<p>The department recognizes that under normal economic circumstances, assessing projects individually to determine minimum funding requirements to achieve expected emission reductions is important. Given the Emissions Reduction Fund was launched to support Canada’s struggling oil and gas industry and keep workers employed in the context of a global pandemic, applying a threshold or criteria to lower the final funding may have prevented companies from receiving the financial stimulus, which may have resulted in fewer methane emission reductions. The department thus determined the maximum allowable funding to recipient companies was required if both the economic and environmental objectives of this stimulus program were to be achieved.</p> <p>The activities allowable under the program were able to pull forward projects that will result in a 3.1 Mt CO₂ eq reduction of emissions from those sources. Of those reductions, 97% are from projects that eliminate routine venting or flaring and are incremental to what will be achieved through current methane regulations for those sources. These reductions are being achieved at some of the lowest costs in the industry, when compared with other decarbonization pathways.</p> <p>The department will assess the minimum funding required to achieve the expected emission reductions in future greenhouse gas reducing programs.</p>

