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To Whom It May Concern,

Re: East Coast Environmental Law Submission on the Environmental Impact Statement for the Proposed Fifteen Mile Stream Gold Project

East Coast Environmental Law hereby submits the following comments in response to the Environmental Impact Statement ("EIS") which Atlantic Mining NS Corp ("Atlantic Gold" or "the Proponent") has delivered to the Impact Assessment Agency of Canada ("IAAC") and the Nova Scotia Department of Environment and Climate Change ("NSECC") as required for the joint federal and provincial environmental assessment of the proposed Fifteen Mile Stream Gold Project ("the proposed project").

We have chosen to focus our comments on the Proponent's treatment of climate change considerations throughout the EIS, including the treatment of the GHG emissions which the proposed project would emit, the consequences of destroying carbon-sequestering forests and wetlands, and the impacts that future consequences of climate change could have on the permanent infrastructure which the proposed project would require. Our decision to focus on climate change considerations is due to limited capacity (we do not have participant funding that would enable us to engage more robustly in this environmental assessment) and should not be taken as an indication that we are not seriously concerned by other matters addressed within the EIS, such as the predicted impacts to local biodiversity and species at risk, the threats posed by toxic contamination, the burden that the proposed Project will place on local roadways and the communities near them, and the adverse impacts that Mi'kmaw communities in Nova Scotia would suffer as a result of the altered land use and ecological degradation that the proposed project would cause. We anticipate that several environmental organizations, community groups, Mi'kmaw representatives, and others throughout Nova Scotia will provide comments addressing such matters, and we invite IAAC, NSECC, and the Proponent to assume that we share the concerns they raise.

(1) What the Fifteen Mile Stream Gold Project EIS Guidelines Require

The EIS Guidelines for the proposed project were issued in August 2018. They identify the "minimum information requirements" for the Proponent's EIS and should not be understood to limit the Proponent's duty to provide information that may be relevant to this environmental assessment.[1]

Four requirements imposed by the EIS Guidelines have special relevance for the treatment of climate change considerations throughout the EIS:

> (i) consideration of the *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia*;
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> (ii) consideration of the subsection 19(1) factors in the *Canadian Environmental Assessment Act, 2012* (*"CEAA 2012*");
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> (iii) description of the proposed project's contribution to atmospheric emissions; and,
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> (iv) identification, quantification, and estimation of relevant greenhouse gases and emissions reduction targets.

We discuss each of these requirements in turn in our comments below.

> (i) *Consideration of the Guide to Considering Climate Change in Environmental Assessments in Nova Scotia*
>
> (a) Accounting for the Loss of Carbon Sinks

The EIS Guidelines require the Proponent to consider the *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia*—a guidance document which Nova Scotia Environment produced in February 2011.[2]

The *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia* makes it clear that a proposed project's "carbon footprint" will not only include its greenhouse gas ("GHG") emissions but will also include its impact on carbon sinks.[3]

Our review of the Proponent's EIS determined that the Proponent has failed to meaningfully consider the proposed project's impact on carbon sinks. For example, the Proponent recognizes

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[1] Canadian Environmental Assessment Agency, "Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* and Nova Scotia Registration Document pursuant to the *Nova Scotia Environment Act*: *Fifteen Mile Stream Gold Project: Atlantic Mining NS Corp*" (August 2018) at page 2 ["EIS Guidelines"].

[2] *Ibid* at page 40.

[3] Nova Scotia Environment, *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia* (February 2011) at page 1; see also pages 2, 5, 7, and 17 ["*Guide to Considering Climate Change in EAs*"]. See also Nova Scotia Environment, *Guide to Considering Climate Change in Project Development in Nova Scotia* (February 2011) at page 4 ["*Guide to Considering Climate Change in Project Development*"].

that carbon sequestration is one of the ecological services that wetlands provide,[4] but it does not explain or quantify the carbon impacts resulting from the significant loss of wetlands which the proposed project would cause. The Proponent likewise does not explain or quantify the carbon impacts resulting from the significant loss of forested lands which the proposed project would require.

In keeping with the guidance offered repeatedly throughout the *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia*—which makes it clear that proponents should consider how their proposed projects will affect carbon sinks—we urge IAAC and NSECC to require the Proponent to account for the lost carbon sequestration services that would flow from the proposed losses of forests and wetlands.

(b) Assessing the High-Risk Nature of the Proposed Project

Nova Scotia's *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia* (like the corresponding *Guide to Considering Climate Change in Project Development in Nova Scotia*) indicates that proponents should assess the riskiness of their proposed projects using a metric developed by Nova Scotia Environment.

