Enclosure 1: Federal Authority Advice Record – Ontario Pumped Storage Hydropower Project

Please submit the completed form by April 6, 2026, via email to Nottawasaga@iaac-aeic.gc.ca.[1]

Department/Agency Contact Information

Submission Date	April 2, 2026
Department/Agency	Environment Canada – Ontario Region
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Review the Initial Project Description and answer the following questions:

1. Will your department or agency exercise a **power, perform a duty or function**, or provide **financial assistance**, related to the project to enable it to be carried out in whole or in part?

   As relevant,
   a) Specify the power, duty or function, or financial assistance, and the likelihood that it will be required to construct the project, as either Required, Potential, Likely, Unlikely or Not Required
   b) Describe any associated Indigenous or public consultation, including timelines, and elaborate on any potential opportunities for consultation coordination with the impact assessment process, if an impact assessment is required
   c) Describe any associated information requirements (e.g., alternative means assessment, habitat offsetting), and specify those that may be coordinated with the impact assessment process, if an impact assessment is required
   d) Identify any associated project-specific guidance or issues of which the proponent should be aware, or information the proponent should provide
   e) Indicate whether your department or agency has identified any power that it will be unable, or may be unable, to exercise to allow the project to proceed, in whole or in part as currently planned, with reasons; if unsure, explain what must be resolved to increase confidence

   ECCC's response to question 1 can be found in Table 2: Power, duty or function questions, which follows Table 1.

2. **Using Table 1**, identify project- and context-specific **key issues** based on the expertise within your mandate[2] and the information in your possession. Available information may include your access to databases and corporate knowledge, the Initial Project Description, any exchanges with the proponent or others related to the project and known means to address the effects.

   For each key issue:
   a) Specify the key issue (e.g., specific species and location)
   b) Specify the project component or activity linked to the key issue
   c) Explain why it is a key issue based on:
      i. biophysical effect pathway(s) from the specific project component or activity
      ii. concerns unique to the project or a priority within your mandate

[1] Please note that advice provided to IAAC may be posted on the Canadian Impact Assessment Registry Internet Site or otherwise made available to the public.
[2] Refer to the Memoranda of Understanding with IAAC.

iii. the issue being material[3] to decision-making under the *Impact Assessment Act*

d) Identify how the issue could be resolved, including through other means than an impact assessment (e.g., other regulatory oversight)
e) Identify additional information the proponent could provide to build confidence about how the issue could be addressed through other means

IAAC has prepared a preliminary list of potential effects that are either likely or unlikely to be key issues for the impact assessment.[4] While completing **Table 1**, IAAC requests that, as appropriate based on your department or agency's mandate and expertise, you validate this list, add precision or rationale where appropriate, and recommend any additional key issues for consideration. For project activities on federal lands (e.g., reservoir, powerhouse, water conveyance structures, switchyard, etc.), per section 2 of the IAA, a broader range of effects are within federal jurisdiction, including socio-economic effects.

IAAC has identified the following topics as **potential key issues** for the impact assessment:

- Effects to fish and fish habitat
  - during operations from interactions with the inlet/outlet structure such as impingement and entrainment, changes in lake flow patterns, and turbidity, which may require special attention in ongoing project design
  - during construction of the inlet/outlet structure from lake-bed disturbance and turbidity, unless this is easily managed with well understood mitigation
- Effects to the environment on federal lands
  - including federally listed species at risk, wetlands, and riparian environments that provide special habitat or functions, from construction activities and footprint location, some of which could require offsetting and special attention in ongoing project design
  - if soil contaminants are identified in overburden materials to be disturbed and/or relocated, potential changes to groundwater and surface runoff quality, to inform site specific stormwater management strategies
- Impacts to the physical and cultural heritage of Indigenous peoples and sites of archaeological importance, with a focus on potential archaeological resources on land or water, and species of cultural importance (e.g., black bear)
- Impacts to the economic conditions of Indigenous Peoples
- Effects to people from activities on federal lands, such as dust and noise interactions with base personnel, to help DND identify suitable mitigation and monitoring for any conditions it may place on a land use decision
- Positive effects of the project, including
  - economic benefits for Indigenous groups
  - contributions to Canada's ability to meet its climate change commitments for long-term targets (i.e., 2050) and displace greenhouse gas emissions in the energy sector
  - contributions to sustainability including local socio-economic benefits and Indigenous economic reconciliation

IAAC has identified the following topics as **unlikely key issues** for the impact assessment because the effects are either immaterial to decision-making, effectively managed by other regulatory mechanisms, or have well understood mitigation measures:

- Effects to fish and fish habitat from
  - loss of habitat from lake-bed footprint, which is expected to be routinely managed through an authorization under the *Fisheries Act*, if needed
  - changes to water levels in the Georgian Bay, which are anticipated to be negligible based on the volume of water taken relative to the volume in the lake
  - changes to water quality in the Georgian Bay from reservoir outflow, because the reservoir will be lined with an impermeable layer and water will not be held in the reservoir for prolonged periods

[3] An issue is material to decision making if its analysis is anticipated to affect the conclusions on (1) whether adverse effects within federal jurisdiction or direct and incidental adverse effects (collectively adverse federal effects) are likely not significant, or of low, medium or high significance; (2) appropriate mitigation measures for significant adverse federal effects; or (3) justification in the public interest.

[4] IAAC has prepared this list based on limited information prior to receipt of the Initial Project Description. It may change based on input received from federal and provincial authorities, Indigenous communities, and the public.

- Effects to migratory birds from construction activities due to well-understood mitigations measures, and regulations under the *Migratory Birds Convention Act*
- Effects to the environment on federal lands, including wildlife and vegetation that are not federally listed species at risk, as population-level effects are unlikely
- Effects on Indigenous peoples':
    - ability to access lands and resources for traditional purposes (harvesting, navigation), as IAAC understands that access to the surrounding land and water is already restricted by DND (apart from any land use near the potential transmission lines outside of the restricted use areas)
    - use of fish for traditional or commercial purposes because population-level changes to fish in the Georgian Bay are not anticipated; should fish population changes be a concern, effects to fishing would be considered
- Effects to the health, social and economic conditions of non-Indigenous peoples resulting from activities carried out on federal lands, including
    - changes to commercial and recreational use of water in the Georgian Bay as public access to the surrounding water is already restricted
    - changes to the visual environment as the project is primarily obscured from view
    - changes to drinking water quality from reservoir outflow because bay water will move in and out without alteration and an impermeable layer in the reservoir will prevent seepage
    - non-Indigenous cultural heritage resources due to well established protocols set by provincial standards, and regulatory oversight off-federal lands
    - impacts to the operations of the Canadian Armed Forces from construction and operation logistics, as DND can manage these in parallel through its Operational Impact Assessment
    - changes to socio-economic conditions in Meaford from the construction workforce as the proponent will focus on local and regional workers, where possible, and is working closely with the municipal government and community service providers
    - changes in energy pricing as this will be managed by Ontario's energy contracting policies and decisions
- Contributions to Canada's ability to meet its climate change commitments for short-term targets (i.e., 2035) because the project will cause greenhouse gas emissions during construction and no further information is required to conclude the project does not contribute to Canada's short-term targets
- Contributions to Canada's ability to meet its environmental obligations as no further information is required to conclude the project does not contribute to Canada's ability to meet its environmental obligations

Wes Plant, A/Regional Director
Name and title of Departmental / Agency Responder

April 2, 2026
Date

Table 1: Key Issues to inform the impact assessment process

This table should outline key issues to inform the impact assessment process, including whether an impact assessment is required and, if so, the scope of the assessment and tailoring of the Tailored Impact Statement Guidelines.

