OFFICE OF THE PARLIAMENTARY BUDGET OFFICER
BUREAU DU DIRECTEUR PARLEMENTAIRE DU BUDGET

Legislative Costing Note

Publication Date: 2021-05-26

Short Title: Emissions Reduction Fund – Onshore

Description: Introducing financial support for oil and gas companies to reduce methane emissions.

The Emissions Reduction Fund (ERF) – Onshore will offer up to $675 million in contributions to support capital projects that lower or eliminate routine venting of methane oil and gas operations. The overall ERF includes a further $75 million for offshore oil and gas operations, which is outside the scope of the analysis.

Project proponents apply for funding in one of two intake periods in 2021. If these two intake periods are not fully subscribed, there may be a third intake period. Contribution agreements with successful applicants will fund up to 75 per cent of the eligible supported costs.

Contributions will be fully repayable by default, though recipients that will eliminate (that is, not merely lower) routine venting may opt for a partially repayable contribution. Recipients with lower marginal abatement costs for their projects will be able to make more of their contribution non-repayable, as described in the table below.

Cost per tonne of CO_2e GHG Reductions	**Non-Repayable Portion of ERF Program Funding**
$20 or less	50%
$21 - $50	35%
$51 - $100	20%
$100 or more	10%

Funding is intended to be allocated by March 31, 2022. Over the subsequent five years, recipients will be required to repay their repayable contributions, on a quarterly basis, according to a repayment plan of their choice. The three repayment plans are described in the table below.

Repayment Plan	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**
5-year equal annual amounts	20.0%	20.0%	20.0%	20.0%	20.0%
5-year equal increments with an initial payment of 5% of total repayable in Year 1	5.0%	12.5%	20.0%	27.5%	35.0%
3-year equal increments with an initial payment of 10% of total repayable in Year 3	0.0%	0.0%	10.0%	33.3%	56.7%

Recipients that adhere to the repayment schedule will have no interest charged to their repayable contributions. In the case of late payment or underpayment, the Government of Canada could charge an interest rate as defined in the *Interest and Administrative Charges Regulations*, in effect on the due date, plus 300 basis points, compounded monthly.

Data Sources:

Variable	Source
Total available funds	NRCan (ERF – Onshore Applicant's Guide)
Emissions (CO_2e) reduced, by project, Intake Cohort 1	NRCan (IR0577)
Cost per tonne of CO_2e reduced, by project, Intake Cohort 1	NRCan (IR0577)
Portion of contributions eligible to be non-repayable, by cost per tonne of CO_2e reduced	NRCan (ERF – Onshore Applicant's Guide)
Total contributions, by recipient, Intake Cohort 1	NRCan (IR0577)
Total contributions, Intake Cohort 1	NRCan (IR0577)
Start and end dates, by project, Intake Cohort 1	NRCan (IR0577)
Total contributions, Intake Cohort 2	NRCan officials
Share of emissions reductions from projects that eliminate (rather than lower) routine venting, Intake Cohort 1	NRCan (IR0577)
Share of emissions reductions from projects that eliminate (rather than lower) routine venting, Intake Cohort 2	NRCan officials
Share of repayable contribution due for repayment, by fiscal year	NRCan (ERF – Onshore Applicant's Guide)
Bond credit rating, by recipient	S&P Capital IQ
Withdrawal-adjusted cumulative annual default rate, by bond credit rating	Moody's Investors Service (2006)[1]
Administration costs	NRCan officials

Estimation and Projection Method:

PBO determined total contributions for Intake Cohorts 1 and 2 using information provided in IR0577 and from NRCan officials, respectively. Since the ERF-Onshore was not fully subscribed by the first two Intake Cohorts, we assumed that NRCan would invite proposals from a third Intake Cohort. PBO estimated total contributions for Intake Cohort 3 by applying the uptake observed from Intake Cohort 2 to the remaining, un-subscribed available funds.

PBO allocated total contributions for Intake Cohort 1 to either the 2020-21 or 2021-22 fiscal years, based on analysis of each project's start and end dates. Consistent with program parameters, we allocated total contributions for Intake Cohorts 2 and 3 entirely to 2021-22.

PBO estimated non-repayable contributions for Intake Cohort 1 using project-level data from IR0577. Since a recipient may receive funding for multiple projects, we applied a mapping and imputation procedure to convert data on total contributions by recipient to total

1. Moody's Investors Service (2006). "Measuring Corporate Default Rates". Retrieved May 12, 2021 from https://www.moodys.com/sites/products/defaultresearch/2006200000425249.pdf

contributions by project. PBO assessed each project's cost per tonne of CO_2e reduced in conjunction with program parameters to determine the portion of each project's contribution eligible to be non-repayable. We assumed that all recipients with the option of making part of their contribution non-repayable (that is, only those with projects that eliminate, rather than merely lower, routine venting) chose to do so. PBO multiplied (a) the total contribution of each project that eliminates routine venting by (b) the corresponding non-repayable portion, and (c) summed the results together, to (d) calculate non-repayable contributions for Intake Cohort 1.