The *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia* suggests that the proposed Fifteen Mile Stream Gold Project should be considered a high-risk project when the future effects of climate change are taken into account. The guide states:

> The proponent/practitioner may determine a project's risk is either Medium, *e.g.* projects that have some specific climate vulnerabilities such as sea-level rise related to a component or components of the project; or High Risk, *e.g.* projects that: are reliant on resources affected by climate (water resources); are located in hazard zones (coastal zones); or have long-term infrastructure potentially effected [*sic*] by climate change.[5]
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> [Emphasis added]

If it were allowed to go forward, the proposed Fifteen Mile Stream Gold Project would require long-term infrastructure that could be affected by climate change. An especially significant hazard would be the enormous Touquoy Mine pit full of toxic tailings which would need to be monitored and managed in perpetuity. It is readily conceivable that the effectiveness and safety of that permanent infrastructure would be jeopardized by flooding, heavy rainfall, or other extreme weather events which we can anticipate in Nova Scotia over the next century as a result of climate change.

Having reviewed the Proponent's EIS, it is not clear to us that the Proponent engaged in the risk analysis suggested by the *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia* or considered whether the creation of a massive and permanent tailings "lake"—

[4] Atlantic Mining NS Corp, *Fifteen Mile Stream Gold Project Environmental Impact Statement* (February 2021) at pages 384, 404, and 426 ["EIS Statement"].
[5] *Guide to Considering Climate Change in EAs*, *supra* note 3 at page 9. See also *Guide to Considering Climate Change in Project Development*, *supra* note 3 at page 4.

which could fail in several ways as a result of climate change impacts—makes the proposed Fifteen Mile Stream Project a "high-risk" project under Nova Scotia Environment's metric.

In fact, our review of the EIS indicates that the Proponent repeatedly understates the longevity of its proposed project infrastructure and fails to meaningfully address how climate change could impact permanent project infrastructure in the long term. For example, the Proponent states in one section of the EIS that when it assessed potential future climate impacts on the proposed project, it used Nova Scotia Environment's future climate projections for the 2020s (as opposed to the 2050s and 2080s) because "the duration for the Project is relatively short, approximately 11 years including reclamation (excluding ongoing monitoring)".[6] This frankly incomprehensible view is reiterated,[7] and the Proponent ultimately concludes that:

> […] climate change will have no significant adverse effects on the Project due to the relatively short duration of the Project […].[8]

We recognize that the Proponent states within the EIS that climate change considerations have been taken into account in modelling and preparation for future weather events, and the Proponent appears to have incorporated some climate change mitigation measures into its project design.[9] Nevertheless, the statements quoted above make us seriously concerned that the Proponent has failed to account fully for the harms that future climate change impacts could cause to permanent tailings infrastructure and, relatedly, the consequential harms that Nova Scotians would suffer if the proposed tailings infrastructure were to fail. We therefore urge IAAC and NSECC to carefully assess the extent to which the Proponent has accounted for future climate impacts that could affect permanent infrastructure in the middle of this century, at the end of this century, and beyond.

We wish to emphasize at this point that the EIS Guidelines for the proposed project require the Proponent to "demonstrate that all aspects of the project have been examined and planned in a careful and precautionary manner in order to avoid significant adverse environmental effects".[10] This requirement reflects the language of subsection 4(1) of *CEAA 2012* and anticipates the mandate which subsection 4(2) of *CEAA 2012* imposes on the Government of Canada, the Minister of Environment and Climate Canada, IAAC, and other relevant federal and responsible authorities:

> The Government of Canada, the Minister, the Agency, federal authorities and responsible authorities, in the administration of this Act, must exercise their powers in a manner that protects the environment and human health and applies the precautionary principle.

The precautionary principle is not defined in *CEAA 2012*, but its meaning is apparent in international legal discourses and other legislation that exists within Canada. Nova Scotia's *Environment Act* articulates it as meaning that "where there are threats of serious or irreversible

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[6] EIS Statement, *supra* note 4 at page 850.
[7] *Ibid* at pages 851-852.
[8] *Ibid* at page 852.
[9] See for example *ibid* at pages 852-853.
[10] EIS Guidelines, *supra* note 1 at page 3.

damage, the lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation".[11]

Given the mandate imposed by subsection 4(2) of *CEAA 2012*, it is reasonable to expect that the Proponent's responsibility to "demonstrate that all aspects of the project have been examined and planned in a careful and precautionary manner" will be fulfilled with an eye to the role that the precautionary principle must play in all decision-making under the Act.

We also note that the *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia* states that "[i]f a project is identified as Medium or High Risk for climate change impacts […] and the results of the risk assessment approach […] indicate the project is vulnerable to climate change, then the proponent/practitioner should develop an Adaptation Plan for the project".[12] In our view, the proposed project is a high-risk project. We therefore urge IAAC and NSECC to require the Proponent to develop an Adaptation Plan that addresses the long-term management of its permanent infrastructure, properly taking future climate change impacts into account.