Key issues are the major concerns directly related to a project component or activity, the analysis of which is anticipated to be material to decision-making under the *Impact Assessment Act*.

Federal authorities' advice should be guided by the identification and resolution of key issues. If an impact assessment is required, it will be focused on key issues.

Comment ID	a) Key issue	b) Project component or activity	c)(i) Biophysical effect pathway(s)	c)(ii) Concern unique to the project or a priority within your mandate	c)(iii) Material to federal decision-making	d) Means for issue resolution	e) Additional information from the proponent
Identify each comment by your organization's acronym and a sequential comment number. *e.g.: IAAC-01*	*Specify each key issue (e.g., specific species and location).* *Include, at a minimum, the likely and unlikely key issues identified by IACC that are relevant to your expertise, and add any additional ones as required*	*Identify the project component or activity linked to the key issue.* *Be specific about the nature, scale, novelty and complexity of the component or activity.*	*Identify the specific effect pathway between the project component or activity and the affected environmental or human receptor (including Indigenous Peoples).*	*Describe why it's a key issue within the mandate of your department or agency, including in terms of priorities of the federal government and in terms of anticipated likelihood, severity or uncertainty of effects.* *Identify if the key issue is common for project activities of this nature or in this sector, or whether it is unique to this project due to the project's complexity, size or novelty; a sensitive or rare receiving environment; and/or proximity of sensitive environmental or human receptors (including Indigenous Peoples).*	*Describe why the key issue is material to decision-making as either:* *an adverse effect within federal jurisdiction, or a direct or incidental adverse effect, that may be significant based on available evidence including:* • *federal experts' knowledge and experience with past project assessments;* • *presence of sensitive species, habitats or human receptors (including Indigenous Peoples);* • *novel or complex project activities, components or technologies;* • *high uncertainties in effects or in the effectiveness of mitigation measures;* • *unknown or unproven mitigation; or* *a factor for the justification in the public interest anticipated to be material to decision-making such as a likely positive effect contributing to sustainability, to Canada's environmental obligations or climate change commitments or in supporting governmental priorities, such as reconciliation with Indigenous Peoples.*	*Describe how the key issue could be resolved or addressed by:* • *Any means, including powers, duties, functions, frameworks, policies or guidance for which your department or agency is responsible;* • *Any means, including powers, duties, functions, frameworks, policies or guidance from another jurisdiction, including the province;* • *Common, proven, well-understood or standard mitigation measures to mitigate the effect or effect pathway(s); or* • *Commitments made by the proponent (e.g., in the Initial Project Description).*	*Describe information the proponent could provide, or commitments the proponent could make, that would provide confidence that the issue can be resolved by existing means (to be considered for the Summary of Issues and response, or (potential) Tailored Impact Statement Guidelines).* *Consider whether information, studies, analyses or collaborative work with other authorities would be required to address the issue beyond existing means.*
KEY ISSUES							
ECCC-01	**Effects to the Environment on Federal Land – Species at Risk, Wetlands, Migratory Birds, Species of Cultural Importance.** **Assessment of cumulative effects under the SARA permitting process. Cumulative effects analysis is also required under the IAA process.** In addition to impacts from the proposed Ontario Pumped Storage Project (the	All activities related to the Project and relocation of DND infrastructure.	The Project and relocation of DND infrastructure will both permanently remove habitat that affects SAR, wetlands and wildlife habitat at 4CDTC.	Effects of both initiatives must be considered cumulatively as part of the *Species at Risk Act* (SARA) permitting process for the Project and relocation of DND infrastructure. The complexities of the project in terms of necessitating DND infrastructure relocation and likely severe impacts to species at risk highlight the importance of thorough cumulative effects analysis.	The cumulative effects from both projects, as currently designed, will likely result in adverse effects within federal jurisdiction that may be severe, based on federal and external expert opinion (i.e., impacts to species at risk), the presence of sensitive species, and high uncertainties in the effectiveness of mitigation measures.	The Proponent could commit in the Project Description to thoroughly scope and assess the cumulative effects created by the PSP and DND infrastructure relocation projects.	Thorough assessment of cumulative effects created by the Project and the DND infrastructure project under the SARA permitting process. Cumulative effects analysis is also required under the IAA.

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	Project) itself, the Project, as currently designed, would require the relocation of training infrastructure used by DND at 4CDTC. The relocation of this infrastructure will impact other areas of the base, including habitat for species at risk and migratory birds and wetlands, contributing to cumulative effects.						
ECCC-02	**Effects to the environment on federal land – Species at Risk (Butternut).** **Permitting under s.73(3)(c) of SARA for Butternut – assessment of jeopardy.** A SARA permit can only be issued if: (c) *the activity will not jeopardize the survival or recovery of the species;* Removal of the Butternut (Endangered) trees and associated habitat within the proposed Project footprint may jeopardize recovery of Butternut and therefore not meet SARA's preconditions for issuing a permit under s.73. **Permitting under s.73(3)(a) of SARA for Butternut – assessment of alternatives considered.**	Vegetation clearing and construction.	Vegetation clearing and construction of the Project would permanently remove all Butternut individuals and associated habitat/microclimatic conditions for the Butternut within the Project footprint. Butternut within the Project footprint are thought to be important for the viability of Butternut across 4CDTC and the surrounding area. Their removal could jeopardize recovery of the species through adverse effects to the broader subpopulation as well as through a lost opportunity to preserve and study the only known site in Canada to display high levels of recruitment and regeneration.	**SARA s.73(3)(c) - Jeopardy** This is a key issue for ECCC because removal of this site may jeopardize recovery of Butternut under the federal SARA. The Butternut found within the proposed project footprint are the only known site in Canada demonstrating natural reproduction of this magnitude and this is the foundation of recovery efforts (whether it is due to potential resistance of the trees to the Butternut canker and/or habitat conditions that favour resistance to the canker). ECCC is currently unsure whether a SARA permit could be issued for BUNU. While an application for a SARA permit for the project has not yet been received, ECCC sees potential challenges for the proponent in meeting the preconditions for issuing a SARA permit based on the project design proposed in the IPD (page 3-5). The information outlined in column C of Table 2 below, as well as in this table, will help inform this analysis.	**s.73(3)(c) - Jeopardy** Removal of this Butternut site may represent a severe adverse effect in federal jurisdiction as it could jeopardize recovery of the species. The severity of these adverse effects may be material to decision-making under the IAA as well as s.73 of SARA. Background: Anticipating the need for more information to support assessment of the pre-conditions for issuing a SARA permit, ECCC contracted the Forest Gene Conservation Association (FGCA) in 2024 to conduct a study of Butternut on 4CDTC, including within the proposed Project footprint, and to determine the significance of the footprint site in terms of recovery of the species as well as potential mitigation measures. Given the extensive declines in Butternut across North America since the introduction of the Butternut canker, finding Butternut sites that exhibit resistance to the Butternut canker and	As the Project occurs on federal lands, a SARA permit will be required for impacts to species at risk (Butternut and other species at risk (see below)). The identified key issue pertains to the potential challenges with issuing a SARA permit for impacts of the construction activities on Butternut individuals. Based on the current project design and location and given the FGCA assessment of this Butternut site, it will be challenging, without more information, to determine conclusively that the activity (which involves complete removal of all individuals and habitat in the core area showing regeneration) would not jeopardize recovery of the species. There are no means, including powers, duties, functions, frameworks, policies or guidance from another jurisdiction, including the province that could be used to address or resolve the issue. 4CDTC is entirely federal	IAAC has advised ECCC that it will include all information required to process a SARA permit application in the IA process as an annex to the Detailed Permitting Plan. ECCC has therefore included SARA permitting considerations and information requirements in our FAAR comments. Regarding the SARA permit pre-conditions: **s. 73(3)(c)** Evidence-based information demonstrating that the project will not jeopardize recovery of Butternut. **s. 73(3)(a)** To inform a robust assessment of precondition 73(3)(a) and to ensure that the best alternative has been selected for species at risk, ECCC will require a detailed analysis of alternatives to the activity (construction of the Project) that addresses: 1) Alternatives to construction of the Project, i.e. in terms of other locations and other forms of construction These alternatives should be considered in isolation and