PBO estimated non-repayable contributions for Intake Cohort 2 using information from NRCan officials and making several assumptions. We multiplied (a) total contributions for Intake Cohort 2 by (b) the share of emissions reductions coming from projects that eliminate (rather than lower) routine venting from that same cohort to determine (c) total contributions to projects that eliminate routine venting. PBO then multiplied (a) total contributions to projects that eliminate routine venting in Intake Cohort 2 by (b) the share of contributions to projects that eliminate routine venting that were non-repayable in Intake Cohort 1 to determine (c) non-repayable contributions for Intake Cohort 2.

PBO estimated non-repayable contributions for Intake Cohort 3 following the same procedure for the calculation of this statistic for Intake Cohort 2, with one additional assumption. We assumed that Intake Cohort 3's share of contributions to projects that eliminate (rather than lower) routine venting was the same as that for Intake Cohort 2.

By subtracting non-repayable contributions from total contributions, PBO determined total repayable contributions for each Intake Cohort. As with any debt, a certain portion of those repayable contributions will be unrecoverable, necessitating an estimate for an allowance for credit losses.

To do so, PBO assessed the creditworthiness of recipients from Intake Cohort 1, using bond credit ratings from S&P Capital IQ. All rated recipients had a 'B' rating. Next, PBO modelled when repayable contributions would become due for repayment. PBO's guiding assumption was that recipients would choose the latest repayment date.

PBO envisioned two possible outcomes at each quarterly repayment date: Recipients either (a) provided full repayment for contributions due or (b) did not provide any repayment, owing to default. We determined expected unrecoverable contributions for each quarter by multiplying (a) repayable contributions due by (b) the withdrawal-adjusted cumulative annual default rate in Moody's Investors Service (2006). Overall, PBO estimated that 25 per cent of repayable contributions would be unrecoverable.

Finally, PBO increased the cost estimate by the incremental program administrative costs.

Sources of Uncertainty:

The estimate for total contributions for Intake Cohort 3 is a significant source of uncertainty. Program costs are likely overestimated if the government does not initiate a third intake period. The cost estimate may also be impacted if uptake by Intake Cohort 3 differs from that of Intake Cohort 2.

Much of the modelling approach is based on projected project-level cost and abatement information from Intake Cohort 1. Recipients provided these project data to NRCan as part of

Class III cost estimates, whose accuracy can vary from -20% to +30%. Certain results, especially those surrounding the share of contributions that will be non-repayable, are sensitive to uncertainty in the base cost and abatement information.

In general, whenever there is an unknown parameter value in Intake Cohorts 2 and/or 3 (for example, non-repayable contributions for Intake Cohort 2), the modelling approach ascribes a parameter value, or some combination of parameter values, from a previous Intake Cohort. PBO's implicit assumption of similarity in various characteristics among the Intake Cohorts is a source of uncertainty.

Total non-repayable contributions may be overstated to the extent that recipients eligible to make a portion of their contribution non-repayable opt not to. However, such an overstatement would be partially offset by additional allowance for credit losses on the newly repayable contributions. Non-repayable contributions may also be overstated if recipients do not complete their ERF-funded onshore projects, or do not do so within the prescribed timelines, and are required to return their non-repayable contributions.

The allowance for credit losses is sensitive to the assumption on recipients' bond credit ratings. The allowance for credit losses may increase (decrease) if bond credit ratings are lower (higher) than the 'B' rating PBO assigned to unrated recipients in Intake Cohort 1 and all recipients in Intake Cohorts 2 and 3.

Behavioural responses that impact program costs are not expected.

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Cost of proposed measure

$ millions	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
Total cost	20	111	4	3	3	3

Supplementary information

$ millions	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
Non-repayable contributions	6	50	-	-	-	-
Allowance for credit losses	7	52	-	-	-	-
Administration costs	7	9	4	3	3	3
Total cost	20	111	4	3	3	3

Projected emissions reductions[2], ERF-funded onshore projects

Mt $C0_2e$	Intake Cohort 1	Intake Cohort 2	Intake Cohort 3	Total
Emissions reduced	3.1	4.9	3.9	12.0

Sources: Intake Cohort 1: NRCan (IR0577)

Intake Cohorts 2 and 3: PBO modelling assuming a similar (a) average and (b) distribution of marginal abatement costs as Intake Cohort 1.

Notes

· Estimates are presented on an accruals basis as would appear in the budget and public accounts.
· Positive numbers subtract from the budgetary balance, negative numbers contribute to the budget balance.
· "-" = PBO does not expect a financial cost.
· Totals may not add due to rounding.

2. Projected emissions reductions corresponding to the 1-year period following project completion.