(c) Preparing a Greenhouse Gas Management Plan

Nova Scotia's *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia* states that proponents of proposed projects that will emit more than 10,000 tonnes of carbon dioxide equivalent (CO_2e) per year should develop a GHG Management Plan which includes a proposed GHG emissions monitoring methodology.[13] According to Appendix J.2 of the EIS, the proposed project would emit 35,015.4 tonnes of CO_2e per year.[14]

The Proponent does not appear to have developed or be developing a GHG Management Plan: none appears among the various Environmental Management Plans which are listed at pages 987-88 of the EIS. We therefore urge IAAC and NSECC to require the Proponent to develop a GHG Management Plan.

(ii) *Consideration of the Subsection 19(1) Factors in CEAA 2012*

In keeping with paragraph 19(1)(a) of *CEAA 2012*, which requires the environmental assessment of a designated provide to take cumulative environmental effects into account, the EIS Guidelines require the Proponent to consider "any cumulative environmental effects that are likely to result from the project in combination with other physical activities that have been or will be carried out".[15] In keeping with paragraph 19(1)(e) of *CEAA 2012*, the EIS Guidelines require the Proponent to consider the requirements of the follow-up program that the proposed project will require, and, in keeping with paragraph 19(1)(h) of the Act, they require the Proponent to consider any change that the environment may cause to the proposed project.[16] Reasonable

[11] *Environment Act*, SNS 1994-95, c 1 at 2(b)(ii) ["*Environment Act*"].
[12] *Guide to Considering Climate Change in EAs*, *supra* note 3 at pages 10-11.
[13] *Ibid* at page 10. The document later refers to this as a GHG Mitigation Plan: see page 18.
[14] EIS Statement, *supra* note 4, Appendix J.2, "Ambient Air Quality Assessment" at page 21.
[15] EIS Guidelines, *supra* note 1 at page 5.
[16] *Ibid*.

interpretations of these requirements demand that climate change considerations be taken into account.

(a) Cumulative Environmental Effects

The sections of the EIS which deal with cumulative effects assessment do not address the cumulative environmental effects of the proposed Fifteen Mile Stream Gold Project's GHG emissions in combination with the anticipated GHG emissions of the other two gold mining projects which the Proponent has proposed to conduct in the region: the proposed Beaver Dam Mine Project and the proposed Cochrane Hill Gold Project. Likewise, the EIS does not address the cumulative environmental effects of the loss of carbon sequestering forests and wetlands that each of the Proponent's three proposed gold mining projects would cause.

Throughout the EIS, the Proponent regularly describes its proposed Beaver Dam Mine Project as a complement to the proposed Fifteen Mile Stream Gold Project. It is absolutely clear that the Proponent considers these proposed projects to be interconnected and mutually supportive. It is similarly clear that the three proposed gold mining projects which the Proponent has put forward will be interdependent in several respects, including through the use of shared haul roads, processing facilities, and tailings infrastructure. It is inappropriate for the Proponent to describe the benefits of interconnecting its three proposed gold mining projects without also describing the cumulative environmental effects of the projects' collective GHG emissions and their destruction of carbon sequestering forests and wetlands.

As we address in more detail below, the proposed Fifteen Mile Stream Gold Project is projected to emit an estimated 385,169.4 tonnes of CO_2e in total, not counting the ongoing maintenance and monitoring that would be required after the reclamation stage.

The Environmental Impact Statement for the proposed Beaver Dam Mine Project states that the project would emit 172,882.6 tonnes of CO_2e between 2021 and 2029 if it were approved, plus an additional 33,947.5 tonnes of CO_2e for the aspects of the project that would be carried out at the Touquoy Mine, giving us an estimated 206,830.1 tonnes of CO_2e in total, not counting the ongoing maintenance and monitoring that would be required after the reclamation stage.[17]

Estimates of the GHG emissions anticipated from the proposed Cochrane Hill Gold Project have not yet been provided, but it seems reasonable to assume that they would be comparable to those of the proposed projects at Fifteen Mile Stream and Beaver Dam.