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	A permit under s.73 of SARA can only be issued if: (a) *all reasonable alternatives to the activity that would reduce the impact on the species have been considered and the best solution has been adopted* Section 6.2.1 provides only a cursory analysis of alternative locations. This information would be insufficient to support a permitting determination under SARA s. 73(3)(a). Given impacts to SAR, ECCC would require more detailed information regarding impacts when assessing the pre-conditions under SARA s. 73(3)(a). **Permitting under s.73(3)(b) of SARA for Butternut – assessment of mitigation measures** A permit under s.73 of SARA can only be issued if: (b) *all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residences of its individuals*			**s.73(3)(a) – Alternatives** Based on ECCC's risk based approach, ECCC has determined that the Project poses a high degree of risk to Butternut and therefore requires a higher level of analysis and scrutiny than for projects that impact SAR to a lesser extent. Severe effects to Butternut (and uncertainty that the project will not jeopardize recovery), coupled with uncertainty that pumped storage is viewed as a favourable energy storage option compared to alternatives by the IESO necessitates thorough analysis of reasonable alternatives including with respect to impacts on SAR. Given the nature of this project, extent of impacts and existence of other alternatives, a thorough assessment of alternatives is essential to support the regulatory process. **s.73(3)(b) – Mitigation measures** ECCC's risk-based approach indicates a higher level of analysis and scrutiny with higher levels of risk. Severe effects to Butternut (and doubt that the project will not jeopardize recovery) indicate the importance of avoidance and minimization measures over restoration and offsetting.	that have the ability to reproduce is viewed as the foundation for recovery efforts. As a result of Butternut canker, abundant natural regeneration is almost unknown in this species and recruitment into mature age classes was previously believed to have ceased in Canada. The FGCA found that the Butternut within the proposed Project footprint are near unique in terms of the level of recruitment and regeneration. Regeneration has been observed at other sites, including other sites at 4CDTC, but not to the extent observed in the Butternut within the proposed project footprint and not coupled with a high level of recruitment to older age classes. It is unknown whether these characteristics are occurring because of genetic adaptation or site-based microclimatic conditions that favour resistance. The Butternut within the Project footprint are thought to play an important role in the perpetuation and recovery of other Butternut on 4CDTC and the surrounding area. Further, this is the only known site in Canada (and possibly North America) where there is an opportunity to study a population that has a large number of adult trees, saplings showing past regeneration, and recent regeneration. Therefore, based on best available information, the discovery of	land and under federal jurisdiction. There are common, proven, well-understood or standard mitigation measures that ***could*** be used to mitigate the effect or effect pathway(s). For example, the location of the Project's upper reservoir could be adjusted to avoid the Butternut site. However, to date and including what is presented in the IPD, TCE has indicated that the PSP must be built as designed in the location proposed, subject to final design changes. Primarily, that the reservoir must be constructed in the identified location. It is not clear that other potential measures (such as population relocation or augmentation, seed collection, establishment of a seed orchard) would sufficiently mitigate impacts associated with the current project design to the extent that there would be confidence that it would not jeopardize recovery of the species. These measures involve substantial risks, particularly since the aspects that enable Butternut to realize unprecedented regeneration at this site are not well understood. Resolution of the issue could be achieved should TCE commit to relocating the Project's upper	cumulatively (i.e., a combination of techniques). 2) Of the reasonable alternatives, the best option from a species at risk perspective. **s. 73(3)(b)** Mitigation measures including avoidance and minimization, such as siting the Project's upper reservoir so that it does not remove the Butternut site in question or minimizing the footprint of the reservoir to an extent that Butternut could remain viable and ecologically functioning at the site (note that this extent is currently unknown). It is acknowledged that a subsequent SARA permit application may contain more detail in terms of alternatives to the proposed activity and mitigation measures.

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	The IPD does not identify any measures to avoid or reduce the impact to Butternut such as relocation to other areas of 4CDTC or reducing the footprint. Based on the uncertainties with respect to the three SARA permit pre-conditions noted above and available information presented in the IPD, there is uncertainty whether a permit under SARA s.73(3)(a) can be issued.				a viable and ecologically functioning Butternut site has important implications for the recovery for the species. Removal of this Butternut site may represent a severe adverse effect in federal jurisdiction as it could jeopardize recovery of the species. **s.73(3)(a) – Alternatives** Detailed assessment of alternatives is material to decision-making under the IAA as well as s.73 of SARA. **s.73(3)(b) – Mitigation measures** Confidence that all feasible measures will be taken to minimize the impact of project activities is material to decision-making under the IAA and s.73 of SARA.	reservoir to a location that did not remove the Butternut site in question, or to minimizing the footprint of the reservoir to an extent that Butternut could remain viable and ecologically functioning at the site (note that this extent is currently unknown and would likely be difficult to ascertain, even with extensive study). To date, TCE has indicated these measures are not feasible. In its review of potential mitigation measures for removal of the Butternut located within the proposed project footprint, FGCA stated: *the on-site conditions located within the project footprint at 4CDTC may be irreplaceable and there is no substitute for in-situ ecosystem protection of the butternut site*.	
ECCC-03	**Effects to fish and fish habitat during operations from interactions with the inlet/outlet structure, specifically, changes in lake flow patterns.**	The activities linked to the operation of the Project may cause changes in lake flow patterns in the Georgian Bay through frequent water withdrawals and discharges from the lower inlet/outlet structure.	During operation, water withdrawals and releases between Georgian Bay and the upper reservoir at the lower inlet/outlet structure may change flow hydrodynamics, potentially affecting circulation, sediment transport, and vertical stratification in Georgian Bay. Depending on the selected construction method, these changes could also occur as a result of dewatering and in-water work at the Project site. These changes could impact fish and fish habitat through altered current patterns and temperatures, erosion, and sediment deposition.	Water quality and quantity have potential to lead to a significant adverse impact on fish and fish habitat.	Water quality and quantity can result in adverse impacts to fish and fish habitat, which are effects within federal jurisdiction.	Follow best practices to mitigate potential adverse effects associated with fish and fish habitat disturbance and based on proposed operational conditions and water management.	ECCC recommends that the Proponent describes all potential effects, both direct and indirect, of project components or activities on water quality, quantity and fish and fish habitat at a suitable spatial and temporal scale. This includes assessing potential changes to natural flow patterns from withdrawals and releases to the lower reservoir (Georgian Bay), and evaluating potential impacts on water levels, nearshore circulation, and vertical stratification resulting from the proposed operational conditions. The Proponent should include a detailed characterization of the receiving environment under

