



Mining intensity target What We Heard

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Background

As part of *Our Clean Future*, the Government of Yukon committed to work with the mining industry to set an intensity-based target for greenhouse gas emissions from placer and quartz mining by the end of 2022.

An intensity-based target works with a changing industry to continue to reduce emissions on a per unit basis, even as mining activity varies year to year. It allows the Government of Yukon to track the mining industry's progress in lowering emissions and helps to direct future programs and policies to support industry in meeting these goals.

The target proposed in the engagement was for the mining sector to reduce 45 per cent of greenhouse gas emissions per unit of production by 2035.

This aligns with the Government of Yukon's territory-wide greenhouse gas target of 45 per cent reduction outside of mining by 2030.

Engagement process

The Government of Yukon asked Yukon First Nations, Yukon environmental organizations, the Yukon mining industry and the public for input on options for an intensity-based greenhouse gas emissions target for the mining industry in the Yukon.

The purpose of the engagement was to obtain and ascertain a variety of perspectives on how best to establish emission intensity baselines, measure progress against those baselines and learn about the best solutions for reducing mine emissions.

The engagement was launched on August 17, 2022 with the public phase of the engagement occurring until October 3, 2022.



We asked participants to review a discussion document and provide their feedback either through written submissions or at meetings held both virtually and in-person. The Government of Yukon held meetings with 28 individuals representing the following:

- Carcross/Tagish First Nation;
- Selkirk First Nation;
- Yukon Conservation Society;
- Canadian Parks and Wilderness Society, Yukon Chapter;
- Ducks Unlimited Canada;
- Klondike Placer Miners Association;
- Casino Mining Corporation;
- Newmont Mining Corporation;
- Victoria Gold Corporation;
- Hecla Mining Company;
- TruePoint Exploration;
- Yukon Minerals Advisory Board; and
- Yukon Chamber of Mines.

The following sent written submissions:

- one member of the public;
- Carcross/Tagish First Nation;
- Kwanlin Dün First Nation;
- Selkirk First Nation;
- Yukon Conservation Society;
- Canadian Parks and Wilderness Society, Yukon Chapter;
- Ducks Unlimited Canada;
- Klondike Placer Miners Association;
- Casino Mining Corporation;
- Metallic Group of Companies;
- Yukon Chamber of Mines; and
- Yukon Prospectors Association.



What we heard

Participants provided a range of answers in response to the 11 questions asked in the discussion document. We have grouped the responses to each question into themes.

Question 1. What do you think is achievable now with respect to reducing mining emissions? What can we expect over the next 15 years? What supports would be needed to make the transition away from fossil fuels?

- Some participants suggested a combination of technological actions including:
 - connecting mines to the Yukon's hydro grid;
 - utilizing renewable electricity generating sources and energy storage both on the Yukon's hydro grid and at off-grid mines;
 - using alternative, lower carbon fuels, such as renewable diesel; and
 - capturing CO₂ and storing it.
- Some participants thought there was room for some mining process improvements to help make progress towards the target.
- Participants noted that the Government of Yukon could play a key role by:
 - streamlining the regulatory processes for mining projects that have net-zero CO₂ emissions;
 - providing support for connecting mines to the Yukon's hydro grid;
 - increasing access to bulk-transportation options;
 - providing support for adopting renewable energy;
 - supporting research into emerging technologies; and
 - providing incentives, coupled with strong regulations, to encourage lower-emitting mining projects.
- Some respondents did not think that the target was achievable, because:
 - the pathways to reduce emissions in the mining sector either require complex permitting (renewables), significant market transformation (renewable fuels), or available electricity from the utilities (grid connection);
 - there are limited substitutes for efficient equipment, or electric substitutes;
 - many Yukon mines are among the most efficient operations globally; or
 - “predictive greenhouse gas modelling, laying forth science-based targets and potential outcomes of additional mine activities” has yet to be completed to show what is actually achievable.



- While outside of the scope of the engagement questions, several participants expressed concern with an intensity-based target.

Question 2. Should exploration be part of the mining intensity target, or under the economy-wide absolute target? If exploration were part of the mining intensity target, what would work as a baseline?

Participants expressed a mix of views on including exploration in the economy-wide absolute target.

- While some of the participating First Nations, environmental organizations and mining industry representatives said that exploration should be included in the economy-wide target, others wanted to see it included in the intensity-based target.
- The main reason given for including it in the economy-wide target was that there is no production occurring for some types of mines while exploration is underway, so there would be no way to do a target based on emissions per unit of ore produced.
- An alternative point of view suggested that exploration could be evaluated based on metres drilled, or quantity of land being explored, rather than on the basis of “per unit of ore produced.”
- Placer industry representatives explained that often exploration occurs at the same time as production and that the placer industry’s emissions should be measured in a different manner than the hard rock (quartz) mining industry’s emissions.

Question 3. Should reclamation be part of the mining intensity target, or under the economy-wide absolute target? If reclamation were part of the mining intensity target, what would work as a baseline?