Although cumulative effects assessments under *CEAA 2012* have not typically assessed the cumulative effects of GHG emissions,[18] we see no legally supportable reason why this should not be done. In our view, cumulative effects assessments under *CEAA 2012* should, at minimum, consider how the GHG emissions associated with a proposed project would impact relevant

[17] Atlantic Mining NS Corp, *Beaver Dam Mine Project Environmental Impact Statement* (12 June 2017) at pages 144-45.
[18] Meinhard Doelle and David V Wright, "Social Cost of Carbon in Environmental Impact Assessment" (October 2019) 52 UBCL Rev 1007 at pages 1042-43 ["Social Cost of Carbon"].

jurisdictions' "pre-determined carbon budgets or decarbonisation pathways".[19] This is a logical way of adapting the conventional cumulative effects assessment approach, which asks how cumulative environmental effects would impact valued ecosystem components in the geographic vicinity of a proposed project, taking into account the environmental impacts of existing and prospective projects in the same area.[20] In this context, the valued ecosystem component is "the global climate system", but, given the global nature of that ecosystem component and the impossibility of assigning geographic boundaries to GHG emissions, jurisdictional carbon budgets and decarbonization pathways are used to provide analogous jurisdictional and geographic context.[21]

The EIS Guidelines for the proposed Fifteen Mile Stream Gold Project already require the Proponent to provide an estimate of the GHG emissions associated with the proposed project and compare those emissions to Canada's and Nova Scotia's emissions reduction targets. Expanding that analysis in the cumulative effects assessment would better serve the EIS Guidelines' spirit and intent and support a more meaningful environmental assessment.

We therefore urge IAAC and NSECC to require the Proponent to address the cumulative force of the GHG emissions that would be emitted by its three proposed gold mining projects in Nova Scotia and explain how those emissions would cumulatively affect Canada's and Nova Scotia's GHG emissions reduction goals and decarbonization pathways.

We also urge IAAC and NSECC to require the Proponent to address the cumulative environmental effects of the collective losses of carbon-sequestering forests and wetlands that would be caused by the three gold mining projects it has proposed.

(b) Follow Up Program

As we discussed above, our review of the EIS indicates that the Proponent repeatedly understates the longevity of its proposed project infrastructure and may not fully address how climate change could impact permanent project infrastructure in the long term. Given the Proponent's view that "climate change will have no significant adverse effects on the Project due to the relatively short duration of the Project",[22] we urge IAAC and NSECC to ensure that any proposed follow up program for the proposed project meaningfully considers long-term climate change impacts.

(c) Changes that the Environment May Cause to the Proposed Project

As we have already reiterated, we are concerned that the EIS does not meaningfully address the long-term implications that climate change could have for the proposed project. Again, we urge IAAC and NSECC to assess the sufficiency of the Proponent's analysis in this regard.

[19] "Social Cost of Carbon", *supra* note 18 at page 1043.
[20] *Ibid* at page 1043.
[21] *Ibid* at page 1043.
[22] EIS Statement, *supra* note 4 at page 852.

(iii) *Description of the Proposed Project's Contribution to Atmospheric Emissions*

The EIS Guidelines require the Proponent to describe how the proposed project will contribute to atmospheric emissions, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_20), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).[23] Carbon dioxide, methane, nitrous oxide, perfluorocarbons, hydrofluorocarbons, and sulphur hexafluoride are the GHGs contributing to anthropogenic global warming and our current climate emergency, and all six are listed as toxic substances and regulated under the *Canadian Environmental Protection Act*.

In our view, the Proponent's descriptions of the proposed project's contribution to atmospheric emissions were sufficient to enable us to understand the overall volume of GHGs that the proposed project is predicted to emit; however, as we discuss in more detail below, the EIS fails to provide information that puts those proposed emissions into proper context.

(iv) *Identification, Quantification, and Estimation of Relevant Greenhouse Gases and Emissions Reduction Targets*

The EIS Guidelines require the Proponent to "identify and quantify existing greenhouse gas emissions by individual pollutant measured as kilotonnes of CO_2 equivalent per year in the project study areas" and to describe "current provincial/territorial/federal limits for greenhouse gas emission targets".[24] Additionally, they require the Proponent to provide:

> an estimate of the direct greenhouse gas emissions associated with all phases of the project as well as any mitigation measures proposed to minimize greenhouse gas emissions. This information is to be presented by individual pollutant and should also be summarized in CO2 equivalent per year:
>
> - ✓ justify all estimates and emission factors used in the analysis;
> - ✓ provide the methods and calculations used for the analysis;
> - ✓ compare and assess the level of estimated emissions of greenhouse gases to the regional, provincial and federal emission targets […].[25]

Throughout the EIS, the Proponent repeatedly uses an outdated GHG emissions reduction target for Nova Scotia as the benchmark for its comparison of the proposed project's anticipated emissions and Nova Scotia's GHG emissions reduction goals and decarbonization pathway.

As the Proponent notes, under Nova Scotia's *Environmental Goals and Sustainable Prosperity Act* ("*EGSPA*")—which was enacted in 2007 and amended in 2012—the Government of Nova Scotia set a GHG emissions reduction goal of reducing the province's GHG emissions to 10% below the 1990 levels by 2020. By 2015, that goal had been met.