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							baseline conditions and evaluate potential Project-related effects through each phase of the Project. Effects assessment must consider the variability of environmental conditions through the year and consider potential Project-related effects under climate change.
ECCC-04	**Effects to people from activities on federal lands, such as dust interactions with base personnel, to help DND identify suitable mitigation and monitoring for any conditions it may place on a land use decision.** **In addition to dust (particulate matter (PM) as a key issue, combustion-related air contaminants such as nitrogen oxides (NOx), sulphur oxides (SOx), and volatile organic compounds (VOCs) may also be key issues.**	The construction phase is expected to span approximately five and a half years (2029–2035) and will involve large-scale excavation activities, including drilling, blasting and tunneling for the Water Conveyance Structures and Powerhouse, as well as soil and bedrock removal for the Ring Dam and Reservoir on or adjacent to federal lands within 4 CDTC Garrison. These works will require sustained use of heavy machinery and haul trucks travelling on unpaved access routes, generating both PM and combustion-related emissions from on-road vehicles, mobile off-road equipment and stationary machinery. The construction footprint is also located in proximity to shoreline residential areas and other sensitive receptors, which increases the importance of construction-phase air quality considerations.	Emissions of PM, combustion-related air contaminants (from equipment and vehicles burning hydrocarbon fuel during construction activities), and dust generated during construction activities (including soil stripping and grading, site infrastructure construction, and through vehicle and equipment movement on the construction footprint and unpaved roads) may result in short-term degradation of local air quality. These emissions have the potential to affect sensitive human receptors, including nearby residential areas along the Georgian Bay shore located within approximately 500 m of Project components, as well as base personnel, facilities within the adjacent 4 CDTC Garrison and nearby Indigenous communities (Section 4.2, p.4-2 of the IPD).	ECCC concurs that this may be a key issue because construction-phase emissions have the potential to affect sensitive receptors located on or adjacent to federal lands, including Indigenous communities and nearby residences, which falls directly within the federal mandate to consider effects to Indigenous peoples from project activities occurring on federal lands. The anticipated five-year duration and large scale of construction activities increase the likelihood of air quality effects during construction, and there is uncertainty regarding the severity of these effects in the absence of a detailed construction-phase assessment. While dust and combustion-related emissions are common for projects of this nature, the proximity of Indigenous communities and other sensitive receptors warrants consideration within ECCC's mandate. ECCC provides expertise on the fate and dispersion of air emissions to support Health Canada's assessment of potential impacts on sensitive receptors.	The health of Indigenous Peoples in Canada is a federal responsibility. This means that any adverse impacts to these receptors as a result of Project-related changes to air quality would be an adverse effect within federal jurisdiction. In the absence of detailed construction methodologies, construction sequencing or planned mitigation measures, impacts to human receptors as a result of changes to local air quality remains a key issue. Construction-phase effects to air quality have the potential to result in health impacts to Indigenous Peoples and other sensitive human receptors (e.g., base personnel) located on or near federal lands.	Concerns regarding effects due to dust generation during construction and release of emissions could be addressed through a detailed air quality assessment and implementation of standard mitigation and monitoring measures. In addition, while the Proponent has expressed intentions to transition its fleet toward electrification and to promote participation of local contractors (section 9.1.4.1, p.9-3), encouraging or prioritizing the use of lower-emission construction equipment (e.g., Tier 4) by local contractors would help reduce combustion-related air emissions during construction. ECCC recommends that the Proponent consider relevant mitigation measures for the construction phase from recognized guidance documents, such as the Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities: http://www.bv.transports.gouv.qc.ca/mono/1173259.pdf	The Proponent should provide a detailed construction-phase air quality assessment or modelling, as well as a list of mitigation measures that will be implemented to reduce emissions of air contaminants (e.g., nitrogen oxides [NO_x], sulphur oxides [SO_x], carbon monoxide [CO], and volatile organic compounds [VOCs]), and especially dust and PM, during construction , noting that these measures have not yet been developed and are expected to be included in the future Construction Management Plan. The Proponent should also provide details on the follow-up air quality monitoring program to be implemented during the construction phase, as no specific information on air quality monitoring has been provided to date. Monitoring is relevant to verifying the effectiveness of implemented mitigation measures and supporting adaptive management if needed. The Proponent should further clarify whether a complaint tracking system for residents and other sensitive receptors is planned as part of this follow-up. In addition, the Proponent should provide a map identifying nearby sensitive receptors, including Indigenous communities and residences, to contextualize potential localized air quality effects during construction.

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							Baseline air quality conditions should also be characterized using representative National Air Pollution Surveillance (NAPS) data or other appropriate sources to adequately characterize ambient air quality at the site. Given that multiple construction methods are still under consideration (e.g., underground excavation versus surface works (section 3.1.2, p.3-5)), the Proponent should describe how air quality considerations will inform the selection of approaches that minimize impacts on sensitive receptors.
ECCC-05	**Potential changes to surface water quality on federal land if soil contaminants are identified in overburden materials to be disturbed and/or relocated.** IAAC suggests this key issue should be used to inform site specific stormwater management strategies.	Inland site preparation and construction activities that disturb or relocate soil and overburden materials.	Any existing contaminants in disturbed soils could be exposed, mobilized in surface water runoff, and enter nearby water bodies. Any material suitable for construction of the ring dam or for reclamation activities from the excess soil and overburden produced during the construction of the Project will be stockpiled on site. Should any contaminants be identified in those materials, there is potential for runoff that contains those contaminants to be discharged to adjacent surface waters.	Water quality changes have the potential to lead to an adverse impact on fish and fish habitat. It is common for projects that result in excess soil and overburden to require that material to be stockpiled for later use for construction, reclamation, or excess material to be disposed offsite.	ECCC has the responsibility for administering the pollution prevention provisions of the *Fisheries Act.* Should the construction or operation of the Project result in the deposit of contaminants in runoff from soil or overburden stockpiled at site into surface waters, it may lead to impacts to water quality and effects to fish and fish habitat.	The Proponent should consider the effects that may arise from the Project, the technically and economically feasible mitigation measures that will be applied, and any residual effects. Some measures that may be considered include: preventing the deposit of runoff from soil and overburden stockpiles containing or potentially containing contaminants to surface waters; development of site specific runoff and stormwater management and monitoring strategies; development of erosion and sediment control plan that contains means and measures to collect, retain, and prevent the deposit of runoff containing contaminants.	Test disturbed soils and soils stored onsite for contaminants. Assess the potential for any identified soil contaminants to be mobilized into receiving surface waters. Identify the technically and economically feasible mitigation measures that will be applied to address any potential effects.
ECCC-06	**Effects to fish and fish habitat from changes to water quality in the Georgian Bay from reservoir outflow.**	Operation of the reservoir and discharge into Georgian Bay.	The water in the reservoir can undergo water chemistry changes through interaction with the materials used in the construction of the ring dam and the materials forming the base of the reservoir, resulting	ECCC's mandate includes the preservation and enhancement of the quality of the natural environment including water.	ECCC has the responsibility for administering the pollution prevention provisions of the *Fisheries Act.*	The Project assessment should include a discussion of the potential risks to changes in water chemistry (e.g., mercury mobilization and methylation, metal	Provide examples from the literature or data from other pumped storage hydropower projects that mercury mobilization and methylmercury production is not expected to occur.