Participants expressed a mix of views on including reclamation in the economy-wide target.

- The main reason given for including reclamation in the economy-wide target was that there was no production occurring at this stage so there would be no way to measure emissions against production.
- Some advocates for including reclamation in the economy-wide target expressed the concern that with no ore being produced at the reclamation stage, but emissions being produced from reclamation activities, an intensity-based target may introduce a disincentive to completing reclamation properly.
- Other points of view were that reclamation emissions could be based on the metric of the area reclaimed or that reclamation projects could count as carbon capture or “carbon



negative” projects that could be used in a mining operation’s overall carbon reduction accounting.

Question 4. Are there other operations which should be included under the mining-intensity target?

- While some participants thought that only fuel used specifically for ore production should be included in the mining-intensity target, others felt that emissions resulting from deforestation and other land changes should also be included in the target.
- Others wanted to include recognition for investments made to reduce greenhouse gas emissions, which predate the target proposed to be set. These could include investments such as installing renewable electricity generation on site or funding connection to the grid.

Question 5. Do you have recommendations for reducing emissions from exploration and reclamation or for other stages of mining?

- Along with the recommendations of fuel switching to electricity, bulk transportation, employing emerging technologies, and strict enforcement of regulations, participants added more emphasis on reclamation activities including:
 - carbon capture during reclamation;
 - using progressive reclamation to minimize the time between initial disturbance and final reclamation;
 - exempting fuel used for reclamation from the target; and
 - creating best management practices for site restoration.

Question 6. Currently, there is limited guidance on how to approach silver mines in the federal system. How do you recommend we set a baseline? Could silver be grouped in with a different target?

- Baselines grounded on mine type may aid in providing a solution for how to approach silver mines by categorizing each mine in accordance with its associated mining process/methodology, as this method would account for each mine type having broad-scale differences in emissions production.

Question 7. The federal system does not incorporate multiple mineral products. It is possible to have an equivalency established (e.g., based on emission baselines, or \$ value) to transform secondary minerals into the primary output for consideration in the calculations. Is allowing for that equivalency helpful, or too complicated?



- Some participants were of the view that an option that incorporates multiple mineral products into a facility-specific baseline would be helpful.
- Another suggestion was to track emissions intensity improvements based on tonnes of ore processed to remove the influence of ore grades.

Question 8. What considerations should we take into account if we are developing an equivalency approach?

- Ensure that an equivalency baseline accounts for a change in the type of minerals and metals being mined over time.
- Consideration of the type of greenhouse gas being produced, the amount of land disturbed, the volume of water evaporated, the types of fuels being used and the combustion technology being employed.

Question 9. Are these categories sufficient? If we were to add categories, what should we consider as part of this process and who should be part of this process?

- Some participating First Nations and environmental groups said that they need more information to give proper consideration to which categories should be included.
- Some hard rock mining industry representatives suggested that other categories that could be added would be open pit and underground mining.
- They also stated that extraction and processing should be considered as separate phases. They supported initially limiting accounting for the target to fuel use and then adding categories as required over time.
- Mining for critical minerals should be evaluated more favourably than mining for non-critical minerals.
- We also heard that electricity generation could be treated separately, to better reflect the emissions profiles between on- and off-grid mines.

Question 10. With respect to the three options outlined above for establishing baselines [product specific, equivalency, mine operation type], which option do you prefer and why?

- Some participants stated a preference for a facility-specific option that would allow companies to evaluate their own processes and emissions from the starting point of their emissions reduction efforts, enabling them to “establish appropriate and achievable interim reduction targets between now and 2050.”
- Others stated a preference for an activity-based option that could transition as a mine moved through its phases.



- Participants were clear that they saw a need for placer mines to be classified separately from hard rock mines.
- Some participants stated that measuring the emissions intensity of placer mines as a whole per year would be fairer than measuring individual mines annually.
- Several participants expressed the desire for additional information, before providing more detailed feedback.

Question 11. What do you think are the best solutions for reducing mine emissions, and what supports would help?

- Participants provided a variety of suggestions including:
 - carbon pricing;
 - that the territorial and federal governments' support for stable, clean electricity and other infrastructure (roads and rail), be extended to all quartz mines;
 - researching carbon offsetting through the reclamation of historic mining sites;
 - emissions caps;
 - support for adopting new technology that are more energy efficient and/or rely on renewable energy;
 - extending the Government of Yukon energy rebates to placer miners;
 - supporting the importation of biofuels and related equipment; and
 - that government policies, procedures and legislation be developed to encourage mining companies to meet the mining intensity target.

What's next?

The Government of Yukon is using the feedback we received during this engagement to inform our work as we move towards establishing a mining intensity target. Next steps include establishing emissions intensity baselines, developing guidelines for what falls under the mining intensity target, exploring options to assist industry in reducing emissions in the mining sector and setting the target for intensity reductions.