In the autumn of 2019, the Government of Nova Scotia passed the *Sustainable Development*

[23] EIS Guidelines, *supra* note 1 at page 18.
[24] *Ibid* at page 23.
[25] *Ibid* at page 31.

Goals Act ("the *SDGA*"), which was designed to repeal and replace *EGSPA* and set ambitious new targets for GHG emissions reductions. The *SDGA* has not yet been proclaimed in force, and our understanding is that the Government of Nova Scotia is waiting until regulations under the Act, listing further sustainable development goals and targets, have been developed. Public consultations on the regulations were anticipated in 2020, but the advent of COVID-19 affected the provincial government's momentum.

Although the *SDGA* has not yet been proclaimed in force, it is well understood throughout Nova Scotia that the GHG emissions reduction goals it contains are our current goals. The *EGSPA* emissions reduction goals are no longer relevant, and the Proponent should not be relying upon them as it assesses how its proposed GHG emissions compare to Nova Scotia's long-term plans to achieve sustainability.

In particular, it is wholly inappropriate for the Proponent to be using the *EGSPA* goal for GHG emissions reduction by 2020 as the threshold for determining the significance of its proposed project's GHG emissions. The Proponent states in the EIS:

> For GHGs an affect is considered significant when the emissions of greenhouse gases in CO_2e would threaten the currently achieved 2020 reduction goal set by Nova Scotia, defined in this assessment as an increase of (+8%) of the 2015 provincial emissions.[26]

In other words, the Proponent is asking IAAC, NSECC, and all Nova Scotians to accept that its proposed project's GHG emissions will be insignificant if they do not cause Nova Scotia to backslide on the reductions achievements it made more than half a decade ago. This disregard for Nova Scotia's current emissions reductions goals—and the concomitant disregard for the reality that Canada and Nova Scotia are working actively to continue decreasing annual GHG emissions at more and more ambitious rates—is frankly astonishing.

Given the Proponent's failure to provide information that recognizes the current state of affairs in Nova Scotia (not to mention Canada as a whole), we offer the following analysis.

Section 7 of the *SDGA* states:

> The Government's goals in relation to greenhouse gas emissions reductions are that greenhouse gas emissions in the Province are
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> (a) by 2020, at least 10% below the levels that were emitted in 1990;
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> (b) by 2030, at least 53% below the levels that were emitted in 2005; and
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> (c) by 2050, at net zero, by balancing greenhouse gas emissions with greenhouse gas removals and other offsetting measures.

Nova Scotia's 1990 GHG emissions were 19.6 megatonnes of CO_2e, and its 2005 GHG

[26] EIS Statement, *supra* note 4 at page 158.

emissions were 23.2 megatonnes of CO_2e.[27] This means that the GHG emissions reduction goals in the *SDGA* can be phrased alternatively by saying that the Government of Nova Scotia's current goals are to ensure that:

(a) no more than 17.64 megatonnes of CO_2e are being emitted annually by 2020;

(b) no more than 10.90 megatonnes of CO_2e are being emitted annually by 2030; and,

(c) the province has achieved net zero emissions by 2050.

Nova Scotia's GHG emissions in 2019—the most recent year for which data is accessible through the Government of Canada website and Canada's National Inventory Reports to the United Nations—were 16.2 megatonnes of CO_2e.[28] Assuming that Nova Scotia's GHG emissions did not rise significantly in 2020, the *SDGA*'s 2020 goal has been met.

To achieve the *SDGA*'s 2030 goal, the Government of Nova Scotia must lower the province's GHG emissions by at least a further 5.3 megatonnes of CO_2e below the 2019 level.

How will Nova Scotia do this? Answering that question requires us to consider Nova Scotia's decarbonization pathway by questioning where the province's GHG emissions are coming from now and how the province will make the necessary cuts.

Currently, Nova Scotia's highest GHG-emitting sectors are the electricity and transportation sectors. In 2017, in which Nova Scotia's total GHG emissions were roughly 16 megatonnes of CO_2e,[29] electricity generation represented 42% of Nova Scotia's emissions, and transportation represented 31%.[30]

Nova Scotia Power Incorporated ("NSPI")—the province's primary producer and distributor of electricity—reports total system emissions of 6,765,918 tonnes (roughly 6.77 megatonnes) of CO_2e for 2017.[31] In 2019, its reported numbers were 6,574,414 tonnes (roughly 6.57 megatonnes) of CO_2e.[32]

Under Nova Scotia's *Renewable Electricity Regulations*, NSPI is required to ensure that a portion of all electricity it distributes in Nova Scotia comes from renewable sources. In his recent campaign to secure the leadership of the provincial Liberal Party, Nova Scotia Premier Iain