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	IAAC suggests this is not likely to be a key issue because the reservoir will be lined with an impermeable layer and water will not be held in the reservoir for prolonged periods, however ECCC suggests there are potential key effects related to changes in water chemistry and identifies it is only the ring dam that will be lined with an impermeable layer, not the entire reservoir.		in acid rock drainage and metal leaching (including at neutral pH), and adverse effects to fish in Georgian Bay when the water is discharged. If the native or imported rock contain elevated sulphur used in the base or the dam then it is possible that material could go acidic and cause acid rock drainage and the leaching of metals (ARD/ML). It is entirely possible that the leaching of metals and metalloids (e.g. arsenic) could occur from the rock and the materials at neutral ph. The risks of ARD/ML cannot be known without a geochemical characterization done in accordance with the common approaches and standards set by NRCan. Hydropower generation has been linked to elevated methylmercury) concentrations in impoundments (Ni et al. 2021). It is not known if a pumped storage hydropower reservoir would present similar risks of mercury mobilization or methylmercury production to that of a conventional hydropower facility with a reservoir. ECCC flags that the water in the reservoir may undergo water chemistry changes through interaction with the materials that form the base of the reservoir, resulting in the mobilization of mercury and/or production of methylmercury, and have the potential to cause adverse effects to fish in Georgian Bay when the water is discharged. Reference: F.J. Ni, S.P. Bhavsar, D. Poirier, B. Branfireun, S. Petro,	There is no information in the IPD on the geochemistry of the excess soil and overburden to be produced during construction at site and potentially utilized in the construction of the ring dam or more important the geochemistry of any rock or overburden material to be imported to the site for the construction of the ring dam and any other part of the reservoir structure used to retain water. ARD/ML from a constructed dam and the base of the reservoir can be quite common depending on the chemistry of the rock and overburden of both the existing and imported materials used in construction. Mercury mobilization and methylmercury production from hydropower generation is known to occur at projects but it is unknown if a pumped storage hydropower project has the potential for similar risk.	Should the construction or operation of the Project result in metal leaching, mercury mobilization, or methylmercury production, this would lead to the deposit of those substances into Georgian Bay when the water from the production of hydropower is returned. ECCC experts have had recent experiences with a project in the Tiverton area whereby the native rock to be excavated and stockpiled for the construction of an underground facility showed the potential for the leaching of arsenic at elevated levels (concentrations above the CCME CWQGPAL). There is the potential for materials between the two sites to be geologically similar.	leaching and a characterization of the geochemical composition of materials used to construct the ring dam and the materials forming the base of the reservoir.	Complete a geochemical characterization of materials used in the ring dam and the materials forming the base of the reservoir. Demonstrate that the materials to be stockpiled on site and/or used for the construction of the ring dam are not contaminated and will not result in ARD.

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			M.T. Arts, R. Chong-Kit, C.P.J. Mitchell, G.B. Arhonditsis Impacts of water level fluctuations on mercury concentrations in hydropower reservoirs: a microcosm experiment, Ecotoxicol. Environ. Saf., 220 (2021)				
ECCC-07	<u>Proposed Additional Key Issue:</u> **Effects to the environment on federal lands and effects to fish and fish habitat in Georgian Bay due to spills of hazardous substances.** **Effects of malfunctions or accidents that may occur in connection with the designated project.**	Site preparation and construction of the facility will involve use of diesel and gasoline-powered heavy equipment. Construction machinery may also make use of hydraulic oils and lubricants. Construction will involve work at various sites on land as well as on the lakebed of Georgian Bay. During operation, the facility will likely make use of equipment that contains hydraulic oils, lubricants, and transformer oil. Given the scale of the Project, its complexity, and the hazardous nature of several of the substances that may be handled, stored, and used as part of the Project, there is potential for non-negligible adverse effects within federal jurisdiction if accidents and malfunctions result in their release to the land or water.	The Project being considered involves major works involving water. Spills of hazardous substances during construction and operation of the Project could directly enter the water or run off to the water from the land. Such spills could result in non-negligible adverse impacts to components of the environment under federal jurisdiction including fish and fish habitat. Adverse impacts to these components of the environment under federal jurisdiction could further result in non-negligible adverse impacts to Indigenous Peoples of Canada with respect to the current use of lands and resources for traditional purposes.	Water quality effects to fish and fish habitat are within the mandate of ECCC as the administrator of section 36(3) of the *Fisheries Act*. Further, ECCC has environmental emergency management planning expertise and guidance related to potential accidents and malfunctions involving unplanned or uncontrolled releases or spills of hazardous substances into the environment, including scenarios where such releases could result in non-negligeable adverse environmental effects within ECCC's mandate. Additionally, ECCC coordinates expert review of fate and behaviour of contaminants, and hydrologic trajectory modelling of contaminants in water.	Given the close association of the Project with water, spills of hazardous substances involved in the construction or operation of the Project could result in non-negligible adverse effects to fish and fish habitat. The Project is also taking place partially on federal lands, thus spills of hazardous substances could also cause non-negligible adverse impacts to the environment on federal lands. A federal review is therefore warranted to ensure that the proposed mitigation measures are sufficient to address these potential adverse effects.	The implementation of effective mitigation measures (e.g., secondary containment for tanks storing hazardous substances, spill kits) and plans (e.g., spill contingency plan, emergency response plan, waste management plan) will be critical to minimize the potential for spills and mitigate their impacts. Optimized spill prevention, preparedness, and response measures and systems will be important during all activities associated with the construction and operation of the Project, given the risk of release of hazardous substances to the environment. This includes: • Implementation of effective mitigation measures, for example use of secondary containment for storage tanks containing hazardous substances, and the presence of appropriately stocked spill kits, which will help to reduce the risk of hazardous substances being released to the environment. • Development of comprehensive plans, including a spill	Assessing the risk of accidents and malfunctions and the effectiveness of the proposed mitigation measures and plans is an important component of understanding the overall potential adverse effects of the Project on areas under federal jurisdiction. The Proponent could commit to the following items, which would provide confidence that potential accident and malfunction scenarios associated with the Project have been adequately considered and prepared for, and that the risks of adverse impacts to components of the environment under federal jurisdiction are minimized: • Conducting a risk assessment of plausible accident and malfunction scenarios: 1) that could result from the activities proposed in the Project; and, 2) that could result from the impact of natural hazards or environmental conditions at the proposed Project site. • Adopting all relevant industry best-practices regarding prevention, preparedness, response, and recovery in the context of spills resulting from accidents and malfunctions.