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[27] Government of Canada, "Greenhouse gas emissions by province and territory" online: <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html>.
[28] *Ibid*.
[29] Canada, 2021 National Inventory Report (12 April 2021) at page 11, online: <https://unfccc.int/documents/271493>. This is a rounded figure which likely omits a significant percentage amount of approximately .1-.2 additional megatonnes.
[30] Canada Energy Regulator, "Provincial and Territorial Energy Profiles – Nova Scotia", online: <https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profiles-nova-scotia.html>.
[31] Nova Scotia Power, "Air Emissions Reporting", online: <https://www.nspower.ca/cleanandgreen/air-emissions-reporting>.
[32] *Ibid.*

Rankin said that he would implement a new renewable electricity requirement of 80% by 2030 if elected. If that target becomes law, it could significantly lower NSPI's annual GHG emissions by 2030, but it will clearly not make Nova Scotia's electricity sector carbon neutral within this decade.

Since NSPI's current annual GHG emissions are well over 5.3 megatonnes and will not be reduced to 0 by 2030, it is obvious that significant emissions reductions must be made in other sectors within this decade or else the *SDGA*'s goal of emitting no more than 10.90 megatonnes of CO_2e annually by 2030 will not be achieved.

This is the kind of information and meaningful context that should be informing our assessment of the significance of the proposed Fifteen Mile Stream Gold Project's anticipated GHG emissions.

As we noted above, Appendix J.2 of the EIS states that the proposed project would emit 35,015.4 tonnes of CO_2e per year.[33] Roughly 35,000 tonnes per year may appear minimal when compared to NSPI's 2019 output of 6,574,414 tonnes, and it may seem even smaller when translated to megatonnes (roughly .035 per year) and assessed in the context of the push to lower Nova Scotia's annual GHG emissions by at least 5.3 megatonnes of CO_2e below the 2019 level by 2030. We recognize that the proposed project's anticipated emissions may seem negligible even when they are put in the proper context; however, we share an opinion that is held by many who understand our current climate crisis: <u>every tonne of carbon counts</u>. As recent and widely-reported analyses from the Intergovernmental Panel on Climate Change make clear, our failure to meet the *Paris Agreement*'s aspirational target of limiting global temperature rise to 1.5°C above pre-industrial levels will result in human and ecological deaths that could have been avoided. Currently, Canada and the world are not on track to limit global temperature rise to 2°C above pre-industrial levels, let alone 1.5°C. Canadians are already witnessing the catastrophic effects of climate change, and the remaining carbon budget to which we may lay claim—if any—should not be consumed unless the necessity and benefit of doing so (such as to enable our complete transition off of fossil fuels) clearly outweighs the detriments of emitting GHGs.

With all of this in mind, we urge IAAC and NSECC to meaningfully assess how the emission of 35,015.4 tonnes of CO_2e per year between the hypothetical project start date and 2030 would affect Nova Scotia's GHG emissions reduction goals and decarbonization pathway.

We also note that the analysis provided above focuses on <u>Nova Scotia's</u> GHG emissions reduction goals and decarbonization pathway alone. We have not conducted a parallel analysis that assesses the proposed project's anticipated GHG emissions against <u>Canada's</u> emissions reduction goals and decarbonization pathway, but that analysis should be done as well, and we urge IAAC and NSECC to conduct it.

We recognize that unlike the *Impact Assessment Act*, *CEAA 2012* does not require the Governor in Council to consider how the effects of a proposed project would hinder or contribute to the Government of Canada's ability to meet its environmental obligations and climate change commitments. This does not mean, however, that the Government of Canada—and the Governor

[33] EIS Statement, *supra* note 4, Appendix J.2, "Ambient Air Quality Assessment" at page 21.

in Council as its decision-making representative under *CEAA 2012*—has no legal obligation to take those obligations and commitments into account when determining whether the significant adverse environmental effects of a proposed project are justified. To the extent that Canada's environmental obligations and climate change commitments are legally binding—whether because they exist in Canadian legislation or under the common law or because they exist under binding articles of international treaties or the rules of international customary law—the Governor in Council cannot ignore them when making determinations under *CEAA 2012*.

With that in mind, we emphasize strongly that Canada has made legal commitments under the *United Nations Framework Convention on Climate Change* and the corresponding *Paris Agreement*: it has committed to doing its fair share to limit global warming to well below 2°C above pre-industrial levels and has likewise acknowledged the pressing need to limit global temperature rise to 1.5°C above pre-industrial levels if possible. These legal commitments matter, and they must inform assessment and decision-making under *CEAA 2012*.

(2) Further Considerations: Justifying the Social Cost of Carbon

In an environmental assessment being conducted under *CEAA 2012*, the Minister of Environment and Climate Change Canada ("the Minister") must determine whether the proposed project is likely to cause any "significant adverse environmental effects". If the Minister determines that the proposed project is likely to cause one or more significant adverse environmental effects, they must refer the matter to the Governor in Council, which must then decide whether those effects are "justified in the circumstances".

Atlantic Gold has concluded in its EIS that the proposed Fifteen Mile Stream Gold Project will not cause any significant adverse environmental effects, including significant adverse environmental effects related to climate change.[34] We disagree.

If it were allowed to go forward, the proposed project would emit roughly 35,015.4 tonnes of CO_2e per year throughout its lifetime (not including ongoing monitoring and maintenance after the reclamation stage). If we adopt the Proponent's timeline and say that the relevant lifetime of the proposed project would be roughly 11 years, we can anticipate that it would emit roughly 385,169.4 tonnes of CO_2e in total. At a time when Canada has already exceeded its fair share of the remaining global carbon budget by some calculations,[35] any consideration of what is "justified in the circumstances" must give serious thought to what stands to be gained and lost—and whom stands to gain or lose most—from projects of this kind.

The Proponent's EIS includes considerable commentary on the economic benefits that will purportedly flow to Nova Scotia and Canada as a whole if the proposed project is allowed to go forward. Among other concerns, the economic analysis underpinning those comments does not account for the social costs of the CO_2e that the proposed project would emit or the loss of carbon sequestering forests and wetlands that it would cause. In our view, this is unjustifiable accounting

[34] EIS Statement, *supra* note 4 at page 166.
[35] Gibson et al., *From Paris to Projects: Clarifying the implications of Canada's climate change mitigation commitments for the planning and assessment of projects and strategic undertakings: Summary Report* (January 2019) at page 9, online: <https://metcalffoundation.com/publication/from-paris-to-projects/>.

in the climate-imperilled world we inhabit, and we urge IAAC and NSECC to incorporate a social cost of carbon analysis into this environmental assessment.

Accounting for the social cost of carbon associated with the proposed project would mean assigning a dollar figure to each tonne of carbon dioxide (CO_2) or carbon dioxide equivalent (CO_2e) that the project would emit. That dollar figure would represent a valuation of the cost of future damages caused by emitting additional CO_2e into the atmosphere and exacerbating the consequential harms of climate change.[36]

In our comments in this section, we draw on the work of legal scholars Meinhard Doelle and David V. Wright. Doelle and Wright have assessed the utility of accounting for the social cost of carbon in environmental impact assessments in Canada, and they have concluded that its use would be valuable.[37] Although their assessment focuses primarily on how social cost of carbon accounting could be included in impact assessment processes under the *Impact Assessment Act*, their analysis makes several points that are equally relevant to environmental assessments under *CEAA 2012*.

The analyses used to calculate the social cost of carbon are acknowledged to be imperfect; however, despite their limitations, they are accepted as being useful because it would clearly be inappropriate to not account for the future costs of climate harms when making relevant regulatory and policy decisions today.[38] The Government of Canada has been accounting for the social cost of carbon in regulatory analysis and decision-making since 2011 and is experienced in the practice.[39]

To our knowledge, the Government of Canada has not yet accounted for the social cost of carbon when conducting environmental assessments under *CEAA 2012*. We view this as an unreasonable failure to consider relevant information that should be informing the Governor in Council's determinations as to whether proposed projects that are likely to cause significant adverse environmental effects are justified in the circumstances.

We agree with the analysis presented by Doelle and Wright when they state that environmental assessments "that do not integrate a monetary value of climate change damages that would result from a proposed project's emissions can lead to decisions based on incomplete information, particularly insofar as decisions are made based on economic costs and benefits of the proposed project".[40] Accounting for the social cost of carbon "can be used to compare expected positive consequences expressed in quantitative figures, such as jobs, royalties, and other benefits, with negative consequences expected from carbon emissions impacts", thus painting "a more accurate economic picture".[41] As they go on to describe:

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[36] Social Cost of Carbon", *supra* note 18 at page 1020.
[37] *Ibid* at pages 1009-10.
[38] *Ibid* at pages 1022, 1024. See also David V Wright, "Carbonated Fodder: The Social Cost of Carbon in Canadian and US Regulatory Decision-Making" (2017) 29:3 Georgetown Environmental L Rev 513 at page 524 ["Carbonated Fodder"].
[39] "Carbonated Fodder", *supra* note 38 at page 522.
[40] Social Cost of Carbon", *supra* note 18 at page 1030.
[41] *Ibid* at pages 1039-40.