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						contingency plan, emergency response plan, and waste management plan, which will help to reduce the risk of accidents and malfunctions from occurring, and equip responders with knowledge necessary to rapidly and effectively respond should spills occur. Part 8 of the *Canadian Environmental Protection Act, 1999* on environmental emergencies (sections 193 to 205) addresses the prevention of, preparedness for, response to, and recovery from environmental emergencies caused by uncontrolled, unplanned, or accidental releases. It also addresses the reduction of any foreseeable likelihood of releases of toxic or other hazardous substances listed in Schedule 1 of the *Environmental Emergency Regulations, 2019*. This Act may apply if Schedule 1 substances onsite meet or exceed the threshold to be regulated under the *Canadian Environmental Protection Act, 1999*. Technical Guidelines for the *Environmental Emergency Regulations, 2019* may be found at: https://www.canada.ca/en/environment-climate-change/services/environmental-emergencies-program/regulations/technical-guidelines.html	

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ECCC-08	<u>Proposed Additional Key Issue:</u> **Effects to the environment on federal lands and effects to fish and fish habitat in Georgian Bay, if there is a failure of the water management infrastructure.** **Changes to the designated project that may be caused by the environment.**	Operation of the water management infrastructure, including the ring dam.	There is the potential for climate change to alter environmental conditions in the project area. These changes may affect sensitive project components, causing accidents or malfunctions that may have impacts on the surrounding environment. Climate over the lifetime of the Project is likely to be different from past and current climate in the project area. Climate changes in the project area, such as possible changes in mean and extreme precipitation and temperature and related environmental conditions, may alter baseline conditions, with implications for climate sensitive aspects of project design and associated effects within federal jurisdiction. Project components and activities for which climate change resilience could be important for this Project include those related to water management infrastructure and systems. In particular, adverse effects of the environment on the water management infrastructure due to climate change, such as the ring dam, could lead to malfunction and uncontrolled release of materials and water from the reservoir into nearby federal land and Georgian Bay with adverse effects on surface water quality.	Effects to fish and fish habitat from surface water quality are within the mandate of ECCC, as are considerations related to climate change resilience.	Adverse effects to fish and fish habitat from changes to surface water quality caused by accidents and malfunctions of the water management infrastructure are within federal jurisdiction and is a key issue due to the potential magnitude and uncertainty of the effect.	ECCC understands that the *Dominion Waterpower Act* approvals process being undertaken by CIRNAC will help to address this key issue as it involves an engineering review of the water management infrastructure, including the ring dam. The Strategic Assessment of Climate Change (SACC) was published in 2020 and works in conjunction with the *Impact Assessment Act* to provide guidance on how to consider climate change throughout federal impact assessments. This includes consideration of how the project is resilient to, and at risk from, both the current and future impacts of a changing climate.	The Proponent should provide information on how the water management infrastructure will be designed, operated and maintained to prevent any accidental releases of water or other materials into surface water, and include considerations related to how it will remain resilient to climate change. Relevant information to assist the Proponent is provided in the “Draft technical guide related to the Strategic Assessment of Climate Change: Assessing climate change resilience” published in March 2022, to complement the SACC. Links: “Strategic Assessment of Climate Change” https://www.strategicassessmentclimatechange.ca “Draft technical guide related to the Strategic Assessment of Climate Change: Assessing climate change resilience” https://www.strategicassessmentclimatechange.ca/28896/widgets/117114/documents/77106
ECCC-09	<u>Proposed Additional Key Issue:</u> IAAC suggests contributions to Canada’s ability to meet its climate change commitments	The construction, operation, and decommissioning of the proposed Project may result in GHG emissions or impacts to carbon sinks.	N/A	ECCC is not supportive of IAAC’s approach to separate the considerations of the Project’s impacts on ‘short-term’ (2035) and ‘long-term’ (2050) commitments and at this stage in the process, does not share the view that	GHG information associated with the Project would assist in determining if the Project will contribute to Canada’s ability to meet its environmental obligations and its commitments in respect to climate change.	Should the Project be subject to an IA under the IAA, IAAC should request as part of the Tailored Impact Statement Guidelines, that GHGs and climate change be assessed as per the	The Proponent may find the technical guidance of the SACC helpful in assessing the impacts to climate change. Information typically requested for the Project description is outlined in the SACC (including Section 4.1) and the

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	for short-term targets (i.e., 2035) is an Unlikely Key Issue because the Project will cause greenhouse gas (GHG) emissions during construction and no further information is required to conclude the Project does not contribute to Canada's short-term targets. IAAC suggests Positive effects due to contributions to Canada's ability to meet its climate change commitments for long-term targets (i.e., 2050) and displace GHG emissions in the energy sector is a Likely Key Issue.			the impact on the short-term commitments is 'unlikely to be a key issue'. GHG emissions are cumulative in nature and there is no technical justification to exclude emissions generated from an individual phase of the Project when considering Canada's ability to meet its climate change commitments. For example, excluding consideration of the construction phase emissions would mean that an important emissions source is not assessed, and mitigation measures are not considered. This information is key to an assessment and in the overall contribution determination of this Project to the government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change. IAAC's proposed approach deviates from the federal approach to assessing GHG emissions and climate change during all Project phases (construction, operation and decommissioning). Considering GHG emissions for this Project only during select phases is inconsistent with the approach of assessing GHGs in a consistent, predictable and transparent manner. This would lead to an underestimation of GHG emissions and risk undermining the integrity of the determination on whether a Project contributes to or		established federal approach. The Proponent should be pointed to the SACC and its technical guides, which provide guidance on how to consider climate change throughout federal impact assessments. Given that GHG emissions have a cumulative climate change impact, ECCC recommends that measures to mitigate GHGs be considered throughout all phases of the Project by using the SACC and its associated technical guides. This would enhance overall GHG performance of the Project and demonstrate to Canadians that net zero and climate resilience considerations have been duly considered and addressed by the government.	draft Technical Guide (including Sections 2.4, 3.3 and 4.2). The SACC and the draft Technical Guide can be found at: https://www.strategicassessmentclimatechange.ca

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				hinders Canada's climate change commitments. ECCC is of the view that given the preliminary information provided in the early planning stage of the Project, uncertainty remains around whether the Project will, in fact, contribute to Canada meeting its climate goals. To properly assess whether the Project "contributes", the Project's operation phase emissions should be compared to a baseline scenario where the Project was not built. The source of the electricity generation will be an important factor in this determination – for Ontario, it would likely be either natural gas, nuclear or hydro. The emissions related to the operation phase (likely acquired energy) of the *project scenario* will need to be compared against the emissions related to the generation of the same amount of electricity in the *baseline scenario* (i.e., the no Project case). This is required to support the determination on whether the Project would "contribute" to the government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change. If the *project scenario* emissions are higher than the *baseline scenario* emissions, it would likely indicate that the Project does not contribute. This could be the case if the *project scenario* acquires energy from a higher-emitting source, such as natural has, and the			

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				energy that it is displacing is from a low-emitting source, such as nuclear or hydro. The Proponent is encouraged to review Section 2.1.2 and 2.1.3 of the Strategic Assessment of Climate Change (SACC) technical guidance for details on how to perform this analysis. These comparisons are required to accurately determine under s.63(b) of the *Impact Assessment Act* (IAA) whether the Project will contribute to the government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change. It is ECCC's view that all phases of the Project need to be assessed and deeper analyses, such as the above-mentioned comparison, are required for the "contribute" determination. Should the Project be subject to an impact assessment under the IAA, IAAC should request, as part of the Tailored Impact Statement Guidelines, that GHGs and climate change be assessed per the established federal approach. The Proponent should be pointed to the SACC and its technical guides.			
UNLIKELY KEY ISSUES							
ECCC-10	**Effects to the Environment on Federal Land – Species at Risk (Other SAR).** IAAC suggests this is unlikely to be a key issue as population-	Vegetation clearing and project construction	Vegetation clearing and project construction will likely impact individuals and/or residences of these species			Conditions within a SARA permit would necessarily ensure adequate mitigation and that there is no jeopardy to the recovery of the species.	See Table 2, column (c), below. Update the IPD Table 10-11: Wildlife SAR Identified to Date to indicate that Monarch is listed as Endangered under SARA