> A look at the Joint Review Panel Report for the Northern Gateway project illustrates this point. That report included a sub-section on "economic burdens and benefits", an "analysis of project costs and benefits", and figures setting out expected economic benefits such as $312 billion increase in Canadian gross domestic product, $44 billion in federal government revenues, $54 billion to provincial or territorial governments, and $70 billion in Canadian labour income. Costs of carbon emissions were not included in the report, though it did present projected spill clean-up costs.[42]

In the midst of our current climate emergency, it should be inconceivable that the Government of Canada would consider justifying a proposed project that would have significant adverse environmental effects without weighing the project's purported economic benefits against the costs of the GHGs it would emit.

To our knowledge, the March 2016 *Technical Update to Environment and Climate Change Canada's Social Cost of Greenhous Gas Estimates* ("the Technical Update") identifies the current figures for the social cost of carbon that are informing Canadian analyses and decision-making. Those figures have been critiqued as being too low,[43] but at the very least they offer a starting point from which to begin considering how the purported economic benefits of a proposed project undergoing environmental assessment could be contextualized with a social cost of carbon analysis.

Under the Technical Update, the current "central value" for the social cost of carbon has been set at $41 Canadian dollars (rounded up from $40.7 and reflecting the 2012 Canadian dollar) per tonne of CO_2.[44] To our knowledge, Environment and Climate Change Canada is currently using the same figure as the value for the social costs of methane and nitrous oxide—two other powerful GHGs.[45]

As we noted above, if the proposed Fifteen Mile Stream Gold Project were allowed to go forward, it would emit roughly 35,015.4 tonnes of CO_2e per year throughout its lifetime (not counting ongoing maintenance and monitoring after the reclamation stage). If we adopt the Proponent's timeline and say that the relevant lifetime of the proposed project would be roughly 11 years, we can anticipate that it would emit roughly 385,169.4 tonnes of CO_2e in total.

Using the $41 social cost of carbon figure that Environment and Climate Change Canada currently uses in its regulatory analysis and decision-making, we can translate that 385,169.4 tonnes of CO_2e into an estimated future cost to Canadians in the amount of $15,791,945.4—nearly $16 million.

Importantly, this estimated cost only accounts for the GHG emissions that the proposed project will produce: it does not account for the climate costs of losing significant tracts of carbon sequestering forests and wetlands.

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[42] Social Cost of Carbon", *supra* note 18 at page 1040.
[43] See "Carbonated Fodder", *supra* note 38.
[44] Environment and Climate Change Canada, *Technical Update to Environment and Climate Change Canada's Social Cost of Greenhouse Gas Estimates* (March 2016) at pages iii, 26-27.
[45] *Ibid* at page 14.

The Economic Impact Assessment which appears as Appendix E.1 in the EIS does not take these significant costs into account. We therefore urge IAAC and NSECC to assess how the social cost of carbon associated with the proposed project should condition our understanding of the purported economic benefits which the Proponent has described.

(3) Conclusion

Our review of the EIS for Atlantic Gold's proposed Fifteen Mile Stream Gold Project indicates that several significant climate change considerations have not been taken into account or have been taken into account insufficiently. We therefore urge IACC and NSECC to do the following:

(i) Require the Proponent to account for the lost carbon sequestration services that would flow from the proposed losses of forests and wetlands.

(ii) Carefully assess the extent to which the Proponent has accounted for future climate impacts that could affect permanent infrastructure in the middle of this century, at the end of this century, and beyond.

(iii) Require the Proponent to develop an Adaptation Plan that addresses the long-term management of its permanent infrastructure, properly taking future climate change impacts into account.

(iv) Require the Proponent to develop a GHG Management Plan.

(v) Require the Proponent to address the cumulative force of the GHG emissions that would be emitted by its three proposed gold mining projects in Nova Scotia and explain how those emissions would cumulatively affect Canada's and Nova Scotia's GHG emissions reduction goals and decarbonization pathways.

(vi) Require the Proponent to address the environmental effects of the cumulative losses of carbon-sequestering forests and wetlands within its cumulative effects analysis.

(vii) Ensure that any proposed follow up program for the proposed project meaningfully considers long-term climate change impacts.

(viii) Meaningfully assess how the emission of 35,015.4 tonnes of CO_2e per year between the hypothetical project start date and 2030 would affect Nova Scotia's GHG emissions reduction goals and decarbonization pathway.

(ix) Meaningfully assess how the emission of 35,015.4 tonnes of CO_2e per year between the hypothetical project start date and 2030 would affect Canada's emissions reduction goals and decarbonization pathway.

(x) Incorporate a social cost of carbon analysis into this environmental assessment and assess how the social cost of carbon associated with the proposed project should condition our understanding of the purported economic benefits which the Proponent has described.