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	level effects are unlikely. **Impacts to other species at risk and permitting.** Based on the currently available information, there may be permitting requirements for other species at risk including: Monarch, SAR bats, and Western Chorus Frog. Although one or more permits may be required for impacts to these species and/or their residences, based on the available information, there does not appear to be significant issues preventing the issuance of such permit(s).						
ECCC-11	**Effects to the Environment on Federal Land – Wetlands.** **Destruction and degradation of wetland habitat.** IAAC has suggested effects to wetlands on federal lands from construction activities and footprint location, some of which could require offsetting and special attention in ongoing project design is a potential key issue. Construction of the Project and relocation of DND infrastructure will impact wetlands on federal lands and the	Vegetation clearing and Project construction	Vegetation clearing and project construction is expected to remove and degrade small amounts of wetland habitat within the Project footprint and surrounding area.	Because impacts to wetlands from the Project, based on current design, are not believed to be significant and can likely be dealt with through normal FPWC mechanisms, ECCC suggests this is not a likely key issue.		Based on the IPD for the Project and discussions to date with DND, managing impacts to wetlands under the FPWC (i.e., ensuring No Net Loss of wetland function) is expected to be feasible. A wetland compensation plan may be required.	The location and area of wetland habitat impacted by the Project. Mitigation and compensation measures for wetland habitat.

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	Federal Policy on Wetland Conservation (FPWC) applies.						
ECCC-12	**Effects to Migratory Birds (and their habitat) from construction activities.** IAAC suggests this is not likely to be a key issue due to well-understood mitigations measures, and regulations under the *Migratory Birds Convention Act* (MBCA).	Vegetation clearing and Project construction	Vegetation clearing and Project construction is expected to remove small amounts of bird habitat and displace individuals.	Displacement of birds and loss of habitat are not considered key issues for this Project.		Effects to migratory bird individuals, nests, and eggs can be managed through adherence to the MBCA and *Migratory Birds Regulations* (MBR) 2022, including requirements for year-round nest protection for species listed under Schedule 1 of the MBR, such as Great Blue Heron and Pileated Woodpecker.	Standard mitigation measures to reduce impacts on migratory birds
ECCC-13	**Effects to the Environment on Federal Land – Wildlife and Vegetation that are not federally listed species at risk.** IAAC suggests this is not likely to be a key issue as population-level effects are unlikely.	Vegetation clearing and Project construction	Vegetation clearing and Project construction is expected to remove small amounts of wildlife habitat and displace individuals.	Displacement of wildlife and loss of habitat are not considered key issues for this Project.			Standard mitigation measures to reduce impacts on wildlife.
ECCC-14	**Effects to fish and fish habitat during operations from interactions with the inlet/outlet structure such as turbidity.** IAAC suggests this may require special attention in ongoing project design.	Operation of the inlet/outlet structure	ECCC is not identifying this as a potential key issue so therefore identifying a specific effect pathway between the project and the environment is not applicable.	ECCC is not identifying the operation of the inlet/outlet structure as a potential key issue. ECCC is not aware of turbidity associated with the operation of an inlet/outlet structure being an issue at other projects with similar inlet/outlet structures.	N/A	N/A	N/A
ECCC-15	**Effects to fish and fish habitat during construction of the inlet/outlet structure from lake-bed disturbance and turbidity.** IAAC suggests, however, that this would	Construction of the inlet/outlet structure.	Disturbance to the lakebed during inlet/outlet construction can result in suspension of sediments. High suspended sediment can have adverse effects on fish.	Water quality and quantity have potential to lead to an adverse impact on fish and fish habitat.	ECCC has the responsibility for the pollution prevention provisions of the *Fisheries Act.*	The Proponent should identify which common, proven, well-understood or standard mitigation measures to mitigate and/or prevent the effect which ECCC expects to be available.	Provide a list and description of the mitigation measures (including references to the literature or existing guidelines) to be used to prevent any potential effects.

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	not be a likely key issue if this is easily managed with well understood mitigation.						
ECCC-16	**Greenhouse gas (GHG) emissions and climate change**	Greenhouse gas (GHG) emissions and climate change	N/A	See ECCC-09 above.	See ECCC-09 above.	The Proponent states that during operations, the Project will not directly release GHG emissions during electricity production but acknowledges the indirect GHG emissions associated with electricity production from the Ontario grid during pumping. ECCC recommends that, following methodologies outlined in the SACC, the GHG emissions from acquired energy be accounted for in the GHG emissions estimate for the operations. The acquired energy should also be considered for the calculation of the "potential to reduce Ontario's electricity system CO2 emissions".	The Proponent states that the GHG emissions estimate will follow the guidance described in the SACC. ECCC recommends that, in accordance with the SACC, the emission estimate should consider the acquired energy as part of the net GHG emissions for operations.
ECCC-17	**Greenhouse gas (GHG) emissions and climate change**	The impact of the Project on carbon sinks	NA	See ECCC-09 above.	See ECCC-09 above.	The Proponent includes the clearing of vegetation and soil in the GHG emission estimate for construction, for the clearing of 135 ha of land. In addition to the GHG emission impact of land use change, ECCC recommends the Proponent consider the impact on carbon sinks (measured in tonnes of Carbon, C).	ECCC recommends the Proponent reference the SACC and the associated Technical Guide for methodologies for the consideration of the impact of the Project on carbon sinks.

Table 2: Power, duty or function questions (questions 1 A to E, above)

Power, duty or function (Permit)	a) Specify the power, duty or function, or financial assistance, and the likelihood that it will be required to construct the project, as either Required, Potential, Likely, Unlikely or Not Required. Include details on the likelihood a permit will be required. Describe why the permit is required or how the proponent can confirm if the permit is required. Identify project-specific milestones and timelines for the proponent to complete the permitting process.	b) Describe any associated Indigenous or public consultation, including timelines, and elaborate on any potential opportunities for consultation coordination with the impact assessment process, if an impact assessment is required	c) Describe any associated information requirements (e.g., alternative means assessment, habitat offsetting), and specify those that may be coordinated with the impact assessment process, if an impact assessment is required	d) Identify any associated project-specific guidance or issues of which the proponent should be aware, or information the proponent should provide	e) Is this a power that your department will be unable, or may be unable, to exercise to allow the project to proceed, in whole or in part as currently planned, with reasons; if unsure, explain what must be resolved to increase confidence

Permit under the *Species at Risk Act* (SARA)	Based on the current project design, a SARA permit will be required for:
	• Butternut (BUNU)
	• Western Chorus Frog, Great Lakes / St. Lawrence - Canadian Shield population (WCF)
	• Little Brown Myotis, Northern Myotis, and Tri-coloured Bat (SAR bats)
	
	A SARA permit may potentially be required for:
	• Monarch
	• Red-headed Woodpecker
	
	The current Project design is expected to impact BUNU individuals, and WCF and SAR bat individuals and residences, in a manner that is prohibited under SARA without a permit. Based on current information, it is not clear if there will be impacts to Monarch individuals and/or residences.
	
	Note that Eastern Red Bat, Hoary Bat, and Silver-haired Bat have been assessed as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and Black Ash has been assessed as Threatened, but these species have not yet been listed under SARA. Should SARA listing occur before completion of the project, a SARA permit may also be required for these species.
	
	A SARA permit application should be received at least 90 days prior to the start of project activities. A SARA permit cannot be issued until a decision is made under s.60(1) of the IAA.
	
	Applications for a SARA permit must be submitted via ECCC's Species at Risk Act Permit System. More information on the application process can be found here: Guidelines for permitting under Section 73 of Species at Risk Act - Canada.ca.
		ECCC would evaluate and determine consultation requirements, if any.
		
		ECCC-led Indigenous consultations related to the issuance of SARA permits will be coordinated with consultation during the impact assessment where possible.
		
		The proposed Project does not take place on First Nation lands so there are no requirements under s. 73(5) but Saugeen Ojibway Nation (SON) is located close by and has been in active discussions with TCE and may partner on the project. During the analysis and before the regulatory decision it may be advisable for ECCC to engage SON directly to share information from the perspective of ECCC.
			Information requirements for a SARA permit could be coordinated with the impact assessment process.
			
			Information requirements include:
			• Final Project design, component locations, and footprints
			• Confirmation of whether Monarch individuals or residences would be impacted
			• A description of the reasonable alternatives to the Ontario Pumped Storage Project that would reduce the impact on BUNU, WCF, and SAR bats, and potentially Monarch and Red-headed Woodpecker
			  • To clarify, reasonable alternatives could include other locations for the Project and other methods for storing electricity that may influence the degree to which the Project impacts these species
			• An explanation of why the identified alternative is the best solution with the conservation of the species in mind.
			  • To clarify, a recent judicial review indicates that the "best solution" requirement mandates a thorough comparison of all potential sites and activities to find the one with the least impact on species at risk, not just within a limited set of options. Alternatives to an activity's impact must not only be "reasonable" but also must lead to the best solution for species at risk, which requires demonstrating a reduced impact compared to other options
			• A description of all mitigation measures being considered to minimize the impact
				See additional information in Table 1.
				
				Butternut is emerging as a unique and challenging issue as baseline data is collected and shared that point to the significance of Butternut found at the Project site.
				
				Through contract with ECCC, the Forest Gene Conservation Association (FGCA) surveyed Butternut in 2024 at the 4th Canadian Division Training Centre (4CDTC) property where the Project is proposed to be located.
				
				Information suggests the Butternut site within the current proposed footprint of the upper reservoir is near unique in terms of exhibiting natural regeneration and recruitment of seedlings and saplings into older age classes. Populations of Butternut that exhibit resistance to the Butternut canker and the ability to reproduce are viewed as the foundation for recovery efforts. No other Canadian site is known to show this level of recruitment to later year classes.
				
				As per the mitigation hierarchy, avoidance and minimization measures should be considered before restoration and offsetting measures. Since the current Project design of the upper reservoir does not appear to consider avoidance or minimization of impacts to BUNU, the best chance of success for any restoration or offsetting measures, such as population enhancement or establishment of future plantings, would be for those activities to occur as close to the original site as possible (which may
					Regarding WCF, SAR bats, and Monarch, it may be possible to issue a SARA permit provided that adequate mitigation and compensation are proposed in a SARA permit application (i.e., would likely pass preconditions b and c). However, in the absence of additional information on alternatives considered, it is not clear that precondition (a) on alternatives would be met given that use of other sites and technologies may be better alternatives for these species.
					
					ECCC is currently unsure whether a SARA permit could be issued for BUNU. While an application for a SARA permit for the Project has not yet been received, ECCC sees potential challenges for the proponent in meeting the preconditions for issuing a SARA permit based on the Project design proposed in the IPD (page 3-5).
					
					The information outlined in column (c) as well as Table 1 will help inform this analysis.

	See also SARA Permitting 101 for further details on the SARA permit pre-conditions and application process. ECCC welcomes focused and collaborative conversations between SARA Permitting Officers and the proponent if additional information is required.		of the activity on the species (and their supporting habitat) • Evidence to substantiate why the activity would not compromise the survival or recovery of the species, based on the recovery objectives stated in the species' recovery strategies	have similar habitat characteristics). An important consideration in this regard is that DND has stated no further land will be available on 4CDTC for restoration or compensation activities, which would likely render on-site measures unfeasible. This further emphasizes the importance of considering minimization and avoidance measures for BUNU. The proponent indicates in the IPD that: • "The Project's design is currently under development with a focus on optimizing siting and/or identifying low impact installation methods to reduce potential impacts to the extent practical." (page 10-17); • "TC Energy will work with Indigenous groups, federal departments and provincial agencies, and the public to collaboratively develop approaches to avoid or reduce effects on vegetation. This may include design or siting optimization to reduce interaction with vegetation." (page 10-30); • "Terrestrial ecosystem studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures." (page 10-20); and, • "Where the potential to affect SAR exists, the mitigation hierarchy of avoidance, mitigation and offsetting will be applied. Where impacts cannot be fully avoided, a SARA permit and/or approval (registration) under the Ontario *Species Conservation Act* (once enacted), as applicable, will be sought to allow mitigation to be implemented under the terms of the permit." (page 10-20). ECCC looks forward to receiving this important information and is available to work with the proponent on appropriate mitigation.	
Damage or Danger permit under the *Migratory Birds Convention Act* (MBCA) and its regulations (MBR 2022)	Based on the current project design, permits under the MBCA/MBR 2022 are unlikely. The MBCA and MBR 2022 protect migratory birds and their eggs, and prohibit the disturbance, damage, destruction or removal of migratory bird nests that contain a live bird or viable egg. Migratory birds are	None	The potential for a Damage or Danger permit may become clearer in future phases of the Project, however, there are only certain limited situations where these types of permits may be available, and applications are evaluated on a case-by-case basis.	Further information about the different types of Damage or Danger permits available including applications and report forms can be found at the following link: https://www.canada.ca/en/environment-	Damage or Danger permits are only available in limited situations and are unlikely to be required for this project. But if the criteria for issuing a Damage or Danger permit are met, ECCC does not foresee being unable to issue the permit.

	protected at all times; all migratory bird nests are protected when they contain a live bird or viable egg; and the nests of 18 species (including Pileated Woodpecker and Great Blue Heron) listed in Schedule 1 of the MBR 2022 are protected all year round. These general prohibitions apply to all lands and waters in Canada, regardless of ownership. The MBCA also prohibits the release of substances harmful to migratory birds into waters or an area frequented by migratory birds, or at a place from which the substance could enter such waters or area. Proponents are reminded to develop beneficial management practices (https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/beneficial-management-practices.html), guiding principles, and measures to reduce risk to contravening the MBCA. For more information, please visit: Avoiding harm to migratory birds - Canada.ca (https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds.html) ECCC notes that there is no mechanism available to provide a permit for activities that do not directly target but may harm protected migratory birds, their nests, and/or eggs (e.g., vegetation clearing) under the MBCA and its regulations. A Damage or Danger Permit under the MBR 2022 authorizes permit holders to scare migratory birds, destroy eggs or nests, relocate birds or their nests, or kill birds in instances where the birds, nests, or eggs are causing damage to property or threaten public health and safety. Damage or Danger permits are available in certain limited situations and applications are evaluated on a case-by-case basis. For more information, please visit: Frequently Asked Questions: Migratory Birds Regulations, 2022 - Canada.ca https://www.canada.ca/en/environment-climate-change/services/migratory-bird-permits/faq-migratory-birds-regulations-2022.html		Types of information required for ECCC to provide advice related to the applicability of Damage or Danger permits include: • A clear understanding of the situation and activities for which a permit is being requested. • Timing of the activity being requested. • Identification of the species affected including the number of individuals affected. • Additional information may be required during the permit application process depending on the type of permit being requested.	climate-change/services/migratory-bird-permits/damage-danger.html	